TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 31, 2021

Ms. Dawn Greening, Remediation Manager
Cameron International Corporation
121 Industrial Boulevard
Sugar Land, Texas 77478

Via email

Re: Former Cameron Iron Works Facility Site, located at 1000 Silber Road, Houston, Harris County, TX; Voluntary Cleanup Program (VCP) No. 221; Customer No. CN600405872; Regulated Entity No. RN101474880

Dear Ms. Greening:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the March 30, 2021, report entitled "Response Action Effectiveness Report" (RAER), prepared by CH2M HILL Engineers, Inc. The report summarizes the groundwater monitoring activities performed in 2020 at the Site. TCEQ understands that the North and South Treatment systems were shut down in 2016, and a total of five years of data (2017-2021) will be used to perform a rebound study and evaluate the effectiveness of a Monitored Natural Attenuation (MNA) remedy while the systems are down. The results of the rebound study will be presented in a 2021 RAER which will be due in 2022.

Please prepare a written response to each of the following comments, referencing the assigned TCEQ comment number, unless otherwise specifically requested. The information in the TCEQ reference line above should be included in your response.

<u>On-Site Plume</u>

1) Based on the results presented in the 2020 RAER, it appears that the COC concentrations trends in the onsite protective concentration level exceedance (PCLE) zone have remained relatively stable since 2016, except at the location of downgradient monitoring well MW-113. The 2020 results for this well revealed increasing trend for some COCs, and 1,1-dichloroethene (1,1-DCE) concentrations exceeding the critical protective concentration level (PCL). The December 2, 2003 phased conditional certificate of completion (CCOC) was predicated upon maintenance of hydraulic control of the plume.

   While TCEQ subsequently approved an evaluation period for MNA to replace the operating system, the response action objective of preventing contaminants from migrating beyond the northern extraction well area at concentrations above PCLs must be met. The TCEQ is willing to allow a reasonable time frame for the attainment of PCLs at this location; however, if MNA is predicted to take in excess of 15 years to attain PCLs, additional actions must be implemented to arrest further contaminant mass

beyond the extraction well line or implement actions that will meet the response action objective within 15 years.

2) The proposed remedy of a plume management zone (PMZ) for the northern portion of the plume requires additional attenuation monitoring point (AMP) installation, as the PMZ is not sufficiently resolved with the current network of wells. Note that such wells were not required previously because of an assumption that contaminant migration was arrested by the groundwater extraction system. However, without that system operational, normal plume characterization should occur, including sufficient AMP wells along the center line of the plume to aid in response action planning and effectiveness determinations.

3) The April 2020 Revised Response Action Plan (RAP) Addendum did not provide a description of the PMZ boundaries. Please modify the RAP to show the boundaries of the PMZ and the location of the point of exposure (POE) and AMP wells. The amended RAP should be submitted using TCEQ form TCEQ-10326/RAP.

Off-Site Plume

4) Based on the results presented in the 2020 RAER, it appears that the COC concentrations trends in a large portion of the offsite PCLE zone have remained relatively stable since 2016, but a portion of the southernmost part of the south plume is showing increasing trends for some COCs. Monitoring wells of potential concern include MW-89, MW-97, MW-173, and MW-168, located at the southern edge of the plume. Under Remedy Standard A, a plume is not allowed to grow and MNA can only be used as the sole remedy when a PCLE zone is shrinking. Please include in the 2021 RAER a thorough evaluation of the MNA effectiveness per Texas Risk Reduction Program (TRRP)-33 guidance document. This evaluation should use multiple lines of evidence and present all historical data used to demonstrate compliance. If analytical results show that the off-site plume is not shrinking in a reasonable timeframe or MNA is not arresting contaminant plume growth, an additional remedy will need to be implemented.

5) The 2018 Revised RAP included a model predicting that the plume will naturally attenuate between 50 years (assuming a conservatively low value for degradation of the most recalcitrant COC, 1,1-DCE, with a half-life of 30 years) and 100 years (assuming no degradation). Please include a model evaluating all target COCs and daughter products in the RAP.

6) Long-term deed notices are required for remedies that are projected to take in excess of 15 years from the submittal of the RAP or other document containing the remedy duration prediction. Please modify the RAP to indicate how this will be accomplished.

7) TCEQ understands that based on property owner's demand to remove the South Treatment System and monitoring well MW-173 from their property, the South Treatment System will be decommissioned, and the monitoring well abandoned prior to the end of the access agreement in August 2022. TCEQ acknowledges the future decommissioning of the South Treatment System; however, this decommissioning does not preclude any response actions that could be requested to arrest contaminant plume growth at the southern edge of the plume.

8) Cameron proposes to replace monitoring well MW-173 with a new well (MW-173R) located approximately 80 ft southeast, in the median of Stable Crest Boulevard. TCEQ approves the replacement of monitoring well MW-173 with MW-173R.

9) The south plume is not delineated to the southwest, towards Buffalo Bayou. During a conversation between TCEQ and Cameron on August 11, 2021, it was communicated to TCEQ that the property owner of the private land located downgradient of the plume could not be reached, and a delineation monitoring well could not be installed upgradient of the bayou. However, modeling completed by Cameron in 2017 predicted the 1,1-DCE plume would not migrate beyond Buffalo Bayou. TCEQ concurs with the use of a groundwater predictive model to demonstrate delineation of the south plume. However, please use the most recent groundwater data and evaluate all COCs that are exceeding the critical PCL at the edge of the plume. Information demonstrating delineation of the south plume should be included in the 2021 RAER.

10) Monitoring well MW-180 was not located due to on-going construction activities and was likely destroyed. Cameron requested approval to remove MW-180 from the current network, based on COC concentrations in this well and upgradient wells. TCEQ approves the removal of MW-180 from the groundwater monitoring network at this time.

11) Please provide graphs of concentration over time and tabulation of all available historical data for the existing monitoring wells.

12) Table 3 of the Data Usability Summary did not include the method quantitation limits (MQLs) of the samples. Because decisions on data qualification appeared to have been made based on the MQLs, please provide an updated Table 3 that includes the MQLs.

13) The plume boundary in the COC concentration maps were drawn based on historical concentration data of adjacent abandoned wells. The shrinking of the PCLE zones cannot be based on an absence of monitoring wells in areas that were previously assessed. Please provide maps and tables showing the historical data used to draw the PCLE boundaries.

A response to these comments should be submitted to my attention at the TCEQ at the letterhead address using mail code MC-221. Your response should be received within 60 days of the date of this letter. Please provide one paper copy and one electronic copy (on USB or disc) of all submittals. Note that the electronic and hard copies should be identical, complete copies.

A Correspondence ID Form (TCEQ Form 20428) must accompany each document submitted to the Remediation Division and should be affixed to the front of your submittal. The Correspondence ID Form helps ensure that your documents are identified correctly and are routed to the applicable program for a timely response. You may contact me with any questions at (512) 239-0217.

Sincerely,

Vitalie Morrison, P.G., Project Manager
VCP-CA Section
Remediation Division
Texas Commission on Environmental Quality

cc: Mr. Matthew Parish, Taunton, Snyder & Slade
Ms. Monica Schneider, CH2M HILL Engineers, Inc.
Mr. David Urann, CH2M HILL Engineers, Inc.
Mr. John Knott, CH2M HILL Engineers, Inc.
Mr. Jason Ybarra, Waste Section Manager, TCEQ Region 12 Office, Houston