

ATTACHMENT 1C.2.4

Groundwater Hydraulic Barrier
East Property Assessment Area



ARCADIS

Groundwater Hydraulic Barrier East Property Assessment Area

Introduction

Texas Custodial Trust's (TCT's) remedial objective for the Groundwater Response Action was to reduce the flux of groundwater beneath the site, especially in the Parker Brothers Arroyo Assessment Area (PBA AA), by extracting groundwater upgradient of the plant site at a location in the North Arroyo on the East Property that has not been impacted above critical protective concentration levels by site activities. Extracting groundwater and reducing the amount of groundwater upgradient of the permeable reactive barriers (PRBs) reduces the velocity of groundwater that moves through the PRBs and increases the level of treatment of COC-impacted groundwater passing through the PRBs. This increased level of treatment reduces loading of site COCs in groundwater from the PBA AA to the Floodplain AA, which ultimately discharges to the Rio Grande River.

The Response Action for creation of a system to control groundwater flux beneath the site is described in the following documents:

- E-mail to Texas Commission on Environmental Quality (TCEQ) dated February 10, 2015 with attachments including a three-page summary of the groundwater extraction system and a figure showing the proposed location of the system
- Response Action Plan (RAP) Worksheet 2.0, Page 16 – Groundwater Gradient Control with GHB Extraction System
- RAP Worksheet 2.0, Page 19 – Groundwater Hydraulic Barrier System, components and equipment
- RAP Worksheet 3.0, Page 2 – GHB Performance in controlling groundwater
- RAP Worksheet 3.2, Page 32 – operation and maintenance
- RAP Appendix 3.6, Groundwater Flux Estimate Summary
- RAP Attachment 2A-12, East Property Groundwater Hydraulic Barrier Design

Regulatory Approval

- E-mail from Eleanor Wehner, TCEQ dated February 25, 2015 indicating that no Texas Pollution Discharge Elimination System permit would be required to discharge groundwater un-impacted by the Asarco remediation activities

Response Actions

The groundwater hydraulic barrier (GHB) system includes an extraction well, pipeline, and storage tank as detailed in Attachment 2B of the RAP. The extraction well, EP-163, has a 4-inch PVC casing with 36 feet of screen extending from 20 to 56 feet bgs. The well is equipped with a 1 horsepower, three-phase pump. The transmission pipeline is composed of 4-inch high density polyethylene. A 10,000-gallon storage tank is maintained at the well site for potential use of the water for on-site construction activities, such as dust suppression. The GHB is pumping groundwater at the rate of 23 gallons/minute or approximately 33,000 gallons/day. The groundwater is piped into a stormwater basin downgradient of the site near the property boundary to the east of Paisano Drive. From there, the water flows through pipes and concrete canals and discharges to the Rio Grande River at Outfall SW-5.

Because this Response Action primarily relates to groundwater, additional discussion will be included in the Groundwater RACR.

Supporting Documentation Included in This Attachment

- E-mail from Eleanor Wehner, TCEQ dated February 25, 2015 indicating that no Texas Pollution Discharge Elimination System permit would be required to discharge groundwater un-impacted by the Asarco remediation activities
- E-mail to TCEQ dated February 10, 2015 with attachments including a three-page summary of the groundwater extraction system and a figure showing the proposed location of the system
- Extraction Well EP-163 Log
- RAP Figure 12 PRB and GHB Facility Map