SITE REGISTRY REPORT

PROPOSED WATER QUALITY ASSURANCE REVOLVING FUND (WQARF) SITE
Bahama Avenue and Bimini Lane
Lake Havasu City, Mohave County, Arizona
September 2021

Site Location

The proposed Bahama Avenue and Bimini Lane Water Quality Revolving Fund (WQARF) Registry site (the Site) consists of a contaminated soil, soil-gas, and groundwater plumes located in the vicinity of the intersection of North Lake Havasu Avenue and Bahama Avenue, Lake Havasu City, Arizona. The site is generally bounded to the north by Industrial Boulevard, to the south by Palo Verde Boulevard, to the east by the Orion Lane alignment, and to the west by London Bridge Road. The site is in an urban setting that includes a mixture of commercial businesses, light industrial, and residential neighborhoods. The site is located approximately 1 mile north of the center of Lake Havasu City, and 0.75 miles west of Lake Havasu.

Background

In 2001 – 2003, a Preliminary Assessment/Site Inspection (PA/SI) was carried out for the United States Environmental Protection Agency (USEPA). This investigation determined that soil, soil-gas, and groundwater were impacted with Volatile Organic Compounds (VOCs), especially trichloroethene (TCE). In addition, soils and groundwater were impacted by heavy metals. The highest concentrations were located in the vicinity of a reported former evaporation pond from the former McCulloch facility, which maintained operations on the property located at 648 N Lake Havasu Avenue from approximately 1964 until 1988. Since 1988, multiple other facilities have occupied the buildings on the former property, but the location of the former evaporation pond remained vacant land.

A prospective purchaser for the former evaporation pond property brought the site to the attention of ADEQ in 2019. A limited phase II investigation conducted on behalf of the prospective property owner indicated shallow soils containing arsenic over Soil Remediation Levels (SRLs).

A limited site investigation was performed by ADEQ in 2020 to confirm the releases of VOCs to soil gas and groundwater. This included collection of soil and soil-gas samples at depths extending from 15 feet below ground surface (bgs) to the water table. The maximum TCE concentrations detected in the soils was 0.0344 mg/kg, below the SRL for TCE. The highest TCE soil-gas concentration was 135,947 µg/m³ at 50 feet bgs. TCE was also detected over the Soil Vapor Screening Level (SVSL) in samples collected at 15 feet bgs, indicating that there is a potential for vapor intrusion at this Site

Several monitoring wells were installed, and groundwater sampled. The chemicals of concern (COCs) detected in groundwater samples included the VOCs tetrachloroethene (PCE), trichloroethene (TCE), and cis-1,2-dichloroethene (c1,2-DCE). PCE and TCE were present in groundwater at levels that exceeded their Aquifer Water Quality Standards (AWQS) of 5 micrograms per liter (µg/L). TCE was the most extensively detected compound above AWQS. The heavy metal thallium was detected at an estimated concentration over AWQS in one sample. In all other thallium samples, the detection limit was higher than the AWQS, so it is unclear if the thallium reported is related to the Site.

The highest groundwater concentration of TCE detected in the 2003 sampling event was 1,400 µg/L. The highest concentration detected in the 2020 sampling was 2,650 µg/L. As there has been no decrease in concentrations in the area over a period of 17 years, there is likely an on-going source of TCE to groundwater in the vadose zone in the area. While no soils exceeded SRLs, TCE was detected in the soil and soil gas extending from shallow soils to just above the water table near to the former evaporation pond.

One private well has been confirmed within approximately 300 feet of the suspected source area. At the beginning of the investigations in 2019, the well owner informed ADEQ that the well was used as a potable source as well as food irrigation on the property, and that there was no Lake Havasu City water connection to the property. Multiple attempts have since been made to contact the well owner to sample the well, with no response.

Two Lake Havasu City water wells are located within a mile downgradient of the suspected source area. The City has informed ADEQ that these wells are currently inactive, with no current plans to use the wells.

Lake Havasu is located within 0.75 miles downgradient of the suspected source area. The lake use is full body contact and fish consumption in the immediate vicinity. Sample results collected from the lake in suspected groundwater seepage areas near the Site showed TCE in one sample at an estimated concentration of 0.248 µg/L. While not over any water quality standard, this indicates a potential pathway for Site contamination into the lake. Drinking water for Lake Havasu City is withdrawn from the lake approximately 1.75 miles south of the Site.

The hydrogeology consists of groundwater occurring at approximately 100 feet below ground surface (bgs) in alluvial fan deposits, composed of interbedded sand, gravel, and cobbles, with some discontinuous lean clay layers. The limited groundwater data indicates the groundwater flow direction is likely to the southwest, towards Lake Havasu.

The E&E score is 46 out of a possible 120. ADEQ proposes that the Site be added to the WQARF Registry established pursuant to Arizona Revised Statutes (ARS) § 287.01(D). This Site Registry Report (SRR) was prepared to meet the requirements of ARS § 287.01(B).

Rationale to list the Site on the WQARF Registry

- TCE detected in groundwater at a maximum of 2,650 µg/L, far in exceedance of the AWQS of 5 µg/L.

- No decreases in TCE concentrations detected in groundwater over a span of 17 years, indicating a possible on-going soil source acting as a continuing source of TCE to groundwater.

- Unknown impacts to a privately-owned domestic water well near to the boundaries of the Site.

- A likely pathway for contamination to enter Lake Havasu. Lake Havasu water use is full body contact and fish consumption near to the Site, and drinking water collection within 1.75 miles of the Site.