

PLAN FOR THE RESTORATION OF WETLANDS TEMPORARILY IMPACTED BY THE USGC 2 PROJECT

1.0 INTRODUCTION

Chevron Phillips Chemical Company LLC (CPChem) U.S. Gulf Coast 2 Project (USGC 2 Project or Project). The Project consists of the construction and operation of a new ethane cracking facility and associated ancillary facilities within approximately 1,800 acres north of an existing CPChem facility located between Orange, Texas and Bridge City, Texas. Details regarding the Project facilities, location, and workspace are presented in the Individual Permit Application submitted to the U.S. Army Corps of Engineers (USACE) on October 8, 2019 under Reference No. SWG-2019-00957.

This Plan for the Restoration of Wetlands Temporarily Impacted by the USGC 2 Project (Restoration Plan) provides a summary of the existing conditions of wetlands that will be temporarily impacted by construction activities, a description of construction procedures and best management practices that will be implemented to minimize impacts on wetlands during construction, and post-construction restoration and monitoring procedures that will be utilized to ensure restoration is successful.

2.0 DESCRIPTION OF IMPACT AND PRECONSTRUCTION CONDITIONS

A majority of wetland impacts and all waterbody impacts associated with the USGC 2 Project will be permanent. However, construction of the Heavy Haul Road and wastewater treatment plant (WWTP) discharge pipeline will temporarily impact 0.85 acres of palustrine emergent (PEM) wetlands and 0.04 acre of palustrine scrub-shrub (PSS) wetlands.

A total of six PEM wetlands will be temporarily impacted by the Project including WP1OR005_HH_PEM, WP2OR001_HH_PEM, WP1OR006_HH_PEM, WP1OR007_HH_PEM, WP1OR008_HH_PEM, and WP1OR009_HH_PEM. Dominant vegetation observed within the PEM wetlands include green flatsedge (*Cyperus virens*), beaked panicgrass (*Panicum anceps*), common carpetgrass (*Axonopus fissifolius*), woodrush flatsedge (*Cyperus entrerianus*), mountain spikerush (*Eleocharis montana*), longspike tridens (*Tridens strictus*), bushy bluestem (*Andropogon glomeratus*), seaside goldenrod (*Solidago sempervirens*).

One PSS wetland will be temporarily impacted by the Project (WP2OR001_HH_PSS). Dominant vegetation observed within this wetland include possumhaw (*Ilex decidua*), Southern

wax myrtle (*Morella cerifera*), slender woodoats (*Chasmanthium laxum*), and Chinese tallowtree (*Triadica sebifera*).

Refer to Appendix J.1 of the October 8, 2019 Individual Permit Application for detailed wetland delineation data.

3.0 CONSTRUCTION

Construction activities that will temporarily impact wetlands include the use of the horizontal directional drill (HDD) and open-cut methods for installation of the WWTP discharge pipeline. Each of these construction techniques are further described below.

3.1 CONSTRUCTION PROCEDURES

HDD Method

The HDD crossing method is a trenchless construction procedure wherein the pipeline is installed below the natural ground using equipment and techniques derived from oil well drilling technology. Pipeline installation using an HDD is a multi-stage process that includes establishing a small diameter pilot hole along the crossing profile, followed by enlargement of the pilot hole to accommodate pull back of the pipeline. The HDD rig and associated equipment are set up on one side of the crossing while the prefabricated pipeline sections are placed on rollers (or floats) on the opposite side of the crossing. Enlarging the pilot hole is an incremental process accomplished with several reaming passes for the installation of the pipeline. The rotating reaming/cutting tool is attached to the drill string at the exit point and drawn back toward the drilling rig situated at the entry point of the pilot hole. Bentonite drilling fluid is used during the drilling and reaming process to remove cutting spoil from the hole as well as to maintain the integrity of hole. Once reaming is completed and the hole is of sufficient diameter, the prefabricated pipeline is attached to the drill string at the exit point and drawn back toward the drilling rig at the entry location.

Open-Cut Method

Where the HDD method is not used, the WWTP discharge pipeline installation will be accomplished via the open-cut method. This method is similar to the open-cut method in upland areas; however, topsoil segregation techniques will be utilized in non-inundated or unsaturated

areas to facilitate revegetation following the completion of construction activities. In some cases, site-specific conditions may not support construction equipment (e.g., inundation), but the area is still proposed for the open-cut crossing method. In these instances, construction mats will be used to minimize disturbances to wetland hydrology and maintain soil structure. Following the completion of construction within wetlands, contours will be restored and the area will be allowed to revegetate naturally (refer to Section 4.0 for additional information regarding restoration).

3.2 BEST MANAGEMENT PRACTICES

CPChem will implement the following best management practices to further minimize impacts on wetlands within temporary workspaces:

- CP Chem will fully comply with all conditions of any construction stormwater permits issued for the project, including those concerning maintaining and inspecting erosion and sediment controls.
- Adequate erosion and siltation control measures and barriers will be installed around construction areas that require earthwork (e.g., excavation), to help aid in the prevention of sediment, debris, and other pollutants from entering adjacent wetlands or waters.
- Topsoil will be segregated in unsaturated wetlands to reduce the potential for compaction, preserve the seed bank, and allow for successful restoration of the disturbed area following completion of Project activities.
- In areas where topsoil has been segregated, the subsoil will be replaced and segregated topsoil will be returned to its original horizon, as practicable. Subsoil and/or topsoil decompaction will be conducted, as necessary.
- Temporarily impacted wetlands will be restored to pre-construction contours to the maximum extent practicable.

4.0 POST-CONSTRUCTION

4.1 RESTORATION

The construction activities discussed above are anticipated to last approximately four months. As discussed in Section 3.0, following the completion of construction activities, CPChem will restore contours in temporary workspaces to pre-construction conditions to the greatest extent

practicable. No reseeding will occur within temporarily disturbed wetlands. To preserve the seed bank and promote natural revegetation, topsoil segregation techniques will be used in non-inundated and unsaturated conditions. Where topsoil segregation is not feasible, mats will be utilized to minimize disturbance of the soil structure.

4.2 MONITORING

To ensure that wetlands temporarily impacted by construction are adequately restored following the completion of construction activities, CPChem will monitor the progress of restoration. CPChem will document the conditions of each wetland within the temporary workspace with photographs prior to construction, immediately following restoration of contours, and after one complete growing season. CPChem will provide documentation of wetland conditions within 60 days of completing monitoring efforts. If, following one complete growing season, the previously disturbed wetland meets all three wetland criteria (i.e., vegetation, soils, and hydrology) and vegetation density is at least 35 percent aerial coverage or is comparable to surrounding undisturbed areas, restoration will be considered successful. If wetlands are not fully restored following the completion of the first growing season, CPChem will consult with the USACE to determine if additional monitoring, corrective actions, or mitigation is necessary.