Inspection Entry Date/Time	04/26/2023 9:00 AM (PT)	Announced: Yes
Inspection Exit Date/Time	04/26/2023 12:36 PM (PT)	
Media	Water	
Statute(s)/Program(s)	Clean Water Act, NPDES, Stormwater – Industrial	
Type of Inspection	CEI - Compliance Evaluation Inspection	
Permittee Name	Lamb Weston, Inc.	
Facility Name	Lamb Weston, Inc. – Boardman West Plant	
Facility Physical Address	600 NE Columbia Avenue	
City, State, Zip Code	Boardman, Oregon 97818	
Facility GPS Coordinates	45.845558 N -119.682827 W	
Facility Owner	Lamb Weston, Inc.	
Facility Owner Address	599 South Rivershore Lane	
City, State, Zip Code	Eagle, Idaho 83616	
FRS ID	110014074811	
Permit # / ODEQ File #	ORR121405 / 103436	
SIC Code	2038 – Frozen Specialty Food Manufacturing	
Inspection Contacts:		

Organization	Name	Title	Present in Opening Conf.	Present in Closing Conf.
EPA Region 10	Jon Klemesrud	Lead Inspector	Yes	Yes
Oregon Department of Environmental Quality	Martha Cruse	Inspector	Yes	Yes
Lamb Weston, Inc. Boardman West Plant	Brian Jackson	Plant Manager	No	No
Lamb Weston, Inc. Boardman West Plant	Jared Murrey	Environmental Manager	Yes	Yes
Lamb Weston, Inc.	Mary Beth Miller	Sr. Manager Corporate EHS	No	Yes
Lamb Weston, Inc. Boardman West Plant	Dillon Hadaway	Engineering Manager	No	No

EPA Inspector Signature/Date	JON KLEMESRUD Jon Klemesrud	Digitally signed by JON KLEMESRUD Date: 2023.05.23 14:35:52 -07'00'
Supervisor Signature/Date	PETER CONTRERAS Peter Contreras, Chief FDDWES	Digitally signed by PETER CONTRERAS Date: 2023.05.23 14:52:16 -07'00'

This inspection report is based on information supplied by conversations with Mr. Brian Jackson, Mr. Jared Murrey, Ms. Mary Beth Miller, or direct observations made at the time of the inspection, and records and reports maintained by the permittee. This inspection report may also include information gathered from a review of EPA, State, and/or public records.

SECTION I – INTRODUCTION

Entry and Inspection Chronology

I was joined on the inspection by Oregon Department of Environmental Quality (ODEQ) representative Martha Cruse. To ensure staffing and availability, this inspection was announced just prior. At approximately 2:30 PM on April 25, 2023, I called and left a message with Mr. Brian Jackson, Facility Manager. On the message, I introduced myself and discussed that I had been asked to conduct a routine on-site inspection at the Lamb Weston, Inc. Boardman West Plant, the inspection was to assess compliance with the facility's coverage under ODEQ's Industrial Stormwater Discharge Permit (1200-Z), in coordination with ODEQ.

At approximately 7:30 AM the morning of the inspection (April 26, 2023), Mr. Jackson returned my call. I further explained that I had planned to conduct the inspection that morning. Mr. Jackson welcomed the inspection but explained that he would be unable to attend as he was currently off-site. Mr. Jackson discussed that he would coordinate with Mr. Jared Murrey, Environmental Manager and/or Mr. Dillon Hadaway, Engineering Manager to be available and accompany me on the inspection. I discussed that the inspection would include a walk-through of the facility and a review of permit related documents. We agreed to begin the inspection at 9:00 AM.

Ms. Cruse (ODEQ) and I arrived on-site at approximately 9:00 AM on April 26, 2023, we signed-in as visitors and were escorted upstairs to a conference room and met with Mr. Murrey. Following our initial introductions, I presented my EPA credentials, discussed the purpose/expectations of the inspection, and provided my business card. We had a brief discussion regarding confidential business information (CBI), general facility operations and recent stormwater history. Mr. Murrey explained that he had only been employed by Lamb Weston, Inc. for approximately two months. Prior to Mr. Murrey's onboarding, the facility had been without an environmental manager for approximately one year. Mr. Murrey discussed that during the time without an environmental manager, he believed environmental duties at the facility were generally split between numerous staff.

The inspection consisted of an opening conference, a walk-through of stormwater impacted areas and related infrastructure, a records review, and concluded with a closing conference. During the closing conference, we discussed the walk-through observations, potential areas of concern and next steps. Portions of the records review occurred both pre- and post-inspection, as discussed in Section III of this inspection report. We were accompanied throughout the inspection by Mr. Murrey. Ms. Mary Ann Miller, Corporate EHS Sr. Manager joined us during the facility walk-through and was present for the remainder of the inspection, including the closing conference. Ms. Miller is based out of the Lamb Weston, Inc. corporate office in Kennewick, Washington, supporting several Lamb Weston, Inc. facilities.

Permit/Compliance History

Lamb Weston, Inc. - Boardman West Plant (hereinafter referred to as the "Facility") is permitted to discharge to an adjacent surface water pond under the ODEQ's Industrial Stormwater Discharge Permit (1200-Z). The surface water pond is located approximately 1/3-mile south of the Columbia River. The permit tracking number assigned to the Facility is ORR121405. The Facility is also subject to the sector specific requirements identified in Schedule E of the 1200-Z Permit (Sector U - Food and Kindred Products).

According to file documentation, no prior ODEQ inspection information was available. In 2014, the Facility triggered Tier II corrective action requirements of the permit for benchmark exceedances of zinc, copper, and total suspended solids (TSS). Completed corrective action measures included covering galvanized roofs with a thermoplastic polyolefin (TPO) membrane, installing diversion berms and increased frequency of sweeping/ maintenance. In 2019, the Facility triggered another Tier II corrective action for elevated levels of zinc. As a corrective action, a new stormwater infiltration basin and associated pump station was constructed for 100% infiltration. The construction of the infiltration basin and pump station was completed on December 3, 2021.

SECTION II – OBSERVATIONS

Site Review

The Facility is a frozen potato processing plant, located within an industrial area of Boardman, Oregon. On-site activities include raw potato unloading, washing, blanching, frying, freezing, packaging, and shipping of finished potato products. Activities are conducted during all months of the year. According to Mr. Murrey, production at the Facility occurs 24/7 while operating two 12-hour shifts. Regular administrative business hours are 8:00 AM – 5:00 PM, Monday-Friday. The Facility has been at its current location since approximately 1980, and there are currently 400 employees. See **Attachment A**, General Location Map.

Stormwater within pervious/graveled areas of the property is designed to be infiltrated/evaporated within those areas. For the Facility's impervious areas (majority of the site), stormwater is collected within a series of catch basins and routed to three separate stormwater infiltration basins designed to infiltrate/evaporate stormwater. Two of the three infiltration basins are smaller in size and serve the southern industrial areas and southern building roof drains. In 2021, a larger infiltration basin was constructed in the northwest corner of the property and serves the remaining impervious areas and roof drains. As discussed earlier in this report, the new infiltration basin was constructed in response to a 2019 Tier II corrective action and designed to infiltrate stormwater that was previously discharged to a surface water pond located immediately north of the Facility. The surface water pond is the permitted receiving water.

The Facility has not discharged to the surface water pond since the infiltration pond and associated pump station was completed, on December 3, 2021.

We began the inspection walk-through within the southeast parking areas. We generally traveled the process flow from raw potato receiving to finished product shipping. During the walk-through we also observed other industrial areas, including material storage areas, the cooking oil rail loading/unloading areas, potato residual staging areas, hazardous waste storage area, empty tote storage and solid waste storage areas. Photographs taken during the site-walk through are attached to this inspection report as **Attachment B**, Photograph Log.

Walk-Through Observations:

Location: Southeast Parking Lot
Observation #: OB-01
We first observed the Facility's main parking lot and truck access road (**Photo 1**). The access road is generally the east end of the main parking area and is used for incoming raw potato delivery by truck/trailer. Four catch basins serve this general area and route stormwater to the Facility's primary pump station and associated infiltration located in the northwest section of the property. Prior to December 2021, the catch basins discharged directly to the northern surface water pond. At the time of inspection, catch basins within the parking area were observed to be equipped with a removable metal strainer basket and were generally free of accumulated sediment/debris. According to on-site records, catch basins were last cleaned by the Facility's sanitation staff on February 13, 2023. I discussed that the 2014 Tier II Corrective Action Report mentioned possibly utilizing treatment units within the catch basins, Mr. Murrey was not aware of any additional catch basin BMPs beyond the strainer baskets, such as sediment fabric or treatment media.
Location: Raw Product Receiving Area
Observation #: OB-02
We continued the walk-through north, to the raw product (potato) receiving area (**Photo 2**). Raw potatoes are received at the Facility via truck where they are conveyed indoors and unloaded for further processing, including washing, blanching, frying, freezing, and packaging. Being relatively new to the Facility, Mr. Murrey wasn't able to provide the approximate number of incoming trucks/trailers of raw product being delivered each day. The SWPCP lists potential pollutants from this raw product receiving area to include raw potatoes, sediment, vines,

rocks, residual truck oil and grease, and silt water from the silt separation system. At the time of inspection, we observed piles accumulated sediment and a few raw potatoes outdoors in the general receiving area, primarily beneath some staged trailers containing the raw product. It was discussed that stormwater from this area generally travels north as sheet flow toward a depressed area near a curbed rail spur. A stormwater catch basin is located upgradient of the depressed area to convey stormwater to the Facility's pump station and northwest infiltration basin. As discussed earlier in this report, prior to December 2021, the catch basin discharged directly to the northern surface water pond. Mr. Murrey was not aware of any sweeping practices or sweeping contracts utilized at the Facility, including at this raw product receiving area. Residuals (sediment/rocks) from the silt separation area are removed and staged in bunkers located in a northern area of the Facility. We also discussed that the Facility contracts with "IFC" (Industrial Fumigant Company, LLC), for external rodent boxes and other pest control measures within the processing areas.

Location: Empty Tote and Potato Residuals Staging Area

Observation #: OB-03

We continued the walk-through further north and observed an empty tote storage area within the northeast corner of the Facility (**Photo 3**). Just west of the empty tote storage area is a potato residuals storage area, where discarded processing wastes are loaded and staged for hauling. It was discussed that similar to the raw product receiving area, stormwater from this area generally travels north as sheet flow, towards the same depressed area near the rail spur. A stormwater catch basin located upgradient of the depressed area conveys stormwater to the Facility's pump station and northwest infiltration basin.

At the time of inspection, we observed discarded potato residuals on the surface of several loading areas. We also observed accumulated sediment north of the loading area, near the rail spur curbing (**Photo 4**).

Location: Stormwater Pump Station

Observation #: OB-04

We then observed the Facility's stormwater pump station and wet well associated with the NE infiltration basin (**Photo 5**). The pump station was manufactured by Gorman-Rupp and was installed in 2021, in conjunction with the construction of the northeast infiltration basin. The pump station was described to operate based on float switches within the wet well. At the time of inspection, we observed both a red and green light illuminated on the top of the lift station. When asked about the station's alarm system and illuminated indicator lights, Mr. Murrey discussed that being relatively new to the Facility, he would have to follow-up post-inspection regarding specifics of the pump station and alarm system.

Mr. Murrey lifted the cover of the wet-well, we observed a slight trickle of flow entering the wet-well from one of the influent pipes. When asked about the source of the influent flow during the current dry weather conditions, Mr. Murrey discussed that he would have to follow-up as he was not certain of the source, possibly residual flow from a recent broken water pipe. Mr. Murrey explained that earlier in the day, he was informed that a pipe leak associated with some ongoing interior construction had occurred within the Facility's main office entrance area. Mr. Murrey was going to confirm the source of the water and if it entered the nearby stormwater catch basin in the parking area.

Location: Raw Product Residual Storage Area

Observation #: OB-05

The walk-through continued west, to the raw product/residual storage bunkers and surrounding areas. We observed a roof downspout filtration unit attached to a production building (**Photo 6**). According to Mr. Murrey, the roof downspout is routed to the stormwater pump station that was just observed. Mr. Murrey was unsure when the filtration unit was installed or last serviced.

We then walked north and observed the raw product residual storage area, located southwest of the surface water pond. Residuals from the raw product silt separation process are temporarily stored in uncovered concrete

"bunkers" contained within the area (**Photo 7**). The area is slightly bermed to prevent stormwater from entering the process area, as well as contain any runoff/stormwater from entering the process area. An adjacent catch basin (**Photo 8**) captures the stormwater/wastewater within the bermed area and routes to the Facility's process wastewater system. Process wastewater generated at the Facility is discharged to the Port of Morrow wastewater treatment plant.

Mr. Murrey explained that the storage bunkers were temporarily moved the week prior, to address a spill-cleanup of cooking oil that occurred in the area. The spill occurred due to a binded rotary screen within the Facility's process wastewater system. The spill was reported to ODEQ and did not reach the stormwater system. Material associated with the spill was contained on-site and removed by a contractor (Safety-Kleen).

Location: Cooking Oil Unloading/Loading Area

Observation #: OB-06

We continued west and observed the cooking oil unloading/loading areas located north of the main plant. At this location, rail cars containing cooking oil are first heated, and then oil is pumped into on-site storage tanks. According to the SWPCP, potential pollutants from this area includes edible (cooking) oils, residual vehicular oils, and condensate from the oil car heating process. We observed several areas where condensate and residual oil staining was present on the paved surface areas. We observed the single stormwater catch basin that serves this area, located downslope to the north. The catch basin was covered with a seal/mat, and water was observed to be traveling to the catch basin and ponding above the seal/mat. (**Photo 9**).

Location: Covered Hazardous Waste Storage Area and Dumpster Storage Area

Observation #: OB-07

We continued the walk-through further west and observed the covered hazardous waste storage/containment area. The area was locked/gated and was contained under cover, with secondary containment and a non-discharging catchment drain. West of this area was the Facility's dumpster area where several roll-off containers are located for general waste and scrap metal (**Photo 10 & Photo 11**). According to the SWPCP, scrap metal is picked up by a local metal scrap service provider and the refuse from the trash dumpsters are transported to the regional transfer station under contract with a local waste hauler. We observed the dumpsters to be without lids/covers and several areas of accumulated sediment/debris. Located downslope to the east, a single stormwater catch basin serves this area. The catch basin was covered with a seal/mat. As discussed earlier in this report, Mr. Murrey was not aware of any sweeping practices or contracts utilized by the Facility, including at this dumpster storage area.

Location: Northwest Infiltration Basin

Observation #: OB-08

We then observed the northwest infiltration basin that receives stormwater from the northern pump station (**Photo 12**). As discussed earlier in the report, stormwater previously discharged to the northern surface water pond now discharges to the northwest infiltration basin. Mr. Murrey discussed that he believes the infiltration basin is currently operating as designed and showed a recent picture on his phone of stormwater within the infiltration basin that had since infiltrated/evaporated.

Location: Empty Tote Staging Area

Observation #: OB-09

We continued the walk-through southwest and observed another empty tote staging area, located near the south of the northwest infiltration basin. The surface within the area was compacted gravel, as were the remaining areas of the western perimeter. The nearest catch basin was the one just previously viewed, to the east within the paved dumpster area. We observed one tote that was full of cooking oil and exposed without cover (**Photo 13**). No staining or residuals were observed in the general area.

Location: Southern Area(s) & Main Entrance

Observation #: OB-10

We continued the walk-through to the south and observed the two southern infiltration basins and the Facility's shipping/loading area(s) (**Photo 14 - 16**). In general, stormwater within the Facility's southern areas is either infiltrated/evaporated within the impervious areas or routed to the two southern infiltration basins, where stormwater is then infiltrated/evaporated. Industrial activities occuring within the southern areas include vehicle traffic for trucking/shipping, used cooking oil filter storage (**Photo 17**) and metal/pipe storage (**Photo 18**). We concluded the walk-though after observing the parking lot catch basin that had possibly received residual flow from an earlier pipe leak (**Photo 19**).

SECTION III – RECORDS REVIEW

Record: Storm Water Pollution Control Plan (SWPCP)

Ref #: RR-001

A copy of the Facility's SWPCP was on-site and available for review at the time of inspection. An electronic version of the SWPCP was also provided pre-inspection by ODEQ. The SWPCP listed the same revised and certification date of August 30, 2021. The SWPCP was revised by Mr. Nabil Mohamed, the prior Environmental Manager and certified by Mr. Brian Jackson, Plant Manager. The SWPCP included the applicable elements required/discussed within Schedule A. Part 10 of the permit. The SWPCP also included General Location Map and a blank Monthly Stormwater Inspection Checklist. Mr. Murrey discussed that he had recently reviewed the SWPCP as part of his recent onboarding, he plans to update the document to align with current staffing/contacts and include the northwest infiltration basin and associated pump station that was installed in 2021.

Post-inspection on May 11, 2023, the Facility provided an update that they have contacted Valley Science and Engineering for assistance in updating the SWPCP. See **Attachment C**, EPA and DEQ Response Letter.

Record: Site Inspection Reports & Employee Training

Ref #: RR-002

When asked about Monthly Site Inspection Reports required by the permit, Mr. Murrey did not believe they were being conducted by the Facility during the time without an Environmental Manager. Mr. Murrey also stated that he hadn't documented a monthly site inspection since starting at the Facility approximately two months prior. Mr. Murrey discussed that he was able to view/access some prior inspection reports completed by the previous Environmental Manager, Mr. Nabil Mohamed in various electronic file locations. Via Mr. Murrey's laptop, we viewed the available documentation.

The most recent monthly site inspection and associated reports was documented on 02/17/2022. Previous inspections were also documented on 01/18/2022, 12/21/2021, 11/24/21, 10/26/2021, 09/23/2021, 08/25/2021. 07/19/2021, 06/08/2021, 05/19/2021, 04/22/2021, 03/24/21, 02/23/2021, 01/21/2021. There were also monthly inspection records completed by the sanitation division in 2020, including on 01/28/2020, 02/21/2020 and 03/19/2020. Site inspections were primarily documented using the Facility's Monthly Stormwater Inspection Checklist. Documentation also included a record of the catch basin cleanouts being conducted by the sanitation division on February 13, 2023.

When asked about employee training, Mr. Murrey and Ms. Miller discussed that stormwater training is completed annually and for new hires within a Lamb Weston, Inc. electronic training platform. Training was last documented in January 2023. We discussed that Ms. Miller or Mr. Murrey would provide an electronic copy of the PowerPoint presentation of the stormwater training curriculum post-inspection via email. On May 11, 2023, the Facility provided follow-up including a PowerPoint of the training materials.

Record: Discharge Monitoring Data (DMR) & Laboratory Analytical Data

Ref #: RR-003

DMRs and associated stormwater monitoring/analytical data was reviewed as part of this inspection. According to Mr. Murrey and a review of DMR data, the Facility has not discharged since the installation of the northwest infiltration basin in December of 2021. For past discharges to the adjacent surface water pond, the Facility was conducing stormwater monitoring per Schedule B (Monitoring Requirements) within the permit. Monitoring was completed 4 times per year for PCBs, total copper, total lead, total zinc, pH, total suspended solids (TSS), oil and grease and mercury. The facility sampled from three separate outfalls (Outfall 001, Outfall 002, and Outfall 003), each discharging the to the surface water pond.

On December 26, 2019, after continuing to exceed the benchmark for zinc at Outfall 002 and 003, the Facility submitted a new Tier II Corrective Action Report and a Mass Reduction Waiver. The Facility would address the exceedances by constructing the new infiltration basin for 100% infiltration. On August 17, 2020, ODEQ approved the Tier II corrective action. See **Attachment D**, 2019 Tier II Corrective Action Engineering Report & ODEQ Approval Letter.

Via a Facility spreadsheet on Mr. Murrey's laptop, the following benchmark exceedances were noted while implementing the Tier II corrective action:

Quarter 3, 2021 – TSS reported value: 276 mg/l (benchmark 100 mg/l)
Quarter 3, 2021 – Zinc reported value: 0.248 mg/l (benchmark 0.12 mg/l)
Quarter 4, 2021 – Zinc reported value: 0.18 mg/l (benchmark 0.12 mg/l)
Quarter 2, 2020 – TSS reported value: 113 mg/l (benchmark 100 mg/l)
Quarter 4, 2020 – Zinc reported value 0.214 mg/l (benchmark 0.12 mg/l)

Select analytical and visual reports including chain-of-custody documentation were reviewed. Reporting Quarters (Q) reviewed included Q3- 2020/2021.

For Q3 - 2020/2021, sampling dates included January 8, 2021, and November 6, 2020. On the Q3 – 2020/2021 DMR, it was reported in the DMR correspondence that for the precipitation even of January 8, 2021, a freshwater leak occurred within the facility premises and previous to this precipitation event and caused high silt loading into the filters leading to high suspended solids readings in the lab."

The following benchmark exceedances of the geometric mean were noted:
Outfall 001 – TSS reported value 205 mg/l (benchmark 100 mg/l)
Outfall 001 – Copper reported value 0.033 mg/l (benchmark 0.020 mg/l)
Outfall 001 – Zinc reported value 0.33 mg/l (benchmark (0.12 mg/l)

Outfall 002 – Zinc reported value 0.24 mg/l (benchmark 0.12 mg/l)
Outfall 003 – TSS reported value 177 mg/l (benchmark 100 mg/l)
Outfall 003 – Zinc reported value 0.25 mg/l (benchmark 0.25 mg/l)

It was also noted that the January 8, 2021 analytical report that the TSS sample for Outfall 001 required a dilution factor of 100.00.

SECTION V - AREAS OF CONCERN

Areas of Concern may not be in sequential order.

The presentation of Areas of Concern (AOC) does not constitute a formal compliance determination or violation.

AOC #1: Uncovered Dumpsters

Regulation and/or Permit Requirement:
Schedule A.1.c. within the permit states: "Cover all waste contained in bins or dumpster where there is a potential for drainage of stormwater through the waste to prevent exposure of stormwater to these pollutants. Acceptable covers include storage of bins or dumpsters under roofed areas or use of lids or properly secured temporary covers such as tarps. "

Observation:

As discussed earlier in the report, during the walk-through within the designated dumpster area we observed dumpsters used for general garbage and scrap metal to be without covers or lids (**Photo 10 & Photo 11**). Along the southern edge of the Facility, we also observed the used cooking oil filter discard bin without cover or containment in a southern area of the facility. Additionally, oil staining was observed throughout the area containing the cooking oil discard bin (**Photo 17**).

The concern is the observed lack of cover(s) or lid(s) on the waste dumpsters when compared to the language in the permit. It is recognized that the nearest stormwater catch basin to dumpster area was equipped with a drain cover/mat. As the inspection occurred during dry weather conditions, the seal/effectiveness of the drain cover/mat was unknown. Although the Facility has reported no recent discharge with the implementation of the infiltration basins, sediment/debris/pollutants entering the stormwater system could have the potential to accumulate within the pump station and/or infiltration basins impacting their performance.

AOC #2: Housekeeping

Regulation and/or Permit Requirement:

Schedule A.1.g. within the permit states: "Routinely clean all exposed areas that may contribute pollutants to stormwater with measures such as sweeping at regular intervals, litter pick-up, keeping materials orderly and labeled, promptly clean-up spills and leaks, proper maintenance of vehicles and stowing materials in appropriate containers."

Observation:

As discussed earlier in this report, during the walk-through we observed several areas with accumulated sediment/debris, specifically at the raw product receiving area (**Photo 2**), potato residual staging area (**Photo 4**), dumpster area (**Photo 11**) and the used cooking oil filter storage bin area (**Photo 17**). At the time of inspection, Mr. Murrey was not aware of any sweeping practices or sweeping contracts utilized at the Facility, including at these industrial areas.

The concern is the accumulated sediment observed within these areas when compared to the language in the permit. Although the Facility has reported no recent discharge with the implementation of the infiltration basins, sediment/debris/pollutants entering the stormwater system could have the potential to accumulate within the pump station and/or infiltration basins impacting their performance.

On May 11, 2023, the Facility provided follow-up correspondence stating that "the parking lot is routinely swept, and litter is collected and properly disposed. Monthly inspections help identify when additional maintenance is required on an as needed basis. The parking lot drains discharge to a catch basin containing a weir designed to drop out sediment and debris prior to discharge into the pond." See **Attachment C**, EPA and DEQ Response Letter.

AOC #3: Alarm Light Illuminated at the Stormwater Pump/Lift Station

Regulation and/or Permit Requirement:

Schedule A.1.i. within the permit states: "Clean, maintain and repair all control measures including stormwater structures and temporary measures, catch basins, and treatment facilities to ensure effective operation as designed and in a manner that prevents the discharge of pollution."

Observation:

As discussed earlier in the report, during the walk-through while at the stormwater pump station we observed both a red and green light illuminated on the top of the pump/lift station (**Photo 5**). When asked about the station's alarm system and illuminated indicator lights, Mr. Murrey discussed that being relatively new to the Facility, he would have to follow-up post-inspection regarding specifics of the pump station and alarm system.

On May 11, 2023, the Facility provided follow-up correspondence (**Attachment C**) stating that "the red-light alert was indicative of a float backup error which occurred on 02/04/2023. All stormwater continued to discharge to the bioswale as required. Harms Engineering will be contacted as a follow-up to ensure the lift station alarm is operating properly."

Separately in response to my inquiry if all connections to the surface water pond were capped with the design/connection to the northwest infiltration pond, the Facility provided that "all lines routed to the surface water pond were capped except for an overflow line connected to the lift station sump. This pipe was to remain as an overflow in accordance with Harms Engineering Stormwater Pump Station design.

The concern is that the alarm system associated with the stormwater pump/lift station may not be currently operating as designed. In the event of a pump failure, the pump station would overflow to the surface water pond.

AOC #4: Exposed Tote of Used Cooking Oil

Regulation and/or Permit Requirement:

Schedule A.1.c. within the permit states: "Recycle or properly dispose of wastes to eliminate or minimize exposure of pollutants to stormwater. Cover all waste contained in bins or dumpster where there is a potential for drainage of stormwater through the waste to prevent exposure of stormwater to these pollutants. Acceptable covers include storage of bins or dumpsters under roofed areas or use of lids or properly secured temporary covers such as tarps. "

Observation:

As discussed earlier in the report, during the walk-through within the empty tote storage area we observed a full tote containing used cooking oil according to Mr. Murrey. The top of the tote had been cut open and was exposed without a lid. The concern is the full tote of used oil observed without a functioning lid/cover and potentially exposed to stormwater during rain events. It is recognized that the nearest stormwater catch basin was equipped with a drain cover/mat, however, the seal/effectiveness of the drain cover/mat was unknown due to the dry weather conditions. Although the Facility has reported no recent discharge with the implementation of the NW infiltration basin, cooking oil entering the stormwater system could have the potential to accumulate within the pump station and/or infiltration basins impacting their performance.

AOC #5: Observed Flow within the Pump Station Wet-Well

Observation:

As discussed earlier in the report, during the walk-through at the stormwater pump/lift station we observed a slight trickle of influent flow during dry weather conditions. When asked about the source of the influent flow during the current dry weather conditions, Mr. Murrey discussed that he would have to follow-up as he was not certain of the source, and indicated it was possibly residual flow from a recent broken water pipe. Mr. Murrey

explained that earlier in the day, he was informed that a pipe leak associated with some ongoing interior construction had occurred within the Facility's main office entrance area. Mr. Murrey was going to confirm the source of the water and if it entered the nearby stormwater catch basin in the parking area.

On May 11, 2023, the Facility provided follow-up correspondence (**Attachment C**) stating that "the source of the water entering the lift station was determined to be process water from a plugged line on the rooftop which entered rooftop storm drains. The water was primarily fresh water utilized to flush the line. The lift station sump was pumped out and transferred to the process water treatment system for treatment and discharge to the Port of Morrow.

AOC #6: Missing Monthly Site Inspection Documentation

Regulation and/or Permit Requirement:

Schedule A.12.a. describes the requirement of monthly inspections.
Schedule A.12.i. states: "Document monthly inspections in an inspection report that is retained on-site and submitted to DEQ or agent upon request. The inspection report must include:

- *i. The inspection date and time;*
- *ii. The name(s) of the inspector(s);*
- *iii. Control measures and treatment facilities needing cleaning, replacement, maintenance, reconditioning or repair;*
- *iv. The condition of the drainage and conveyance system and need for maintenance;*
- *v. Previously unidentified sources of pollutants;*
- *vi. Stormwater discharge visual observations*
- *vii. Nature of the discharge; whether caused by snow or rain; and*
- *viii. Any corrective action response, source control or maintenance taken or scheduled to remedy problems found.*

Observation:
As discussed earlier in this report, the Facility was unable to provide monthly site inspection reports from March 2022 to the date of the inspection (April 26, 2023).

SECTION VI – CLOSING CONFERENCE

Closing Conference

Following the walk-through and records review a closing conference was held with Mr. Murrey and Ms. Miller. We discussed our general observations, areas of concern and follow-up items including the records request. I then thanked them for their time and assistance during the inspection, we signed out of the visitor log and departed the Facility.

SECTION VII – POST INSPECTION CORRESPONDENCE

On May 11, 2023, the Facility provided follow-up documentation and responses to items discussed at the time of inspection. See **Attachment C**, EPA and DEQ Response Letter.

SECTION VIII – LIST OF APPENDICES

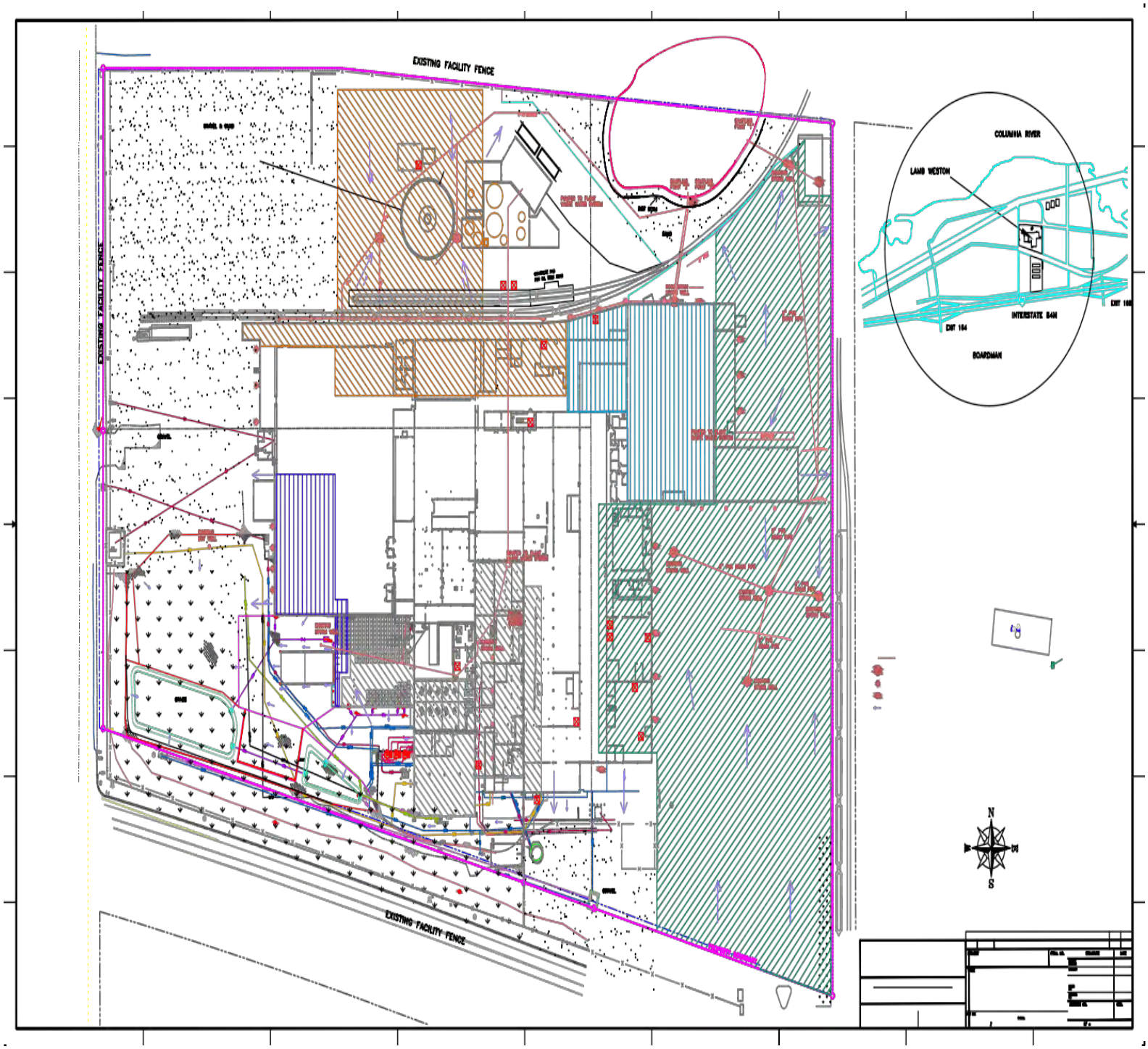
Attachment A – General Facility Map
Attachment B – Photograph Log
Attachment C – EPA and DEQ Response Letter
Attachment D – 2019 Tier II Corrective Action Engineering Report and Approval Letter

ATTACHMENT A

General Facility Map

ATTACHMENT A

General Location Map
Site Map (pdf file attached separate)
(Drawing #7000-301)



ATTACHMENT B

Photograph Log

All photographs taken by Jon Klemesrud on April 26, 2023

Nikon Coolpix AW100

Photograph Log - Lamb Weston, Inc. – Boardman West Plant

Photo #:01 (DSCN3218)
Description: Facing south, photo of a stormwater catch basin within the facility parking lot. According to Mr. Murrey and the SWPCP, the parking lot stormwater catch basins are routed north to the pump station and associated northwest infiltration basin.

Photo #:02 (DSCN3219)
Description: Facing south, photo of the raw product receiving area. Observed areas with accumulated sediment.

Photo #:03 (DSCN3220)
Description: Facing northwest, photo of empty chemical totes and the discarded product storage/staging area.

Photo #:04 (DSCN3221)
Description: Facing southwest, photo of the stormwater catchment area and catch basin near the discarded product storage/staging area.

Photograph Log - Lamb Weston, Inc. – Boardman West Plant

Photo #:05 (DSCN3222)
Description: Facing north, photo of the Gorman Rupp stormwater lift station associated with the northwest infiltration basin.

Photo #:06 (DSCN3223)
Description: Facing west, photo of a roof downspout filtration unit manufactured by Clean Way.

Photo #:07 (DSCN3224)
Description: Facing northwest, photo of residual storage area. Stormwater captured within this area is collected separately and routed to wastewater treatment system for reuse and/or discharge to the Port of Marrow wastewater treatment plant.

Photo #:08 (DSCN3225)
Description: Facing northwest, photo of catch basins serving the residual storage area. Catch basins are plumbed to the process wastewater treatment system.

Photograph Log - Lamb Weston, Inc. – Boardman West Plant

Photo #:09 (DSCN3226)
Description: Facing south, photo of the cooking oil unloading area (rail). Stormwater catch basin is located just north and covered with a drain cover mat.

Photo #:10 (DSCN3227)
Description: Facing northwest, photo of the scrap metal dumpster and general garbage/dumpster storage area, just east of the northwest bioswale. The adjacent stormwater catch basin was covered with a drain cover mat.

Photo #:11 (DSCN3229)
Description: Facing south, photo of the scrap metal dumpster and other dumpsters used for garbage/waste storage. No lids observed. Accumulated sediment observed within the area.

Photo #:12 (DSCN3228)
Description: Facing southwest, photo of the northwest infiltration basin that receives stormwater from the pump station.

Photograph Log - Lamb Weston, Inc. – Boardman West Plant

Photo #:13 (DSCN3230)
Description: Facing west, photo of empty tote storage area. One tote was marked “used oil” and was full of used cooking oil.

Photo #:14 (DSCN3231)
Description: Facing southeast, photo of the southeast infiltration basin. Receives stormwater from southern areas and the southeast building roof drain.

Photo #:15 (DSCN3232)
Description: Facing north, photo of the final product shipping area.

Photo #:16 (DSCN3233)
Description: Facing southwest, photo of the southern infiltration basins that receives stormwater from the southern areas outside of the boiler building.

Photograph Log - Lamb Weston, Inc. – Boardman West Plant

Photo #:17 (DSCN3234)
Description: Facing north, photo of used cooking oil filters contained within an uncovered dumpster. Used oil residuals were observed outside of the containment bin.

Photo #:18 (DSCN3234)
Facing south, photo of an empty drum storage area and "boneyard area."

Photo #:19 (DSCN3236)
Description: Facing north, photo of northwest parking lot catch basin.

ATTACHMENT C

EPA and DEQ Response Letter

LambWeston
SEEING POSSIBILITIES IN POTATOES

Lamb Weston
Boardman West
600 NE Columbia Ave (PO Box 379)
Boardman, OR 97818

5/11/2023

VIA EMAIL

Jon Klemesrud
Field, Data, & Drinking Water Enforcement Section
Enforcement & Compliance Assurance Division (M/S 20-C04)
U.S. Environmental Protection Agency, Region 10

Martha Cruse
Stormwater Quality Inspector, Eastern Region
Oregon Department of Environmental Quality
803 Main St.
Klamath Falls, OR 97601

RE: Records Request for EPA Region 10/Oregon Department of Environmental Quality Stormwater Inspection
Lamb Weston (Boardman West)
600 NE Columbia Ave (PO 379) Boardman, OR 97818

Dear Mr. Klemesrud and Ms. Cruse:

The United States Environmental Protection Agency (EPA) and the Oregon Department of Environmental Quality (ODEQ) conducted a stormwater inspection of Lamb Weston's Boardman West facility on April 26, 2023. Please see the attached requested documentation and follow-up responses to the questions asked during the inspection as clarified in your May 3, 2023 electronic communications. For your convenience, we have repeated your questions followed by Lamb Weston's response.

Requested Documentation:

1. DMRs and analytical data for January 8th, 2021 (3rd Q) and November 6, 2020 (2nd Q).

See attached:

- May 7, 2021 transmittal letter to ODEQ
- May 7, 2021 Discharge Monitoring for 3rd Quarter 2020-2021 Reporting Period
- Columbia Laboratories Analytical Reports dated January 25, 2021 and January 27, 2021 for the January 8, 2021 stormwater samples, and Columbia Laboratories Analytical Report dated November 30, 2020 for the November 6, 2021 stormwater samples.
- February 10, 2021 transmittal letter to ODEQ (unsigned) for 2nd Quarter 2020-2021 Reporting Period

Lamb Weston has not yet located a copy of the Discharge Monitoring Report submitted to ODEQ for the 2nd Quarter 2020-2021 Reporting Period. The May 7, 2021 Discharge Monitoring Report for the 3rd

Quarter 2020-2021 Reporting Period also includes the analytical results from the November 6, 2020 sampling event. Lamb Weston has contacted ODEQ regarding the 2nd Quarter Discharge Monitoring Report for the 2020-2021 Reporting Period. Lamb Weston will provide upon receipt.

2. Corporate Stormwater Training PowerPoint.

See attached.

EPA/DEQ Questions:

1. Regarding the catch basins, it was discussed/documented that sanitation provides storm drain maintenance/catch basin clean outs. This was last documented as occurring in February 2023. The more general question is if this occurs routinely on a preventative maintenance schedule or as needed basis.

Response:

The monthly inspection requirements in the approved SWPCP do not currently include the catch basins. Because there are no off-site stormwater discharges, the inspection requirements are limited to the items identified on Attachment B of the SWPCP. Lamb Weston typically inspects the catch basins monthly, cleans the screens and replaces the filters, as necessary.

2. Regarding the raw material unloading area, what are the current sediment control practices in the outdoor parking/receiving area. At the time of inspection, sweeping practices were unknown and we observed some accumulated sediment piles and some raw potatoes.

Response:

As specified in the approved SWPCP, the parking lot is routinely swept, and litter is collected and properly disposed. Monthly inspections help identify when additional maintenance is required on an as needed basis. The parking lot drains discharge to a catch basin containing a weir designed to drop out sediment and debris prior to discharge into the pond.

3. Regarding the stormwater lift station, both the red and green lights were illuminated. Was/is the lift station alarm system currently operating as designed?

Response:

The red-light alert was indicative of a float backup error which occurred on 2/04/2023. All stormwater continued to discharge to the bioswale as required. Harms Engineering will be contacted as a follow-up to ensure the lift station alarm system is operating properly.

4. Additionally, we observed some water entering the lift station during dry weather conditions, was the source determined to be from a roof/piping leak that occurred earlier in that morning?

Response:

The source of the water entering the lift station was determined to be process water from a plugged line on the rooftop which entered rooftop storm drains. The water was primarily fresh water utilized to flush the line. The lift station sump was pumped out and transferred to the process water treatment system for treatment and discharge to the Port of Morrow.

5. Regarding the surface water pond, were all connections capped? Was the 2021, NE constructed bioswale engineered to discharge/overflow to the surface water pond via a direct connection?

Response:

All lines routed to the surface water pond were capped except for an overflow line connected to the lift station sump. This pipe was to remain as an overflow in accordance with HARMS Engineering Stormwater Pump Station design.

6. Why is there silt fence surrounding the surface water pond?

Response:

The silt fencing was left in place as result of awaiting final stabilization to occur. The process water release and associated cleanup on 4/18/23 created newly disturbed ground. Lamb Weston has contacted Valley Science and Engineering for assistance in updating SWPCP and required BMPs to properly stabilize the disturbed area and remove the silt fencing at the completion of the activities.

Please contact Jared Murrey at (458-235-2344) if you have any additional questions or require any additional information.

Sincerely,

Brian Jackson
Plant Manager | Lamb Weston Boardman West
600 NE Columbia Ave (PO 379)
Boardman, OR 97818

Attachments:
Storm water DMR 3Q_2020_2021 Cover Letter LWBW_SW
21-000365_SW_3Q data
21-000380_SW_3Q data
1200zDMR LWBW 2020_2021 3Q_Regional
Storm water DMR 2Q_2020_2021 Cover Letter LWBW_SW
Corporate Stormwater Training PowerPoint

cc:

Brian Jackson, Plant Manager
Dillon Hadaway, Engineering Manager
Jeshua Sargetis, Corporate EHS
Mary Beth Miller, Corporate EHS
Ian Toevs, Director of Nature Resource Conservation

ATTACHMENT D

2019 Tier II Corrective Action Engineering Report and ODEQ Approval Letter

Lamb Weston
SEEING POSSIBILITIES IN POTATOES

Lamb Weston
600 NE Columbia Avenue
Boardman, OR 97818
T 541.481. 3070
F 541.481.8205

December 26, 2019

Sent Certified Mail # 7019 0140 0000 9764 9636

Mr. Fredrick Moore
Department of Environmental Quality – Eastern Region
475 NE Bellevue Drive, Suite 110
Bend, OR 97701

RE: Storm Water Tier II annual report (SWPCP File # 103436, GEN 12Z)
Reporting period: Tier II 2017 - 2019 year

Dear Mr. Moore,

The geometric mean of zinc for outfalls #2 and #3 to the surface water pond continues to exceed the benchmark. Therefore, Lamb Weston Boardman West Plant is hereby submitting a new Tier II Correction Action Report and a Mass Reduction Waiver.

To comply with permit, Lamb Weston Boardman West Plant will construct a new infiltration basin/bioswale, storm water pump station, and force main. The stormwater water from outfalls #1, #2, and #3 will be routed to the new infiltration basin for 100% infiltration. This will result in 0.0 lb. of pollutants discharging to surface water – a 100% mass reduction.

The past efforts to mitigate the pollutant with source control measures and catch basin treatment units were only partially successful; a low impact development (LID) infiltration basin/bioswale is the preferred final solution, as it would eliminate discharge of pollutants to surface water. Lamb Weston's experience with existing on-site bioswales has been successful in controlling stormwater. The plan is to have the new bioswale installed and operating by midyear of 2020, before the rains in the fall.

Attached are the following:

- Tier II Corrective Action Engineering Report, prepared by Harms Engineering, Inc. dated 12/26/2019;
- Tier II revised Storm Water Pollution Control Plan (SWPCP) checklist;
- Tier II Mass Reduction Waiver Basin Table; and
- Updated SWPCP.

If you have questions concerning this submittal, please contact our Environmental Manager, Nabil Mohamed at 541.481.8203 or by email at Nabil.Mohamed@Lambweston.com.

I certify that under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Carl Coombes (Plant Manager)

cc: Nabil Mohamed, Ian Toevs, John Neal, Christine Batayola

HARMS ENGINEERING, INC.

LAMB WESTON BOARDMAN WEST PLANT
TIER II CORRECTIVE ACTION
ENGINEERING REPORT

Prepared for:

Lamb Weston Boardman
600 NE Columbia Ave.
Boardman, OR

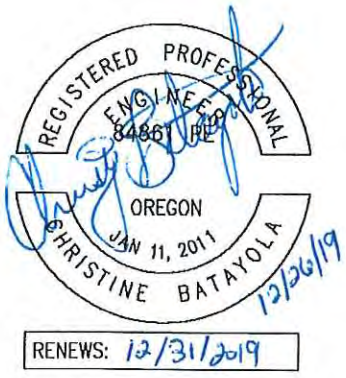
Project Location:

Lamb Weston Boardman
600 NE Columbia Ave.
Boardman, OR

Prepared By:

Christine Batayola, PE

December 2019



Project #19-167.1

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Executive Summary

Portions of the Lamb Weston Boardman West Plant drain stormwater runoff to surface water. That runoff has not been meeting the Oregon State Department of Environmental Quality (DEQ) permit limits for zinc. In order to comply with the permit, the plant will install a new stormwater pump station and forcemain and construct a infiltration basin/bioswale. Stormwater will be diverted from the surface water pond to the bioswale for 100% infiltration and evaporation.

System Information

Site Name:	Lamb Weston Boardman West Plant
Physical Address:	600 NE Columbia Ave. Boardman, OR 97818
Mailing Address:	PO Box 379 Boardman, OR 97818
County:	Morrow County
Site Owner:	Lamb Weston, Inc. 599 South Rivershore Ln. Eagle, ID 83616
DEQ Permit File #:	103436
Contact Person:	Nabil Mohamed, Environmental Manager
Contact Address:	600 NE Columbia Ave. Boardman, OR 97818
Contact Phone Number:	(541) 481-8203 (541) 481-2011 x 67780
Contact Email:	nabil.mohamed@lambweston.com

Background

The Lamb Weston Boardman West plant is a frozen potato processing plant on Columbia Ave. in Boardman, OR. On-site activities include unloading, washing, blanching, frying, freezing, packaging, and shipping of finished products.

Figure 1 : Vicinity Map

Three stormwater drainage areas within the 24-acre site outfall to a surface water pond located in the northeast corner of the site (refer to attached site plan, Exhibit 1).

Area 1 consists of employee parking lots in the southeast corner of the site, truck and forklift maneuvering areas in the northeast area of the site, and roofs over the north end of the USDA room and the west side of the pole barn. The parking lots surface drain to catch basins that flow to a sediment trap and then to the outfall at the pond. The roofs and truck maneuvering areas at the north end surface drain directly to the sediment trap, the first chamber of which has a grated cover.

Area 2 consists of the receiving building roof and the east end of the rail dock roof. Three roof drain outlet pipes all discharge into a single storm water manhole that outlets through a pipe to the pond. There are no catch basins in drainage area #2.

Area 3 includes the west end of the rail dock roof, the north east corner of the cold storage room roof, and the paved area around the clarifier (between the wastewater building and the boneyard).

Table 1 gives the contributing area and the geometric mean stormwater runoff concentrations (exceedances are in bold) for total suspended solids (TSS), zinc, and copper for each of the three drainage areas included in this report as well as the reference

benchmark values. Areas 2 and 3 exceed the zinc benchmark, and Area 1 is right at the zinc benchmark.

Table 1: Drainage Areas and Geometric Mean Water Quality (2017-2019)

	Total Area (sf)	Impervious Area (sf)	TSS (mg/L)	Zinc (mg/L)	Copper (mg/L)
Benchmark			100	0.12	0.020
Area 1	192,400	192,400	84.9	0.12	0.016
Area 2	40,700	40,700	15.2	**0.33**	0.012
Area 3	95,400	95,400	50.4	**0.18**	0.012

Design Storm

The Department of Environmental Quality (DEQ) requires that stormwater treatment systems be designed for the 2-year 24-hour design storm per NOAA Atlas Volume 2 multiplied by a regional storm factor, with 0.7 inches as the minimum rainfall. The 2-year 24-hour design storm for Boardman is 1-inch of rainfall, and the Region 6 storm factor is 50%; therefore, the minimum design storm of 0.7 inches of rain was used for the runoff and peak flow calculations. To determine peak flow a storm distribution was applied to the design storm. The Oregon Engineering Handbook Hydrology Guide indicates that the Type 1 Soil Conservation Service storm distribution should be used for Boardman. Based on this, Harms Engineering calculated a total runoff volume and peak flow for the three drainage areas. The runoff from the 25-year 24-hour storm was also calculated. Refer to summary in Table 2 and calculations in Appendix 1. The drainage areas are shown on Exhibit 1.

Table 2: Stormwater Runoff and Peak Flow

	Area (sf)	2yr 24hr Total Runoff (cf)	2yr 24hr Peak Flow (cfs)	25yr 24hr Total Runoff (cf)	25yr 24hr Peak Flow (cfs)
Area 1	192,400	8,070	1.15	25,274	3.55
Area 2	40,700	1,707	0.31	5,346	0.95
Area 3	95,400	4,002	0.61	12,532	1.86
Areas 1 – 3	328,500	13,779	1.97	43,152	6.06

Mass Load

The concentration of contaminants in runoff can be converted to a mass load for a given volume of runoff. Table 3 shows the benchmark and geometric mean mass loads

associated with the 2-year 24-hour design storm for the three drainage areas. Supporting calculations are provided in Appendix 1.

Table 3: Mass Loads for Drainage Areas

	TSS (lb)	Zinc (lb)	Copper (lb)
Area 1 – Benchmark	50.3	0.06	0.010
Area 1 – Geometric Mean	42.7	0.06	0.008
Area 2 – Benchmark	10.6	0.01	0.002
Area 2 – Geometric Mean	1.6	**0.04**	0.000
Area 3 – Benchmark	25.0	0.03	0.005
Area 3 – Geometric Mean	12.6	**0.04**	0.003
Areas 1-3 – Benchmark Total	85.9	**0.10**	0.017
Areas 1-3 – Geometric Mean Total	56.9	**0.14**	0.011

Alternatives

The methods of addressing contaminant levels above the benchmark levels are categorized generally as: source control, treatment, and low impact development (LID). A source control eliminates or reduces the source of the contaminant and can include physical and/or operational changes. Treatment of stormwater can include targeted treatment of runoff from problem areas or treatment of runoff from the entire area. LID features, such as bioswales, allow runoff to infiltrate into the ground rather than discharge to surface waters. The following sections describe various source, treatment, and LID alternatives for this site.

Source Control

Since the Tier II Corrective Action Report in 2014, Lamb Weston has undertaken concerted efforts to address the sources of contaminants. Efforts have included re-coating galvanized roofing, cleaning and sweeping the site, installing curbing and berms to prevent soil from entering the system, and removing galvanized equipment from yards. The efforts have not been effective at reducing the levels of contaminants to below the benchmark limits. While sweeping and other housekeeping efforts should continue, no additional source control options are considered at this time.

Treatment

Treatment can be used to remove the TSS, copper, and zinc from the runoff of the entire drainage area or from particular problem areas, such as a roof or at a catch basin. Cleanway catch basin treatment inserts were installed in the catch basins within the subject drainage areas and for the downspout for drainage area 2. The collective efforts

of source control and catch basin treatment units have reduced pollutant concentrations but not to levels that consistently meet the benchmark values.

StormwaterRx has packaged treatment units that can treat up to 400 gallons per minute (gpm), each unit costs about $235,000-$300,000 plus installation. If the units are installed outside, a heater package costing $35,000-$45,000 would be needed (alternately a building or shelter could be constructed). The 2-Year 24-Hour peak flows from Areas 1-3 are 518 gpm, 140 gpm, and 272 gpm respectively. Treating the combined runoff from all three drainage areas would require 3 units in parallel. Additionally, a pump station for the peak flow rate would be required to pump the runoff to the above-ground treatment units. A packaged pump station would cost about $140,000 to $180,000 plus installation. Therefore, just the equipment necessary to treat all of the runoff would be $950,000 to $1,215,000. Costs for the equipment installation, piping connections, contractor mobilization, permits, design, etc. would add another $250,000 to $319,000. The media itself would need to be replaced every three years at a cost of about $150,000-$190,000 with a top sacrificial layer getting replaced annually at a cost of approximately $20,000-$25,000.

Low Impact Development

A new infiltration and evaporation basin/bioswale (approximately 512,000 gallons) in the in either the northwest corner of the site or in the southwest corner of the site at an existing bioswale could store and infiltrate the runoff from all three drainage areas. By infiltrating/evaporating all of the runoff, the mass of pollutants discharged to the surface water pond would be 0.0 pounds.

Refer to Table 4 for a summary of soils information for two potential locations for the infiltration basin/bioswale provided by a preliminary geotechnical report. The final geotechnical report will be included with the design submittal.

Table 4: Geotechnical Information

	Northwest Corner (Boneyard)	**Southwest Corner (existing bioswale)**
Material	Loamy Sand	Sand
Design Infiltration Rate	0.98 in/hr	1.23 in/hr
Cation Exchange Capacity	8.7 meq/100grams	7.3 meq/100 grams
Depth to Groundwater	6 ft	7 ft

In order to contain the runoff from the 25-year 24-hour storm and have 1 ft of freeboard, the bioswale would need to be 200 ft long x 100 ft wide x 3 ft deep with a total volume of 68,424 cubic feet (cf). The total infiltration rate on the bottom of the bioswale would be 0.4537 cubic feet per second (cfs) or 293,000 gallons per day (gpd). The bioswale would infiltrate the runoff in about 26 hours.

A storm water pump station and force main would be required to transport the stormwater runoff to the infiltration basin/bioswale. The pump station would need to handle the peak design flow for treatment, which is approximately 2.0 cfs (900 gpm) for all three drainage areas. A duplex pump station with wet well, valve box, controls, and alarms would cost approximately $140,000-$180,000 plus installation, estimated at $30,000-$38,000. Routing the three separate outfall pipes to the pump station and installing approximately 900 ft of 8" diameter force main would cost approximately $28,000-$36,000. Constructing the bioswale itself would cost about $57,000-$74,000. Adding design, contractor mobilization, permits, and contingency would put the total cost for a drainage bioswale and pump station at about $447,000-$581,000.

The benefit to installing an infiltration basin/bioswale would be to eliminate the outfalls to the surface water pond and Lamb Weston would be able to apply for a Tier II waiver. This would eliminate the stormwater runoff testing. However, Lamb Weston would need to maintain a pump station that would only be used during rain events, and maintain the infiltration basin/bioswale.

Recommendation

Lamb Weston has already tried source control and some treatment to address the water quality issues associated with drainage areas 1, 2, and 3. Those measures have not been effective at keeping pollutant levels below the benchmarks. Therefore, a new bioswale is recommended for the site.

Implementation Schedule

The following is a schedule to implement the new bioswale:

- Fall 2019 — Topographic survey and utility locates (complete)
- Winter 2019/2020 — Geotechnical investigation (ongoing)
- Winter 2019/2020 — Complete design and prepare construction documents (ongoing)
- Spring/Summer 2020 — Install new stormwater pump station, forcemain, and infiltration basin/bioswale

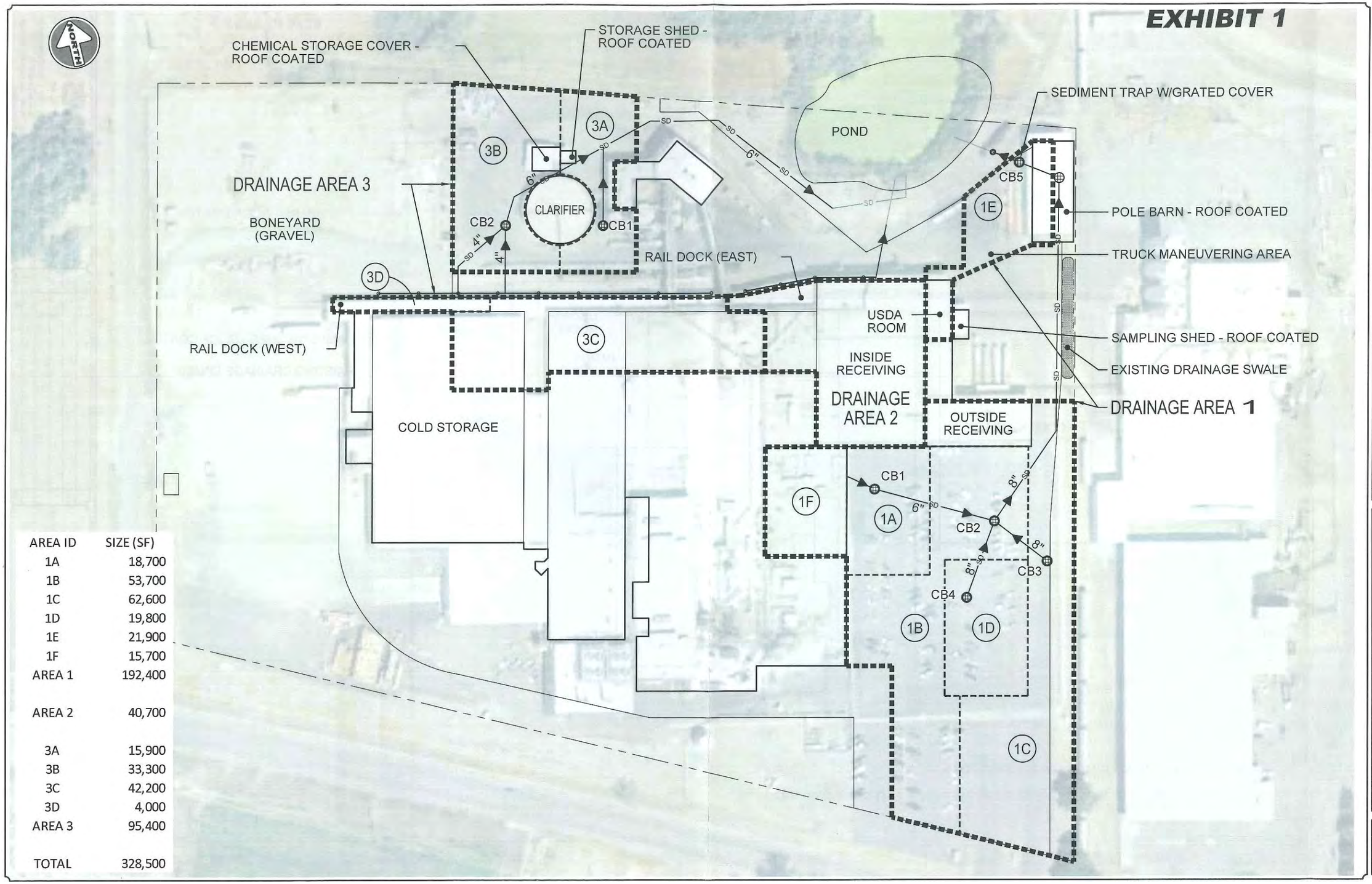
Operational and Maintenance Schedule

Regular inspection and maintenance of key system components is necessary to ensure the system integrity for the system design life, refer to Table 5.

Table 5: Maintenance Schedule

Component/Task	Frequency
Pump Station	
Visually observe pumps running	During storm events
Check wet well for solids and trash accumulation, remove as necessary	After each storm event
Pump out wet well to remove accumulated solids	Annually
Verify pump controls and alarms	Annually
Manually operate controls and observe pumps	Annually
Check for moisture and corrosion	Annually
Test alarms	Annually
Infiltration Basin/Bioswale	
Trim vegetation	Annually and as needed (remove and dispose of clippings)
Visually observe outfall for signs of erosion and sediment accumulation, maintain as necessary	Quarterly and after each storm event
Visually observe water level and verify water has drained within 72 hours of a storm event	During and after each storm event
Visually observe for accumulation of trash and debris, clean as necessary	Weekly
Regrade	As needed

EXHIBIT 1



AREA ID	SIZE (SF)
1A	18,700
1B	53,700
1C	62,600
1D	19,800
1E	21,900
1F	15,700
AREA 1	192,400
AREA 2	40,700
3A	15,900
3B	33,300
3C	42,200
3D	4,000
AREA 3	95,400
TOTAL	328,500

HARMS ENGINEERING, INC.
1632 W Sylvester Street, Pasco WA 99301 | 509.547.2679 | HarmsEngineering.com

Designed By: C BATAYOLA
Drawn By: B ANDERSON
File Name: 19-167 Storm Areas 03
Plotted: December 20, 2019 - 11:01:45 AM
File Path: P:\2019\19-167.1 Lamb Weston Boardman Storm Drainage\Dwgs

Description | Date | By | Rev

EXHIBIT 1
SITE MAP - DRAINAGE AREAS
600 NE COLUMBIA AVE, BOARDMAN, OR

Client/Project Information
LAMB WESTON - BOARDMAN WEST
600 NE COLUMBIA AVE, BOARDMAN, OR

Drawing Name

Date B
12-20-2019
Project Number
19-167.1
Sheet Number
1

APPENDIX 1 - CALCULATIONS

Lamb Weston Boardman West
Tier II Corrective Action

DEQ File #103436

STORM DRAINAGE CALCULATIONS
Lamb Weston Boardman West Plant
600 NE Columbia Ave, Boardman

Project: Lamb Weston Boardman West plant - Tier II Stormwater
Objective: Determine peak flow and total volume of runoff to size bioswale
Method: TR-55 and Santa Barbara Urban Hydrograph Method with Type 1 Storm event
Design Storm: 2 Year 24 hour storm with reduction factor - Water Quality Storm
25 Year 24 hour storm - Bioswale Sizing

Rainfall for Design Storms:

Rainfall Depth, P2yr24hr =	1	in	NOAA ATLAS 2 Volume X - 2yr 24 hr storm
Water Facility Zone:	Region 6		
Design Storm Factor =	50%		
Design Storm =	Rainfall Depth * Design Storm Factor; Minimum is 0.7 in		
Design Storm =	0.50	in	
Design Storm =	**0.70**	**in**	Minimum storm for design of water quality
Rainfall Depth, P25yr24hr =	**1.80**	**in**	NOAA ATLAS 2 Volume X - 25yr 24 hr storm

Summary of Soils Information

Soils information is from the Custom Soil Resource Report for Morrow County Area, Washington, provided by the United

Soil Types = Quincy loamy fine sand, loamy substratum, 0 to 10% slopes
Hydrologic Soil Group = A

Geotechnical investigation by White Shield found the following:

	NW Corner	SW Corner
Material =	Loamy Sand	Sand
Design Infiltration Rate =	0.98 in/hr	1.23 in/hr
Cation Exchange Capacity =	8.7 meq/100 g	7.3 meq/100 g
Depth to Groundwater =	6 ft	7 ft

Use the soils infiltration rate in the NW corner for preliminary design purposes.

Runoff:

Total Runoff Depth (D) = (P - 0.2 * S)^2 / (P + 0.8 * S) SCS curve number method.
D = 0 if P<0.2*S
S = (1000 / CN) - 10

	Impervious	Gravel	Landscape	
CN imp =	98	76	39	Curve number based on soil type and cover
S imp =	0.2041	3.1579	15.641	
D imp 3hr =	0.2500	0.0000	0.0000	Depth of runoff during 2yr 3 hr storm
D imp 2yr24hr =	0.5033	0.0015	0.0000	Depth of runoff during 2 yr 24 hr storm (0.7 in storm)
D imp 25yr24hr =	1.5763	0.3156	0.0000	Depth of runoff during 25 yr 24 hr storm (1.8 in storm)

Refer to Exhibit 1 for drainage areas. Roofs that drain to the pavement and then to a catch basin are not separately labeled.

Area	Description	Area (sf)	Area (acre)	2Yr24Hr Runoff (cf)	25Yr24Hr Runoff (cf)
Outfall 1	East Site - Drainage Area 1	192,400	4.42	8,070	25,274
Outfall 2	North center roof runoff - Drainage Area 2	40,700	0.93	1,707	5,346
Outfall 3	Northwest site - Drainage Area 3	95,400	2.19	4,002	12,532
Combined	Drainage Areas 1-3	328,500	7.54	13,779	43,152

Lamb Weston Boardman West
Tier II Corrective Action

DEQ File #103436

STORM DRAINAGE CALCULATIONS
Lamb Weston Boardman West Plant
600 NE Columbia Ave, Boardman

Time of Concentration

Overland Flow
Use Manning's kinematic solution to compute travel time for overland sheet flow for each subarea, maximum 300' length.

T_t = 60*.007 * (n*L)^0.8 / ((P^0.5) * S^0.4) TR-55 Eq 3-3
n = Mannings roughness Coefficient TR-55 Table 3-1
L = Length of flow path (ft)

P = 2yr 24hr rainfall (in)
S = slope of hyrdaulic grade line (land slope, ft/ft)

Area	High Pt	Low Pt	L	S	n	T_t (min)
1A	279	277	130	0.0154	0.014	3.6
1B	283	279	300	0.0133	0.014	7.4
1C	283	279	230	0.0174	0.014	5.4
1D	280	279	140	0.0071	0.014	5.2
1E	280	276	260	0.0154	0.014	6.3
1F			20	0.0500	0.014	0.5
1G			28	0.0500	0.014	0.7
2			90	0.0500	0.014	1.7
3A	278	277	175	0.0057	0.014	6.8
3C			90	0.0500	0.014	1.7
3D			30	0.0500	0.014	0.7

Shallow Concentrated Flow
Use figure 3-1 in TR-55 to estimate velocity for areas that have shallow concentrated flow

T_t = L / (V *60)

Area	High Pt	Low Pt	L	S	V	T_t (min)
1B	279	278	130	0.0077	1.8	1.2
1C	279	278	220	0.0045	1.45	2.5

Channel Flow
Pipe slopes are unknown. For calculation assume the pipes flow at an average velocity of 2.5 fps.

T_t = L / (V *60) Velocity = 2.5 fps

Pipe	L	T_t (min)	Pipe	L	T_t (min)
P110	165	1.1	P310	110	0.7
P120	110	0.7	P320	115	0.8
P130	85	0.6	P330	275	1.8
P140	485	3.2	P340	90	0.6
P150	55	0.4	P350	175	1.2
P160	75	0.5	P360	105	0.7
P210	170	1.1	P370	440	2.9
P220	180	1.2			
P230	120	0.8			

Lamb Weston Boardman West
Tier II Corrective Action

DEQ File #103436

STORM DRAINAGE CALCULATIONS
Lamb Weston Boardman West Plant
600 NE Columbia Ave, Boardman

Total Travel Time = sum of travel time for flow path

Area	Overland sheet	Shallow Conc.	Pipe Flow	Pipe Flow	Pipe Flow	Total (min)	T_t (min)	T_t (hr)
1A	3.6	-	-	-	-	3.6	6.0	0.100
1B	7.4	1.2	-	-	-	8.6	8.6	0.144
1C	5.4	2.5	-	-	-	7.9	7.9	0.132
1D	5.2	-	-	-	-	5.2	6.0	0.100
1E	6.3	-	-	-	-	6.3	6.3	0.105
1F	0.5	-	-	-	-	0.5	6.0	0.100
1G	0.7	-	-	-	-	0.7	6.0	0.100
Outfall 1	7.4	1.2	3.2	0.4	0.5	12.7	**12.7**	0.212
Outfall 2	1.7	-	1.2	0.8	-	3.7	**6.0**	0.100
3A	6.8	-	-	-	-	6.8	6.8	0.113
3B	7.0	-	-	-	-	7.0	7.0	0.117
3C	1.7	-	1.8	-	-	3.5	6.0	0.100
3D	0.7	-	0.7	-	-	1.4	6.0	0.100
Outfall 3	7.0	-	1.2	2.9	-	11.1	**11.1**	0.185
Maximum Time of Concentration							**12.7**	min

Peak Flow

Per the *Oregon Engineering Handbook Hydrology Guide,* Appendix B, the Boardman area falls into the Type 1 NRSC storm

Area	2Yr24Hr Peak Flow (cfs)	2Yr24Hr Peak Flow (gpm)	25Yr24Hr Peak Flow (cfs)	25Yr24Hr Peak Flow (gpm)
Outfall #1	1.15	518	3.55	1,592
Outfall #2	0.31	140	0.95	425
Outfall #3	0.61	272	1.86	833
Combined	1.97	930	6.06	2,850

Mass Load

Determine mass load for each outfall.

Mass Load = Runoff (gallons) * concentration (mg/L or ppm) * 8.34 lb/gal / 1x10^6

Outfall #1

2 yr 24 hour storm runoff volume = 8,070 cf 60,366 gallons From above

	TSS	Zinc	Copper	
Benchmark Concentration =	100	0.12	0.02	mg/L
Benchmark Mass Load =	50.3	0.06	0.010	lb
Geometric Mean Concentration =	**84.9**	**0.12**	**0.016**	mg/L
Mass Load at Outfall =	**42.7**	**0.06**	**0.008**	lb

Lamb Weston Boardman West
Tier II Corrective Action

DEQ File #103436

STORM DRAINAGE CALCULATIONS
Lamb Weston Boardman West Plant
600 NE Columbia Ave, Boardman

Outfall #2

2 yr 24 hour storm runoff volume =	1,707	cf	12,770	gallons	From above

	TSS	Zinc	Copper	
Benchmark Concentration =	100	0.12	0.02	mg/L
Benchmark Mass Load =	10.6	0.01	0.002	lb
Geometric Mean Concentration =	15.2	**0.33**	0.012	mg/L
Mass Load at Outfall =	1.6	**0.04**	0.000	lb

Outfall #3

2 yr 24 hour storm runoff volume =	4,002	cf	29,932	gallons	From above

	TSS	Zinc	Copper	
Benchmark Concentration =	100	0.12	0.02	mg/L
Benchmark Mass Load =	25.0	0.03	0.005	lb
Geometric Mean Concentration =	50.4	**0.18**	0.012	mg/L
Mass Load at Outfall =	12.6	**0.04**	0.003	lb

Stormwater Bioswale

Determine size and depth necessary to store and infiltrate the runoff for the 25yr 24hr storm from the combined Areas #1, #2, & #3. Assume no infiltration for sizing to account for frozen ground condition.

	Areas 1-3			
Type =	swale		Design Infiltration Rate =	0.98 in/hr
Bottom Length =	200	ft		
Bottom Width =	100	ft		
Bottom Area, A_{bot} =	20,000	sf		
Side Slope =	3	H:1V		
Side Slope =	3	H:1V		
Depth =	3	ft		
Top Length =	218	ft		
Top Width =	118	ft		
Top Area, A_{top} =	25,724	sf		
Middle Area, A_{mid} =	22,781	sf		
Cross-Sectional Area =	327.0	sf		
Total Storage Volume[1] =	68,424	cf	511,812	gallons
Total Infiltration Rate[2] =	0.4537	cfs	293,216	gpd
Below Ground Infiltration Rate =	0.0000	cfs		

[1] - Volume formula for swales and trenches: $V = h / 6 * (A_{bot} + 4 * A_{mid} + A_{top})$, where A_{mid} is the surface area of the trench/swale at mid-depth.
[2] - Total infiltration rate includes infiltration above and below ground.

Total Required Storage Volume =	43,152 cf	(From above, based on 25-year 24-hr runoff)
Provided Storage Volume =	68,424 cf	
Volume Provided / Volume Required =	1.59	
Time to Infiltrate =	26 hr	
Maximum Depth of Water =	1.98 ft	
Freeboard =	1.02 ft	

The proposed swale would be sufficient to store and infiltration the runoff from the design storms for the combined Areas #1, #2, and #3 with 1 ft of freeboard.

APPENDIX 2 – WATER QUALITY RESULTS

Lamb Weston Boardman West Plant

Stormwater Outfalls - Water Quality Results

Outfall #1

Date	pH	TSS (mg/L)	Oil,grease (mg/L)	Copper (mg/L)	Lead (mg/L)	Zinc (mg/L)	Notes
Benchmark	5.5 - 9.0	100	10	0.02	0.04	0.12	
Geometric Mean	**6.8**	**84.9**	**2.40**	**0.016**	**0.0054**	**0.12**	**2017-2019**
9/20/2019	7.7	86	2.39	0.0146	0.0027	0.17	
8/21/2019	7.3	16	2.46	0.0058	ND	0.0355	
6/26/2019							No runoff - filter may have been plugged
5/21/2019	6.67	21	ND	0.0074	0.0011	0.035	
5/17/2019	7.2	35	ND	0.0149	0.0019	0.071	
4/8/2019	7.4	124	4.75	0.0138	0.0036	0.0942	
12/26/2018	7.5	15.2	1.68	0.0034	ND	0.0314	
12/18/2018	6	220	1.69	0.022	0.0064	0.181	
1/11/2018	6.99	216	ND	0.0238	0.0072	0.164	
12/29/2017	5.99	280	ND	0.0338	0.0081	0.29	
9/20/2017	5.53	119	ND	0.0559	0.0236	0.549	
2/21/2017	6.59	544	ND	0.0391	0.0203	0.342	

Outfall #2

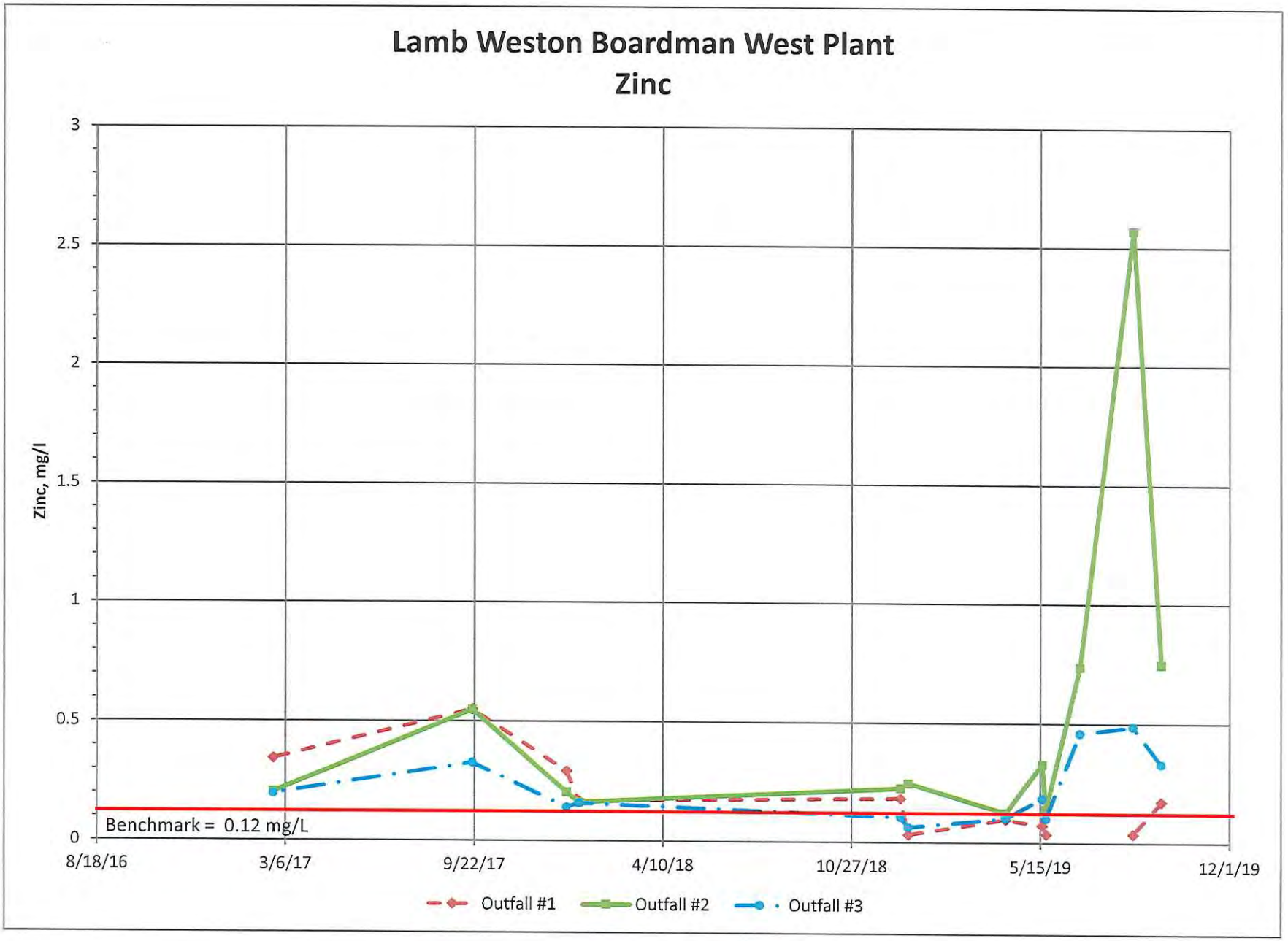
Date	pH	TSS (mg/L)	Oil,grease (mg/L)	Copper (mg/L)	Lead (mg/L)	Zinc (mg/L)	Notes
Benchmark	5.5 - 9.0	100	10	0.02	0.04	0.12	
Geometric Mean	**6.8**	**15.2**	**2.46**	**0.012**	**0.0014**	**0.33**	**2017-2019**
9/20/2019	7.1	16	3.65	0.0316	0.002	0.747	
8/21/2019	7.1	42	2.01	0.0375	0.0048	2.57	Soil accumulation, large roof cleaning flush
6/26/2019	7.2	29	ND	0.0185	0.0016	0.737	Flash storm, high intensity, very localized
5/21/2019	6.7	20	2.04	0.0056	0.0006	0.14	
5/17/2019	7	17	ND	0.0131	0.0008	0.328	
4/8/2019	7.4	5.2	ND	0.0079	ND	0.123	
12/26/2018	7.6	4.8	ND	0.0089	ND	0.245	
12/18/2018	6	6	ND	0.0061	ND	0.224	
1/11/2018	6.54	16	ND	0.0074	ND	0.159	
12/29/2017	6.71	9	ND	0.0071	ND	0.202	
9/20/2017	6.61	22	ND	0.0221	0.001	0.548	
2/21/2017	6.2	48	ND	0.0087	0.0017	0.202	

Lamb Weston Boardman West Plant

Stormwater Outfalls - Water Quality Results

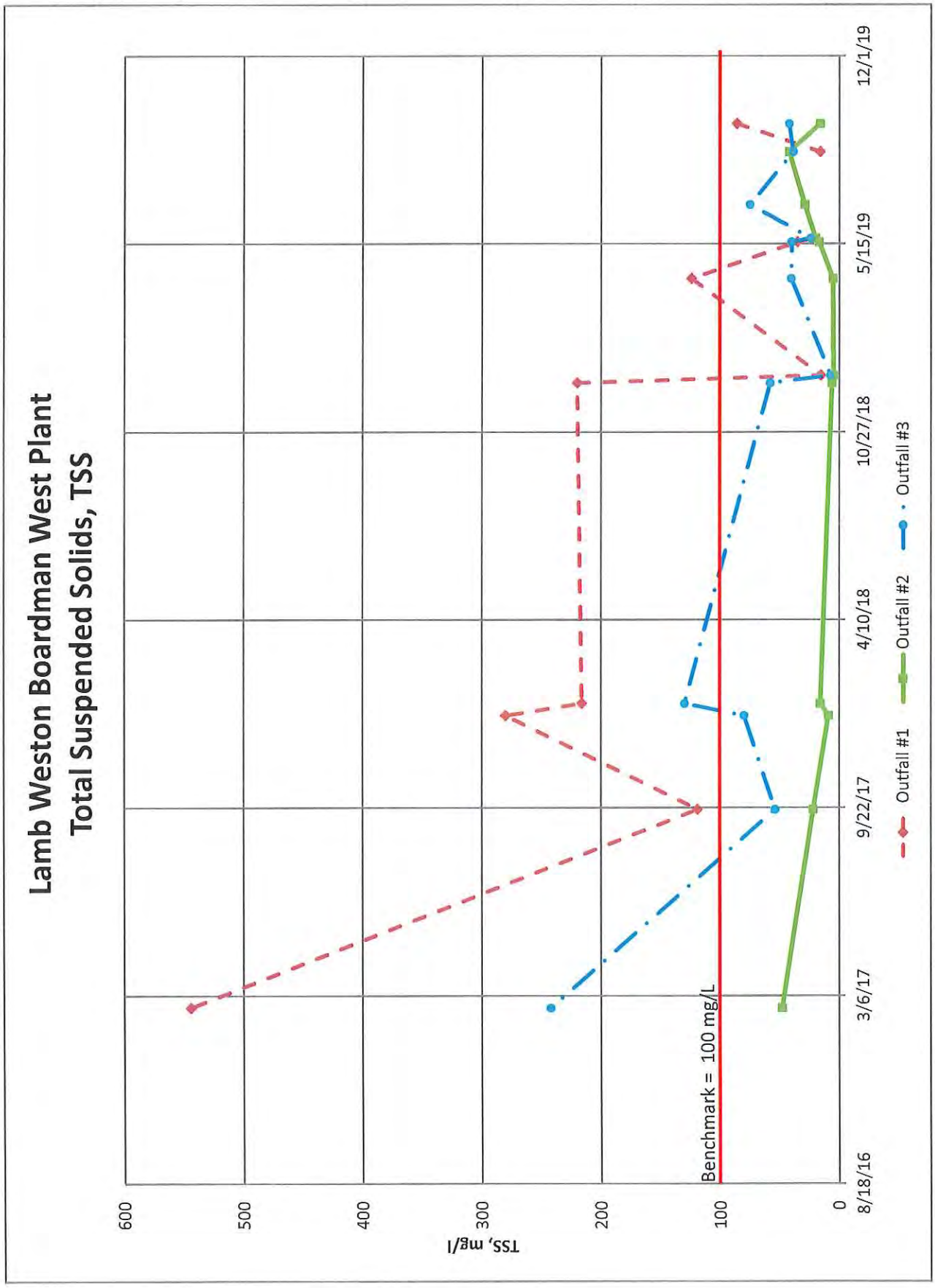
Outfall #3

Date	pH	TSS (mg/L)	Oil,grease (mg/L)	Copper (mg/L)	Lead (mg/L)	Zinc (mg/L)	Notes
Benchmark	5.5 - 9.0	100	10	0.02	0.04	0.12	
Geometric Mean	**6.8**	**50.4**	**2.28**	**0.012**	**0.0021**	**0.18**	**2017-2019**
9/20/2019	6.6	42	2.96	0.0156	0.0012	0.33	
8/21/2019	7	38.7	1.47	0.0356	0.0013	0.487	More trucks passing trhough area to exit via west gate.
6/26/2019	7.7	75	ND	0.0178	0.0039	0.459	Flash storm, high intensity, very localized
5/21/2019	6.35	24	ND	0.0055	0.0007	0.1	
5/17/2019	7.1	40	ND	0.0111	0.0018	0.184	
4/8/2019	7.4	40.4	3.25	0.0074	0.0011	0.1	
12/26/2018	7.2	7.2	1.92	0.0041	ND	0.0623	
12/18/2018	6.5	58	ND	0.0085	0.0017	0.105	
1/11/2018	6.67	130	-	0.0157	0.0035	0.157	
12/29/2017	6.56	80	ND	0.0142	0.0027	0.14	
9/20/2017	6.26	54	ND	0.0209	0.0038	0.326	
2/21/2017	6.32	242	ND	0.0177	0.0059	0.194	


Lamb Weston Boardman West Plant
Zinc
Zinc, mg/l
3
2.5
2
1.5
1
0.5
0
Benchmark = 0.12 mg/L
8/18/16
3/6/17
9/22/17
4/10/18
10/27/18
5/15/19
12/1/19
Outfall #1
Outfall #2
Outfall #3

DEQ File #103436

Tier II Corrective Action



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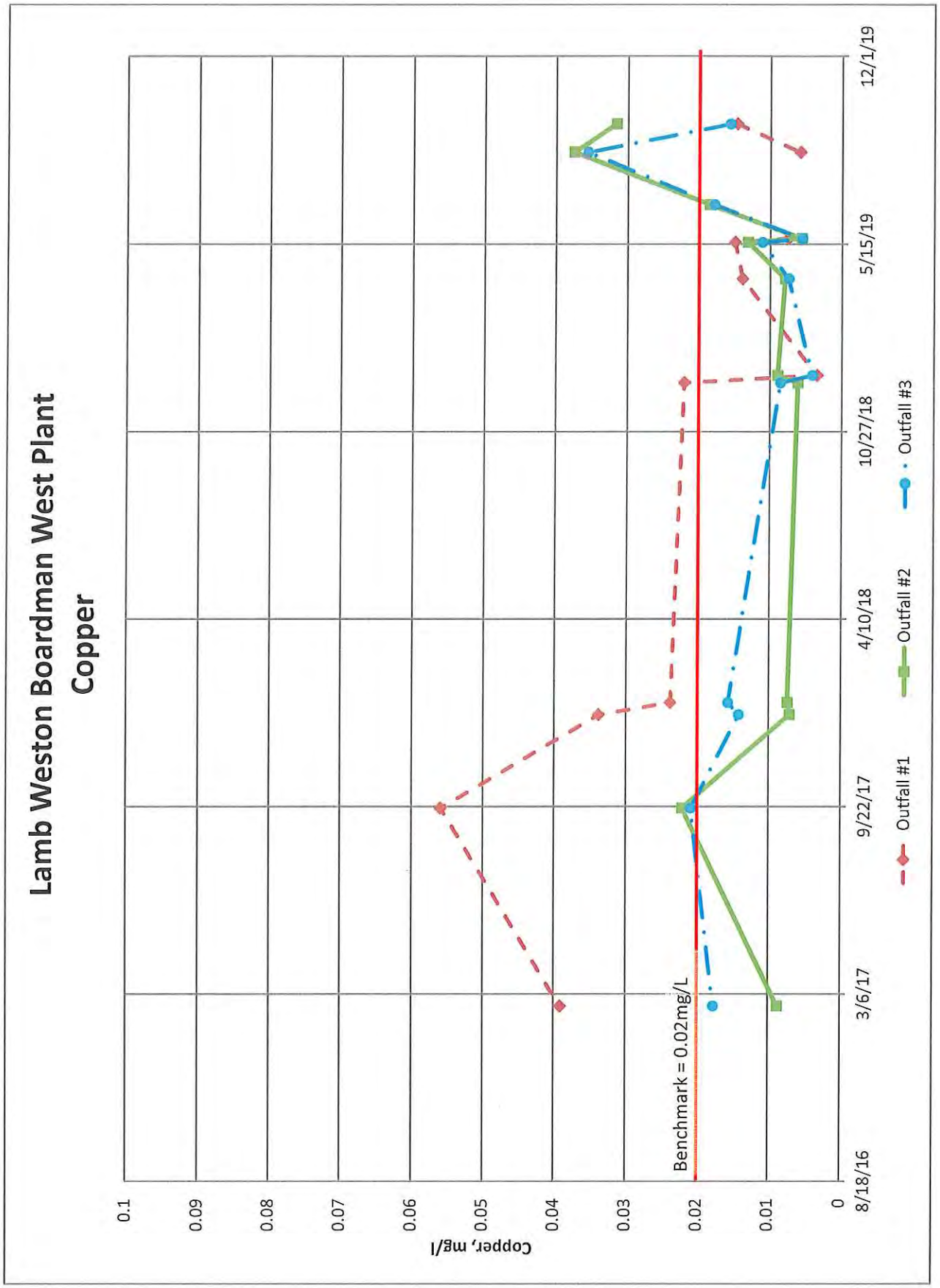


State of Oregon
DEQ Department of Environmental Quality

DEQ Industrial Stormwater Permits

Tier II Revised Stormwater Pollution Control Plan Checklist

Complete this form and submit with the revised SWPCP and engineered plan or waiver request. Fill in the requested information in the highlighted cells and the appropriate page number(s) indicating the location of information in the revised SWPCP.

Facility Name: Lamb Weston Boardman West Plant **File No.:** 103436

Permit Schedule	Requirement					Page #	Comments (for official use only)
A.11.f	Date Revised Plan submitted:					Cover Letter	
A.11	Discharge Point	Parameter	Geometric Mean Exceedance	Units	Percent Reduction in Concentration	Percent of Design Storm Infiltrated or Injected	
	2	Zinc	0.33	mg/L	100%	100%	
	3	Zinc	0.18	mg/L	100%	100%	
A.11.j	**Proposed Tier II Corrective Action Response**					Pg 6	
	0.70	Design storm in inches				Pg 3	
A.11.j.i	Rationale for the selection of the measures					Pg 5	
A.11.j.i	Schedule for implementing these measures					Pg 5	
A.11.j.ii	Stamped by PE	Yes				Cover	
Cost of installation						Pg 5	
Treatment system schematic and operational plan						N/A	
Operation and maintenance schedule for treatment measures and/or volume reduction measures proposed						Pg 6	
For DEQ or Agent use only							
A.11	Revised SWPCP complete and acceptable						

Notes: _____

Last updated: 11/18/2019
By: Krista Ratliff

Information required for Tier II Mass Reduction Waiver

Tier II Mass Reduction Waiver Basin Table

If applying for a Tier II waiver based on projected volume reduction, please provide the information below *for each drainage basin on your site*. If no infiltration is proposed for a particular drainage basin, simply fill out the first four (bolded) entries in the Tier II Waiver Basin Table. Make additional copies if your site has more than three drainage basins. In addition, fill out the Tier II Waiver Summary Table.

	Basin name: 1		Basin name: 2		Basin name: 3	
	Value	Page number	Value	Page number	Value	Page number
Area of drainage basin (ft2)	192,400	3	40,700	2	95,400	2
Impervious area (ft2)	192,400	3	40,700	2	95,400	2
Runoff coefficients	CN = 98	Calcs	CN=98	Calcs	CN = 98	Calcs
Mass (with units) of pollutant discharged based on geometric mean (no infiltration)	Zn= 0.06lb	4	Zn= 0.04lb	4	Zn= 0.04lb	4
Infiltration rate (gal/day)	293,000	5	293,000	5	293,000	5
Pond capacity, if applicable (gal)	511,812	5	511,812	5	511,812	5
Mass (with units) of pollutant discharged based on geometric mean (with assumed infiltration)	Zn= 0.00lb	5	Zn= 0.00lb	5	Zn= 0.00lb	5
Mass (with units) of pollutant discharged assuming concentration equal to benchmark (no infiltration)	Zn=0.06lb	4	Zn=0.01lb	4	Zn=0.03lb	4
Approximate depth to groundwater	6 ft	5	6 ft	5	6 ft	5

Tier II Waiver Summary Table (Combine entries from all basins)

	Value	Page number
Area of site (ft2)	328,000	3
Total impervious area (ft2)	328,000	3
Total mass (with units) of pollutant based on geometric mean (no infiltration)	0.14lb	4
Total mass (with units) of pollutant based on geometric mean (with assumed infiltration)	0.0	5
Total mass (with units) of pollutant assuming concentration equal to benchmark (no infiltration)	0.10lb	4

Tier II Revised Stormwater Pollution Control Plan Checklist Instructions

Industrial Stormwater Discharge 1200-Z Permits

Tier II parameters

Only exceedances of the geometric mean from statewide benchmarks are subject to Tier II corrective action. Please see the tables below for a list of the statewide parameters and associated benchmarks.

Table 4 from the permit: Statewide Benchmarks

Parameter	Units	Columbia River	Columbia Slough	Portland Harbor	Regional
Total Copper	mg/L	0.020	0.020	0.020	0.020
Total Lead	mg/L	0.040	0.060	0.040	0.015
Total Zinc	mg/L	0.12	0.24	0.12	0.12
pH	SU	5.5 – 9.0	5.5 – 8.5	5.5 – 9.0	5.5 – 9.0
TSS	mg/L	100	30	30	100
Total Oil & Grease	mg/L	10	10	10	10
E. coli	counts/100 ml	406*	406	406*	406*
BOD5	mg/L	N/A	33	N/A	N/A
Total Phosphorus	mg/L	N/A	0.16	N/A	N/A

*The benchmark for E. coli applies only to active landfills and sewage treatment plants.

Discharge point, parameter and corresponding geometric mean exceedance

- Please indicate the discharge point, as identified on the Site Plan in your Stormwater Pollution Control Plan and also on your Discharge Monitoring Report.
- Please indicate the parameter, units and geometric mean associated with each discharge point exceedance.
- Please note, if you are not sampling all of your stormwater discharge points and your pollution control plan has identified substantially similar effluent based on a site analysis and/or monitoring, then you must install the same treatment on those representative discharge points. The substantially similar discharge points must be a listed in your revised Plan and sampling must resume.

Projected Reduction of Pollutant Concentration Treated

Please provide the projected percent reduction in concentration for the proposed treatment measure associated with the corresponding geometric mean exceedance. Regardless if a facility is proposing one treatment system to address more than one geometric mean exceedance or multiple treatment measures with the goal of reaching a single benchmark, please list the percent reduction for each parameter. The projected percent reduction should reduce the pollutant discharged to or below the benchmark.

Percent of Design Storm Volume Infiltrated

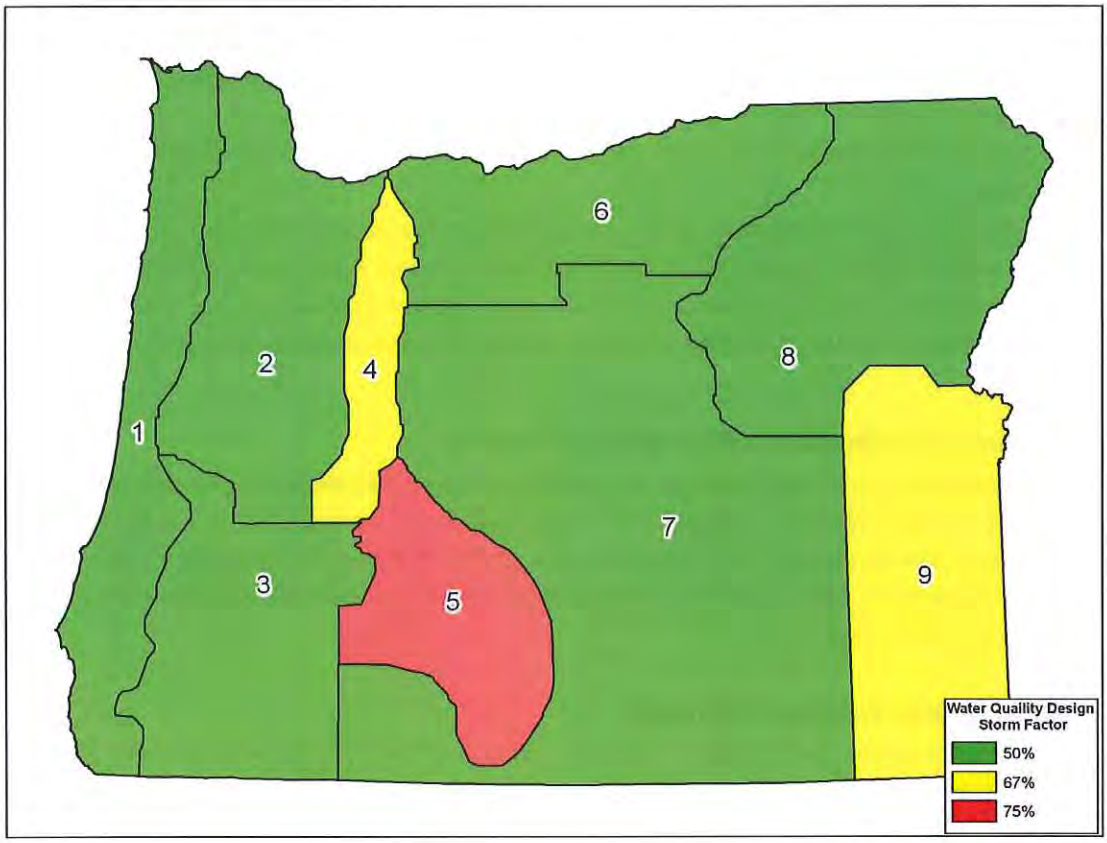
Please provide the calculated percent of the design storm that will be infiltrated for the drainage basin being addressed, if applicable. Facilities choosing to submit a Tier II Mass Reduction Waiver request need to evaluate their site and show how the remaining mass load of pollutants discharged are at or below the mass equivalent of the statewide benchmarks. In addition, provide the information requested in the

Tier II Waiver table. This calculation may result in discharge above the benchmark values. The revised Stormwater Pollution Control Plan must provide data and analysis to support this mass load analysis determination, including the detailed description of the measure(s).

Design storm criteria

Precipitation data

1. Determine the 2-year, 24-hour rainfall depth for the facility using latitude and longitude; this information can be found here: http://www.nws.noaa.gov/ohd/hdsc/noaaatlas2.htm
2. Determine the Water Quality Design Storm amount by locating your facility's zone on the Oregon Department of Transportation's Water Quality Design Storm Factor map, attached below. Multiply the 2-year, 24-hour storm rainfall depth from Step #1 by the appropriate factor (50%, 67%, or 75%). The majority of the state will use 50% of the 2-year, 24-hour rainfall depth. For example, if the 2-year, 24-hour rainfall depth according to NOAA is 3.0 inches, and the facility is in Zone 6 on the map below, 3.0 x 50% = 1.5 inches. The Design Storm amount is 1.5 inches.
3. Design to a minimum storm size of 0.7 inches in 24- hours in order to capture the first flush of industrial pollutants, even if the calculation from Step #2 is fewer than 0.7 inches.
4. Compare the calculated Water Quality Design Storm to the facility's local jurisdiction's water quality design storm and use whichever is more stringent.



More information is available: https://www.oregon.gov/ODOT/GeoEnvironmental/Pages/Hydraulics-Manual.aspx

Please simply indicate the page numbers of the stamped plan or waiver for the following items:

Rationale for the selection of the measures

The permits require the revised Stormwater Pollution Control Plan include data and analysis to support the selection of each treatment best management practice or infiltration measure.

Schedule for implementing measure

Please include the expected implementation schedule for the proposed measures. The permit deadlines for the majority of registrants whose second monitoring year is: July 1, 2018, to June 30, 2019, include:

- Submittal of Tier II Corrective Action Response to DEQ or Agents by Dec. 31, 2019;
- Complete construction and implement treatment or mass reduction measures by June 30, 2021.

Cost of proposed Tier II response

As part of the rationale in the selection of the measures, the facility must consider cost. In order to meet the implementation schedule, it is highly recommended that all proprietary, capital investment, permitting, operational and maintenance, as well as energy costs are evaluated.

Treatment system schematic

Please include design and site location information for proposed treatment measures. Registrants are responsible for meeting water quality standards, including assurance that any chemical treatment is nontoxic to aquatic organisms. Any state approved program may be cited, such as Technologies Assessment Protocol - Ecology (TAPE).

Operation and Maintenance Schedule

All Tier II responses will require some maintenance overtime to optimize pollutant removal and manage break-through. Break-through happens when media is clogged or no longer treats the stormwater pollutants. Although each facility maintenance schedule will vary based on loading, this is an important component of the revised Stormwater Pollution Control Plan. Schedule A.7.c.iii outlines maintenance and repairs which must be recorded and available for review upon request of DEQ, Agents or a local municipality. The revised Plan must include a projected maintenance schedule. DEQ recognizes this may vary once installation is complete. Please ensure any Plan revisions related to operations of control measures are submitted to DEQ or Agents within 30 days calendar days after the change.

700 Lloyd Building at 700 NE Multnomah St., Suite #600, Portland, OR 97232 503-229-5263 or 1-800-452-4011		Eugene, OR 97401 541-687-7326 or 1-800-844-8467		800 SE Emigrant Avenue, Suite 330 Pendleton, OR 97801 541-278-4605 or 1-800-304-3513	
Clackamas	Benton	Lane	Baker	Hood River	Sherman
Clatsop	Coos	Lincoln	Crook	Jefferson	Umatilla
Columbia	Curry	Linn	Deschutes	Klamath	Union
Multnomah	Douglas	Marion	Gilliam	Lake	Wallowa
Tillamook	Jackson	Polk	Grant	Malheur	Wasco
Washington	Josephine	Yamhill	Harney	Marrow	Wheeler

Oregon
Kate Brown, Governor

Northwest Region Portland Office/Water Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232-4100
(503) 229-5263
FAX (503) 229-6957
TTY 711

August 17, 2020

Rob Burden, Jr
Lamb Weston, Inc
P.O. Box 379
Boardman, Oregon 97818

RE: Tier II Corrective Action Response - Accept
File Number: 103436 Facility: Boardman West Plant
Morrow County

Mr. Burden,

On December 30, 2019, the Department of Environmental Quality (DEQ) received the Tier II Report addendum to your Stormwater Pollution Control Plan (SWPCP) for the facility referenced above.

After careful review, DEQ has deemed this Tier II Report and revised SWPCP acceptable in accordance with Schedule A.11.j of the 1200-Z General Permit.

The implementation deadline for the proposed Tier II corrective action is June 30, 2021. You may submit revisions to this proposal for consideration, these will need to be reviewed by DEQ prior to implementation.

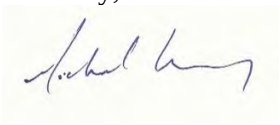
Upon completion of Tier II corrective action, you must:

1) Provide written confirmation to DEQ of Tier II corrective action installation no later than 30 calendar days from completion, Schedule A.11.h.

2) Evaluate whether the treatment measures were properly installed, maintained and implemented and whether modifications to these measures are necessary, if sampling results continue to exceed benchmark parameter(s) no later than 30 calendar days of obtaining the sample results, Schedule A.11.j.iii.(1).

Should you have any questions about the content of this letter, please feel free to contact me at 503-229-6843 or kennedy.michael@deq.state.or.us.

Sincerely,



Michael Kennedy
Water Quality Specialist
Oregon Department of Environmental Quality – Northwest Region