Technical Memorandum

To: Columbia County Commissioners Date: January 24, 2024

From: Brian Tino, PE, Maul Foster & Alongi, Inc. Project No.: M1724.01.004

Re: Response to Beaver Drainage Improvement Company Letter to the Columbia County Planning Commission and Columbia County Commission

Maul Foster & Alongi, Inc. (MFA) has prepared this memo on behalf of NEXT Renewable Fuels, Oregon, Inc. (NEXT Renewables) in response to the comments provided by the Beaver Drainage Improvement Company (BDIC) in its January 10, 2024 letter to the Columbia County (County) Commission. Applicable excerpts from the BDIC letter are copied in italics below, and MFA's response to each comment is included following the excerpt. Excerpts from the BDIC letter that are excluded from this memo are outside the scope of MFA's involvement in the project. Any comments not included below will be addressed separately.

BDIC Comment:

Effective drainage is vitally important to farms and farmers at Port Westward. Disrupted drainage could impact people in the area, not just the site itself. NEXT states that its culverts "will be sized during final design when more information about the wetland drainage conditions becomes available." At the same time, NEXT proposes culvert sizes that will be insufficient.

- *The 36" diameter culvert in waterway D is insufficient. 48" required.*
- *The 36" diameter culvert in waterway D is insufficient. 48" required.*
- *The BDIC reserves the right to require field fit modification to ensure all culverts are placed at correct depth to prevent flow restriction.*

MFA Response:

As stated in the Post-Construction Stormwater Management Plan[1], the conveyance structures were sized using an accepted hydrologic model and available survey data. Based on the results of this modeling, the 36" diameter culverts were determined to be adequate to convey the design storm, consistent with the relevant design guidance. If, during final design, additional information indicates that these conveyance structures are insufficient, larger culverts may be proposed. NEXT Renewables will coordinate with the BDIC as needed to ensure the culverts are sized appropriately to convey expected flows; however, it is not anticipated that additional field fit modifications by the BDIC will be necessary after final design. Any field fit recommendations provided by BDIC must be reviewed and approved by NEXT Renewables, the Engineer of Record (the licensed Professional

[1] MFA. 2023. Post-Construction Stormwater Management Plan. Prepared for NEXT Renewable Fuels, Oregon, Inc. Maul Foster & Alongi, Inc.: Portland, OR. January 30.

Engineer who stamped/sealed the construction drawings), and other relevant permitting agencies before they are implemented.

BDIC Comment:

NEXT fails to address impacts to the BDIC from interference with access to the drainage systems caused by the proposed modification, the rail yard, gravel road, fencing, and buffers. The BDIC operates a public drainage system, attached to private improvements. The drainage and irrigation provided are highly important to people in the BDIC. Specifically,

- *Sediment fencing along waterways is to be removed following construction to ensure access to waterways for maintenance.*
- *Proposed tree buffers along waterways are on ditch banks and will contribute debris, creating blockages. Additionally, they will restrict maintenance capabilities of the BDIC and thus will not be approved by the BDIC.*
- *Proposed fencing along waterways could impact BDIC ability to maintain waterways. Additional information needed for review.*

MFA Response:

- Following substantial completion of construction and termination of the Construction Stormwater Discharge Permit No. 1200-C, NEXT Renewables will remove the sediment fencing, ensuring access to the waterways for maintenance.
- Installation of the proposed tree buffer is a County requirement for development of the project site. Routine maintenance of the tree buffer will reduce the likelihood of debris and blockages in the adjacent waterways. The waterways will remain accessible for maintenance from the south. NEXT Renewables will coordinate with the BDIC to ensure ongoing access to the waterways from the north, as needed.
- No development is proposed south of the tree buffer along the boundaries of waterways G and F. These waterways will remain accessible for maintenance from the south. NEXT Renewables will coordinate with the BDIC to ensure ongoing access to the waterways from the north, as needed.

BDIC Comment:

NEXT will have additional impacts to the BDIC and people within the BDIC that are not adequately addressed in the application for the modification.

- *Spill containment plans for the facility and rail yard must be approved by the BDIC prior to any County approval of this proposal.*
- *No ditch or waterway alterations have been approved by the BDIC Board. Without specific agreements with the BDIC, NEXT cannot claim to have addressed impacts to the BDIC, its resources, or its operations. Further, the BDIC's activities are a recognized land use in the area that is vital to the overall function of the Port Westward area, including the industrial areas. NEXT fails to adequately address conflicts with BDIC's use of the area, its control of the land, and the public services it provides.*
- *The application provides no provisions for existing irrigation points on waterway G. interference with irrigation from this waterway and potential pollution of the water resources will impact and harm local farming.*
- *No engineering analysis of drainage and irrigation impacts has been presented to the BDIC Board for approval. The BDIC cannot agree to major alterations of BDIC infrastructure without a more in-depth description of the proposed impacts. NEXT cannot claim to have mitigated the impacts without an agreement with the BDIC. The application is premature.*

- *No engineering impact analysis or compatibility analysis has been performed for the current proposal. Prior submissions for county and BDIC approval are inadequate as location of rail yard has changed, thus impacts have changed. NEXT cannot rely on previous analyses to make conclusions about the impacts in the area. The previous proposals and the current amendment are not the same in scope or intensity with respect to impacts on farmers within the BDIC.*
- *Finding 97 Stormwater Report NEXT claims that they do not understand the groundwater impacts and states "groundwater elevations will be further studied". However, they have already submitted their application to the USACE so it is too late for further study. NEXT should be required to produce groundwater studies prior to County Commissioner review as it will have pertinent information to assist with decision making.*
- *Stormwater ponds will impact adjacent levels as they are unlined and will alter how fast and where water enters the BDIC system. The Preliminary Stormwater Report is inadequate for determining whether these facilities will impact water relied upon for irrigation and drainage systems because the groundwater level is not fully evaluated. Additionally, the application relies on a 2001 Geotechnical Study that is outdated and suggests problems with the Stormwater Plan. Page 1 of the Preliminary Stormwater Report states, "A geotechnical report was prepared in 2001 for a prior development opportunity at the site. The subsurface investigation located the groundwater between 2 feet to 4 feet below ground surface. Based on this finding, infiltration is not expected to be a feasible discharge option for the site runoff. The geotechnical report is provided in Appendix B of this SWMP." This highly outdated study would not recognize changes in soil elevation as the land settles, which have been noted by numerous agencies and individuals including the BDIC and the USACE. The establishment of large ponds could cause changes in water conditions vital to areas just to the North of the proposed Project. Finally, the 2001 study seems to suggest that infiltration of stormwater, which is proposed with the unlined ponds, will be ineffective. This could lead to significant negative impacts if water levels are altered as a result of the development for nearby agriculture. BDIC's experience strongly suggests that the water levels will be impacted. At best, the application is premature without more study of the site conditions and opportunity for BDIC to review final plans. establishing new, large bodies of water is a drastic change to the BDIC system and must be approved by the BDIC. The BDIC reserves the right to alter any designs and require changes to minimize impacts to the BDIC system. Changes will require BDIC signoff and possible 2/3 majority landowner vote to ratify.*
- *The BDIC has broad authority for maintenance of ditches/waterways within its boundaries. Restrictions in this authority, including ability to access for maintenance and alterations to maintenance activities must be approved by a 2/3 majority shareholder vote.*

MFA Response:

- Spill control will be provided by the berms around the tanks containing oil and containment around the equipment pads (see Figure 1). A comprehensive Spill Prevention, Control, and Countermeasure plan will be developed during final design of the facility.
- No alterations will be made to the existing ditches/waterways beyond the culverts through the project site that will convey waterway D to the proposed outfall to McClean Slough (see Discharge Point 002, Figure 2), the associated modifications to waterway G, and the filling of waterway E. Waterway D will be conveyed via culverts through the project site to minimize the impact to existing drainage conditions. The modifications proposed will minimize the impact to existing surface water conveyance patterns and provide conveyance capacity for expected flows consistent with all post-development water quantity and quality requirements. The remaining waterways are outside the limits of disturbance for the project.

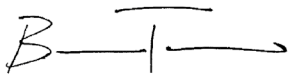
- Waterway G will remain accessible for irrigation and maintenance from the south. NEXT Renewables will coordinate with the BDIC to ensure ongoing access to this waterway, as needed. Runoff from the rail spurs, gravel laydown area, and access roads will be routed through the vegetated ponds and treated by sedimentation and biofiltration. This treatment will reduce the likelihood of potential pollution entering BDIC waterways.
- The impacts to the existing drainage conditions have been documented in the Post-Construction Stormwater Management Plan and all post-development water quantity and quality requirements will be met via the proposed stormwater best management practices.
- The current proposal does not change the overall impact categories in the west rail spur. The original design included a permanent laydown yard (permanent wetland impact) which was replaced by rail lines when the footprint of the rail spur was reduced. The rail lines are also designated as permanent wetland impact. Overall, the total permanent wetland impacts have been reduced in the current proposal.
- An initial groundwater evaluation was prepared by GSI Water Solutions, Inc. on January 25, 2022[2], documenting anticipated impacts to groundwater from the proposed site development. Additional groundwater evaluations may be completed prior to final design and revisions to the proposed stormwater management plan will be made as needed.
- The proposed stormwater ponds were designed to minimize the impacts to the existing drainage conditions and are not anticipated to significantly alter the available flow to the north of the project site. Culverts will be installed to convey flow from Waterways A, B, and C to minimize impacts to the existing drainage conditions from the construction of the Pipeline/Maintenance Road. The presence of high groundwater, as identified in the groundwater evaluation, is expected to limit the infiltration capacity of the site and the proposed stormwater facilities were designed with the assumption that infiltration is negligible. The proposed ponds were designed with a shallow depth to avoid the need for a liner and minimize groundwater intrusion into the ponds. If additional groundwater evaluations determine that groundwater intrusion will negatively impact the ponds or that the ponds will significantly alter the existing drainage conditions, including groundwater levels and surface water availability, modifications to the design may be made during the final design phase.
- The waterways (except for a portion of waterways D and G) are outside the limits of disturbance for the project and existing drainage pathways and conveyance capacity will be maintained. Waterway E will be filled. By segregating and treating stormwater from the NEXT site and discharging this water close to McLean Slough, conveyance demand on waterways G and F will be reduced relative to the existing condition. Waterways G and F will remain accessible for irrigation and maintenance from the south. The portion of Waterway D along the Pipeline/Maintenance Road will remain accessible from the east. NEXT Renewables will coordinate with the BDIC to ensure ongoing access to the waterways from the north via the proposed on-site gravel access road, as needed.

[2] GSI. 2022. Groundwater Protectiveness Measures at the NEXT Renewable Fuels Facility, Port Westward, Oregon. GSI Water Solutions, Inc.: Portland, OR. January 25.

Please let us know if you have any questions or require additional information.

Sincerely,

Maul Foster & Alongi, Inc.



Brian Tino, PE
Project Engineer

cc: Gene Cotten, NEXT Renewable Fuels, Inc.

Attachments

Limitations

Figures

Limitations

The services undertaken in completing this technical memorandum were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This technical memorandum is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this technical memorandum apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this technical memorandum.

Figures

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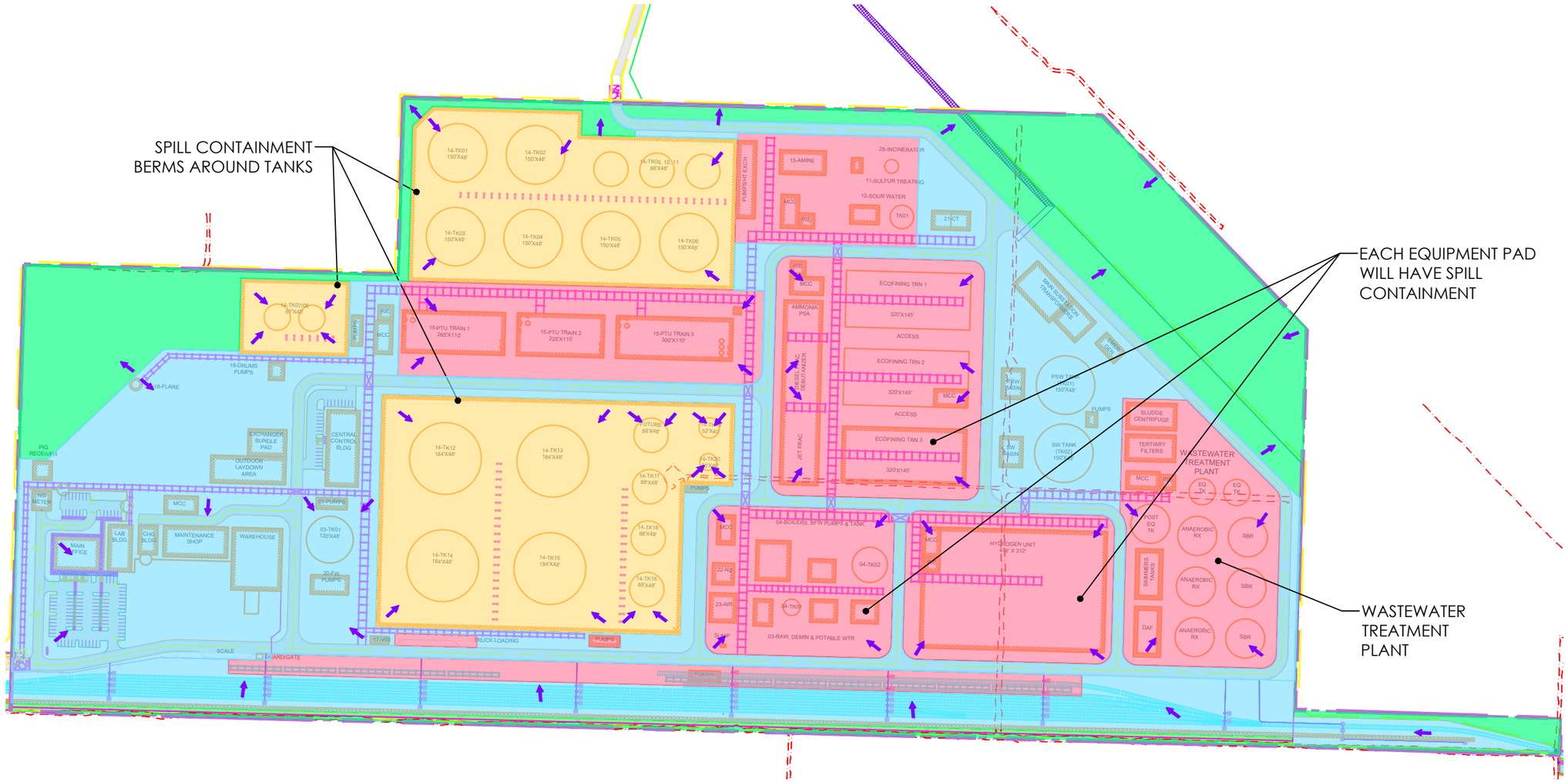

LEGEND

- PROCESS STORMWATER AREAS (33-ACRES)
- STORMWATER AREAS (42-ACRES)
- TANK DIKE AREAS (21-ACRES)
- OTHER PERVIOUS AREAS (14-ACRES)
- DRAINAGE FLOW DIRECTION

PERMIT

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Date:6/29/2023 3:03:18 PM

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NEXT Renewable Fuels, Inc.

MAIN PLANT SPILL PREVENTION

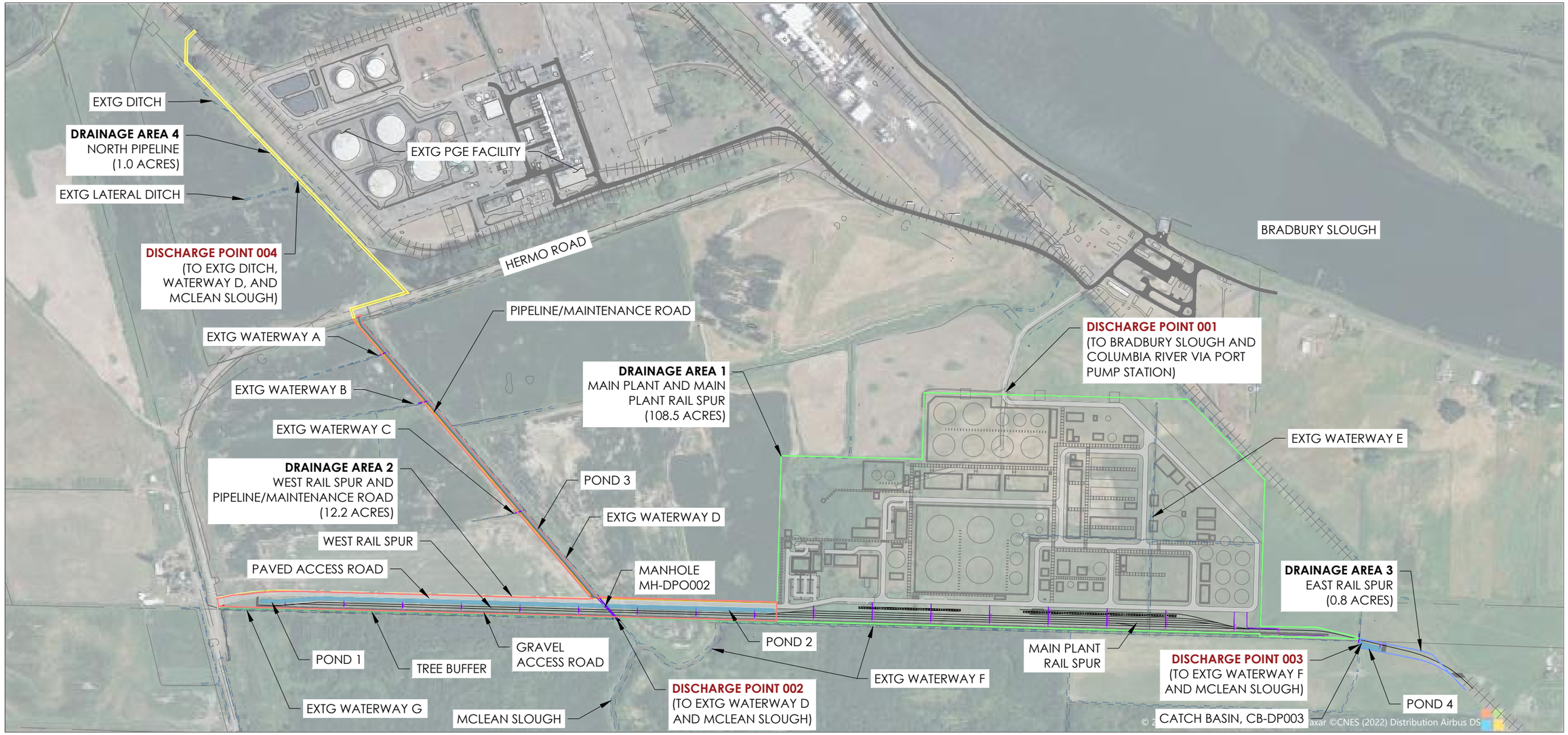
NEXT RENEWABLE FUELS OREGON

NEXT RENEWABLE FUELS, INC.
PORT WESTWARD, OREGON

0 300' 600'

NOTE: BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALE ACCORDINGLY.

FIGURE 1



LEGEND

- STORMWATER POND
- PAVED ROAD
- GRAVEL
- TREE BUFFER
- DRAINAGE AREA BOUNDARY
- RAIL SPUR
- PIPE RACK
- STORM PIPE
- CATCH BASIN
- EXISTING WATERWAY/DITCH

MFA JOB #:	M1724.01
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NEXT Renewable Fuels, Inc.

SITE LAYOUT

NEXT RENEWABLE FUELS OREGON

NEXT RENEWABLE FUELS, INC.
PORT WESTWARD, OREGON

0 700' 1400'

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FIGURE 2

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