

## **SCOPE OF WORK HIGHWAY 260 AND JOHNSON LANE**

The scope of work for the Highway 260 and Johnson Lane remedial investigation has been divided into the following key tasks:

**Task 1: RI Workplan:** ADEQ's contractor will prepare a workplan that describes the work to be performed, provides a work schedule, and includes an abbreviated quality assurance project plan (QAPP), a sampling and analysis plan (SAP), and health and safety plan (HASP). In preparing the workplan, a list of wells to be sampled will be developed for use in obtaining access. The QAPP will identify sampling objectives; sample types, containers and preservatives; forms; and sample labeling and chain-of-custody protocols. The SAP will include a map showing well locations; procedures for measuring water levels and obtaining samples; laboratory analytical methods, and sampling equipment decontamination procedures. The HASP will identify key project personnel; establish H&S responsibilities; identify potential risks that may be encountered; describe applicable H&S procedures, employee responsibilities, personal protective equipment, and standard work practices.

**Task 2: Private Potable Well Survey/Baseline Groundwater Conditions:** Certain properties in the Area of Interest receive potable water from Arizona Water Company (AWC) production wells. Other potential receptors obtain water from private wells. ADWR's database indicates 494 private wells are within a 4-mile radius of the site. There may be receptors consuming water from private wells that are not documented in ADWR's database. ADEQ's contractor will prepare a map showing the known (documented in the ADWR database) private potable wells and outlining the AWC service area in the four Sections (23-26) that encompass the Site to help confirm that there are no potential receptors receiving water from private wells not documented in the ADWR database. ADEQ's contractor will sample up to 50 private potable wells within a ¼ mile radius of suspected source areas. It is assumed that it will not be necessary to remove the pumps and that the water samples will be collected from an existing sample port or faucet. Prior to sampling of these wells, ADEQ's contractor will review ADWR records to determine the well screen intervals.

Based on a preliminary review of ADWR's database, significant data gaps exist within the database. As such it is unlikely that well screen intervals will be available for all private potable wells within the area of interest. To address the expected data gaps, ADEQ's contractor will remove pumps from up to 20 private wells, video log these private wells to determine screen intervals, measure water levels in these private wells and replace the pumps. The water quality data, water level data, and well screen data will be utilized to assess plume extent, identify data gaps, determine if the area of interest should be expanded, and prepare the conceptual site model.

**Task 3: Source Identification:** Subsequent to or concurrent with Task 2, ADEQ's contractor will perform site assessments at potential sources to confirm the actual source(s). A membrane interface probe (MIP) will be utilized to facilitate a dynamic work strategy by providing real time data and allowing real-time field decisions regarding step outs and soil gas sampling points. The information obtained will guide the location of the subsequent groundwater sampling locations, and support a focused, more efficient groundwater investigation. Competent rock will reportedly be encountered at approximately 10 – 15 feet below ground surface at the Site. As such, the direct push rig will likely encounter refusal at these depths, and limit the investigation to these depths. If field conditions allow, the source investigation will be extended to greater

depths.

**Task 4: Conceptual Site Model:** ADEQ's contractor will update the CSM with the visualization and analysis of key data (geological, hydrogeological, and chemical) in a 3-dimensional, spatially accurate format. 3DVA visualization involves a scientific and geo-statistical interpolation of data using an innovative adaptive gridding process to generate interactive images and animations of actual site conditions. The initial output from the model will be generated following completion of Tasks 2 and 3.

**Task 5: Groundwater Investigation:** ADEQ's contractor will install one well to assist in the vertical and lateral profiling of the PCE groundwater plume and lithology. The well location will be determined following the completion of Tasks 2, 3, and 4. A pilot hole will be advanced using a 4 by 6 inch Sonic rig tool to a depth of 200 feet. The rate of drilling will be monitored and the drill core will be observed to determine the lithology and identify water bearing zones in the fractured limestone, which is anticipated at relatively shallow depths. The open borehole will be geophysically profiled using E- logs, resistivity, neutron/gamma, deviation, and caliper technologies. Following logging, groundwater samples will be obtained from the open borehole using straddle packers to isolate the water bearing zones. Up to 10 samples will be obtained and analyzed in the field for selected VOCs using a Frog 4000 hand-held analyzer. Sample depths will be based on field monitoring and observations. Twenty five percent of the groundwater samples will be submitted to a laboratory for confirmation of the field results. Following sampling, the borehole will be reamed using an air rotary drill rig to a diameter of 12 inches and completed as nested monitoring well with three 2-inch diameter PCS casings with screen intervals set based on field data. One screen interval will be located at the bottom of the well to vertically define the groundwater plume.

**Task 5: Confirmation Sampling:** Six months after completion of the field work and prior to completion of the RI Report, a round of confirmation groundwater sampling and soil vapor sampling will be performed prior to the end of the 2017 fiscal year.

**Task 6: Draft RI Report:** Data generated during the field activities will be assembled, reviewed, and summarized in tables and figures. Draft sections of the RI report describing these activities will be generated as the work is completed. Completed tables and figures and pertinent sections of the report, including presentations from the 3D model will be submitted for ADEQ review and comment. The draft RI report will be completed in FY2018.