

# EXHIBIT 8

## EXHIBIT "A" – SCOPE OF WORK

Our scope of work as the Antelope Valley Watermaster Engineer is based on the duties and responsibilities outlined in section 18.5 of the Judgment. The scope is focused on tasks scheduled for the remainder of calendar year (CY) 2017, recognizing the significant level of effort required of the Watermaster Engineer by the end of this year. This first year of our work is critical for establishing the rules, regulations, procedures, and working relationships that will serve as the foundation for work in future years. Importantly, the deadline for the first Annual Report is due to the Court in less than three months and much needs to be accomplished in a short amount of time.

This scope of work describes the primary tasks and subtasks that need to be addressed in CY 2017. An associated budget for these tasks and subtasks is included as Table B-1 in Exhibit B of this contract. As requested, a general budget for CY 2018 (Table B-2) and CY 2019 (Table B-3) are also provided in Exhibit B. Because the work for these two subsequent years has not yet been fully defined, these budgets are provided as placeholders for our three-year contract. More detailed scopes and budgets will be developed for 2018 and 2019 as necessary tasks are identified.

Given the foundational nature of the first year's work, we have dedicated a significant portion of our CY 2017 budget to meetings, communication and coordination (Task 1). These meetings will provide transparency and coordination for successful implementation of additional tasks, which include:

- development of the Rules and Regulations Document (Task 2),
- evaluation of monitoring data and analyses, which also involves the development of technical databases needed to track production and safe yield components (Task 3),
- documentation of water quality and well permitting (Task 4),
- preparation of the first Annual Report (Task 5), and
- SGMA reporting (Task 6).

Tasks have been re-ordered slightly from those listed in our February 2017 proposal. In addition, no task for a Material Injury analysis has been included because the need for such an analysis has not yet been identified. If such an analysis is required in 2017, we assume that the budget to perform the analysis will be provided by the applicant.

A brief description of the 2017 tasks and subtasks is provided below and mirrors the detailed task budget presented in Table B-1 (Exhibit B).

### Task 1. Project Coordination and Communication

The early stages of implementation of the Judgment require effective communication and documentation. This task will allow the Watermaster Engineer team to work closely with the Watermaster, Advisory Committee, legal counsel, and administrative staff in accomplishing the important first-year tasks. We anticipate attending each of the monthly Watermaster Board meetings, either as in-person or conference call/web meetings as discussed in more detail below.

### **Subtask 1.1 – In-Person Meetings.**

Up to 11 meeting trips (one person per trip) are included in our scope. For efficiency, we can combine more than one meeting on each trip, depending on the need and availability of key participants. For example, we could meet with the Board in the morning and the Advisory Committee or administrative staff that afternoon.

We anticipate a kickoff meeting to initiate the project and establish lines of communication for our 2017 work. We expect that the kickoff meeting trip will involve working with key personnel and administrative staff to discuss available data and data management, including the logistics of data access, update, and sharing. We anticipate this meeting to occur as soon as possible after approval of the contract.

Specific topics to be presented at in-person meetings (regular Board meetings, Special Board meetings, or other meetings) include:

- Organize and attend kickoff meeting for project initiation.
- Present draft and final 2016 Annual Report to the Board and Advisory Committee (2 meetings).
- Discuss current methods of data collection, metering, and monitoring of safe yield components with key personnel.
- Present an outline of the Rules and Regulations Document and discuss the development process.
- Present draft and final Rules and Regulations to the Board and Advisory Committee (2 meetings).
- Attend four additional meetings that could include Board meetings, Advisory Committee or Subarea Committee meetings, end-of-year status meeting, or other meetings, as needed.

Additional meetings beyond the 11 meeting-trips included in the budget can be convened via teleconference or in person on a time and materials basis, as needed.

### **Subtask 1.2 – Conference Calls / Web Meetings.**

Project coordination and additional communication with the Board, stakeholders, administrative staff, legal counsel, or others can be accomplished through a series of conference calls or web meetings if an in-person report is not required. A significant level of effort (about 120 hours) has been dedicated to this subtask to ensure that our team is available when needed.

### **Subtask 1.3 – Project Management.**

This task covers additional project coordination and management to support efficient accomplishment of our tasks, appropriate project planning, and adherence to the proposed budget. The task includes billing and progress reports for documentation and transparency.

## **Task 2. Rules and Regulations Document**

As Watermaster Engineer, Todd Groundwater will develop a set of Rules and Regulations for Watermaster and Court approval. We will work with the Board, Advisory Committee, and legal counsel to ensure that the Rules and Regulations are consistent with the Judgment and meet local requirements. One of our first steps will be development of an outline for consideration by the Board and stakeholders. A draft document will be made available at least 30 days before a public hearing, when we will provide a presentation and summary of the draft document for the Board. Comments from the Board and stakeholders will be incorporated into a final document.

The document will include the following topics:

- Duties and procedures of the Board including determination of decision types needing unanimous approvals.

Scope of Work CY 2017

Antelope Valley Watermaster Engineer

2

Todd Groundwater

- General information on Watermaster administration such as organization, procedures, office location, meetings, and website address.
- General information on Advisory Committee functions and procedures.
- Duties of the Watermaster Engineer.
- Definition of terms.
- Details on production measuring procedures, devices, testing, and reporting.
- Requirements for Producers' annual Production Reports including content, submittal, and schedule. Reports are to include total production by well for each reporting period plus additional information, e.g., well coordinates and well construction information.
- Guidelines for carry overs (production right, in lieu production right, imported water return flows), transfers, and changes in extraction location.
- Procedures for assessments (administrative, replacement water, balance, and delinquency).
- Procedures for equitable Replacement Water allocation.
- Guidelines for New Production Application per section 18.5.13.
- Rules for Storage Agreements for stored water.
- Notification procedures for storm flow diversions.
- List of information to be included in the annual reports to the Court.
- Any other information deemed necessary.

As indicated by the list above, this task combines many disparate procedures and operational processes into one guidance document. For budgeting purposes, the large task has been subdivided into general self-evident subtasks as shown on Table B-1 and listed below:

- **Subtask 2.1 – Describe Production Measurement/Meter Installation Requirements,**
- **Subtask 2.2 – Develop Information Required by Judgment,**
- **Subtask 2.3 – Prepare Administrative Draft Document,**
- **Subtask 2.4 – Prepare Draft Document, and**
- **Subtask 2.5 – Prepare Final Document.**

Two drafts are assumed because of the large number of stakeholders (including legal counsel) required to review and comment on this document.

We assume that most of the document can be completed in 2017. However, given the need for input, review, comment, and approval by others, the final Rules and Regulations document may be extended into 2018. We anticipate the document being completed for submission to the Court with the 2<sup>nd</sup> Annual Report (April 1, 2018). The schedule for development of the Rules and Regulations Report will be discussed at the kickoff meeting.

### **Task 3. Monitoring and Analyses**

The Judgment requires specific monitoring and data tabulation for tracking of safe yield components, production details (as administered by the Judgment), and other hydrologic data. We recognize that extensive monitoring programs that currently exist in the Basin and have provided the basis for the expert report and Judgment. We will compile and use existing data in our ongoing analyses of Basin conditions. Although not explicitly stated in the Judgment, certain hydrogeologic analyses are needed to understand changing groundwater conditions and to identify Material Injury. Accordingly, we are recommending the inclusion of these analyses in this task. For example, analyses may include preparation of water level contour maps, hydrographs, rainfall histograms, water quality changes, and impacts for the subsidence potential. These analyses may also require application of a

basin-wide groundwater model for some analyses, but will not be developed at the same level of detail in each circumstance. Rather, we will work with the Watermaster to develop a reasonable level of effort for hydrogeologic analyses in response to the Judgment.

Task 3 only includes Watermaster Engineer duties applicable for the next three years. Additional duties, such as the 17th year review of native safe yield and imported water return flow calculations are not included in this work plan for the 2017-2019 period.

**Subtask 3.1 – Compile and Review Existing Studies and Data**

The safe yield determination in the Judgment was based on detailed technical analyses of historical hydrologic data that have been documented in the Phase 3 report and appendices (Summary Expert Report, Phase 3, Basin Yield and Overdraft, July 2010). Recognizing that these data sets and studies were provided to the Court through the litigation parties, it is assumed that both the studies and the source data are available for the Watermaster Engineer team. Acquisition of these data sets and studies will provide the historical context for the safe yield determination and a basis for future improvements to monitoring and analyses. To the extent available, we assume that these data can be transferred in an electronic database format (e.g., Excel or Access). The current budget does not include the cost of extensive hand entry of historical data sets.

**Subtask 3.2 Collect and Analyze 2016 Safe Yield Data.**

As Watermaster Engineer, we will be responsible for monitoring of hydrologic data and tracking the safe yield components in accordance with the Judgment. For the first year, we will rely on the current groundwater level monitoring data provided by two primary sources:

- CASGEM program by the State Water Contractors.
- Individual well monitoring data from landowners and agencies.

Additional safe yield components will include agricultural, municipal, and industrial production and return flows; recycled water use and return flows; and imported water use and return flows. Based on the available data obtained in Subtask 3.1 and additional data compiled in this subtask for 2016, the safe yield monitoring program will be evaluated.

We will request and rely on owners of existing monitoring points (wells, extensometers, stream gauges, etc.) in the basin to provide information on location, construction, and monitoring equipment and protocols. Monitoring data could include surface water flows, climate data, elevation data, water levels, and/or groundwater quality.

We assume that parties with adjudicated water rights data are available in electronic format from the administrative staff (i.e., for assessment billings). Production data from parties to the Judgment will be obtained from the annual Production Reports that are required for submittal to the Watermaster. We will also request initial data sets, if any, compiled from previous Watermaster engineering services (Wagner & Bonsignore).

**Subtask 3.3 – Develop Project Databases for Groundwater Production Reduction Tracking and Safe Yield Analysis.**

Project databases will be developed to support tracking of safe yield components including groundwater monitoring data and groundwater production in accordance with the Judgment. For the hydrologic data and safe yield tracking, project databases will accommodate current, historical (as needed), and future data sets of groundwater levels and quality, and components of natural recharge and discharge.



A separate production tracking database will be developed for accurate tracking of production prior to and during rampdown in accordance with the terms of the Judgment. This production tracking database will also be capable of tracking options allowed in the Judgment such as transfers, storage agreements, replacement water, stormwater diversions, return flows, and ownership. Even though many of these options are not applicable until after 2017 (e.g., carry-over water, stored water, or replacement water assessments), that database needs to be set up to accommodate water tracking of all scenarios allowed in the Judgment.

**Subtask 3.4 – Document Transfers and Change in Use Information.**

Although this is shown in the budget as a very minor task for 2017, we include it as a subtask to ensure that records are reviewed for potential transfers and change in use. We want to be sure that events that occurred prior to our tracking are not missed.

**Subtask 3.5 – Calculate Imported Water Return Flows.**

Similar to Subtask 3.4, the calculation of imported water return flows is included as a relatively minor subtask to ensure that these return flows are accounted for and that the database is set up for tracking the water. Details for tracking and ownership of imported water return flows are provided in the Judgment (Paragraphs 5.2, 15.2, and 18.5.11).

**Subtask 3.6 – Develop Approach for Additional Analyses.**

Additional analyses may be required under the Judgment. Examples of these include notifications of storm water diversions or applications for new production. The budget can also support the development of working relationships with local city and county land use planning and water management agencies to allow early identification of proposed projects in the watershed that could reduce storm flows.

**Subtask 3.7 – Report on Monitoring and Metering Status.**

This subtask documents the status of monitoring and metering in the basin and identifies data gaps and future monitoring needs. We will identify methods and develop recommendations for improved monitoring and metering as required by the Judgment.

## **Task 4. Water Quality and Well Permitting**

To protect the Basin’s water quality, Todd Groundwater will cooperate with regulatory agencies to enforce water quality-related regulations, including those for solid waste and liquid water disposal (e.g., Waste Discharge Requirements). Subtasks associated with the collection and review of water quality data and how those data inform the well permitting process are described below.

**Subtask 4.1 – Collect Groundwater and Surface Water Quality Data.**

Existing groundwater and surface water quality data will be identified, compiled, and included in a project database. The emphasis will be on current and future water quality data sets to complement the documentation of historical water quality data compiled in Task 3, if applicable (see Subtasks 3.1, 3.2, and 3.3). To develop background groundwater quality data, we will compile readily available groundwater quality data for municipal wells that are regularly monitored for groundwater quality. We anticipate that these data are available in an existing database format (available from the Division of Drinking Water or directly from the agencies). Accordingly, a relatively small budget is associated with this subtask and hand entry of water quality data is not included. If relevant and useful data are identified in a non-electronic format, we will make recommendations to the Board and Advisory Committee on the use and potential archiving of these data. Additional water quality data will be compiled from sites with specific water quality monitoring.

#### **Subtask 4.2 – Identify Regulatory Sites and Water Quality Data.**

Sites in the Basin that are specifically regulated for surface water or groundwater quality will be documented using online tools available through the State Water Resources Control Board (referred to as Geotracker). As part of this work, we will also document applicable water quality regulations including state and federal water quality standards and basin plan water quality objectives. This initial subtask includes the identification of regulatory sites and available data only. If additional analyses of these data are required to ensure the protection of groundwater quality, we will make recommendations to perform these analyses in the 2018 budget.

#### **Subtask 4.3 – Develop Well Permitting Requirements.**

As Watermaster Engineer, Todd Groundwater will develop working relationships with county well permitting agencies to avoid construction or modification of wells without required New Production applications. We will also develop Memoranda of Understanding with Kern and Los Angeles counties for close collaboration on well drilling ordinances, permitting and regular notification and reporting.

### **Task 5. Annual Reports**

Annual reports are to be filed with the Court by April 1 for the preceding year. Recently, the Court granted a 120-day extension to the Antelope Valley Watermaster Board for submittal of the 2016 Annual Report, which will be the first to be submitted for the adjudication. This means that the 2016 Annual Report is due to the Court by August 1, 2017. Given this schedule, the Watermaster Board will likely need to schedule a special Board Meeting on July 27 or 28 (or even Monday July 31) for final approval of the 2016 Annual Report.

Due to the expedited schedule for the 2016 Annual Report, this will be an urgent task for our initial 2017 work. Some details may not be fully developed for this initial annual report. We will work with the Watermaster to streamline this process; we will need timely and expedited review of all draft reports. Todd Groundwater asks for the early cooperation and assistance from all parties for compilation of the required material for the report.

Even though we are not yet under contract, we have already submitted a draft outline of the Annual Report to the Watermaster for initial review (see PowerPoint presentation slide No. 5 from the March 28<sup>th</sup> meeting). We need to move quickly to meet the deadline, given that the first 30 days of the 120-day extension will already be gone by the time our contract is likely approved.

Annual reports are to include:

- Annual fiscal report of the preceding Year's operation
- Details regarding the operation of each of the Subareas
- Audit of all assessments and expenditures
- Review of Watermaster activities
- Compilation of at least the following:
  - Replacement Obligations
  - Hydrologic Data Collection
  - Purchase and Recharge of Imported Water
  - Notice List
  - New Production Applications
  - Rules and Regulations (developed in Year 1)
  - Measuring Devices
  - Storage Agreements

- Annual Administrative Budget
- Transfers
- Production Reports
- Prior Year Report
- Amount of Stored Water Owned by each Party.

**Subtask 5.1 – Develop Groundwater Elevation and Change Maps.**

Based on the evaluation of the monitoring data collected in Task 3, we will prepare groundwater elevation contour maps and change maps. We assume that the previous water level contour maps can be provided in electronic format. It will be important to contour the data in a consistent manner with the previous technical work so that changes in groundwater in storage will not be indicated where no data exist to document such a change. The number of maps to be prepared will vary depending on the amount and quality of available data.

**Subtask 5.2 – Prepare Safe Yield Memorandum.**

To document the data and methodology, we will prepare a brief technical memorandum on the 2016 safe yield components and the evaluation of change in groundwater in storage. Data gaps will also be highlighted for future monitoring improvements.

**Subtask 5.3 – Document Watermaster Activities.**

As required by the Judgment, Watermaster activities including Board and committee meetings, operation of subareas, and production tracking will be described for the Annual Report.

**Subtask 5.4 – Compile and Report Financial Information.**

As required by the Judgment, financial information provided by the Watermaster administrative staff will be compiled for presentation in the 2016 Annual Report. Material will include the 2016 fiscal report, annual 2017 budget and projected 2018 budget, financial audit of assessments and expenditures, and assessment collection status and determination.

**Subtask 5.5 – Prepare Administrative Draft and Draft 2016 Annual Report.**

An Administrative Draft 2016 Annual Report will be submitted to the Watermaster for review by mid-June, allowing a two-week review and comment period. Although all sections of the report may not be fully developed by this time, we will have sufficient information and placeholders to allow Board members to see the contents and format of the report. To meet the expedited schedule, we will require comments on the Administrative Draft by the end of June. Board comments will be incorporated into a Draft 2016 Annual Report, which will be provided by the first week of July. Again, we ask for a two-week review and comment period, with all comments due by mid-July. If comments require additional work that cannot be accomplished prior to the August 1 deadline, we will work with the Board to develop a substitute approach. Electronic submittal is assumed for the Draft Annual Reports.

**Subtask 5.6 – Prepare Final 2016 Annual Report and Submit to the Court.**

The Final 2016 Annual Report will address comments from the Watermaster, Legal Counsel, parties to the Adjudication, and the public. It will be filed with the Court no later than August 1. Electronic submittal is also assumed for the Final 2016 Annual Report.

**Task 6. SGMA Compliance**

To comply with the Sustainable Groundwater Management Act (SGMA) (Water Code section 10720.8), adjudicated areas are required to submit information to the California Department of Water Resources (DWR)



by April 1 of each year. Information can be submitted online to DWR's Adjudicated Areas Annual Reports website <http://sgma.water.ca.gov/adjudbasins/report/publicview>. The following information is to be submitted:

- Groundwater elevations
- Groundwater production for the preceding water year
- Surface water supply used or available for groundwater recharge
- Total water use
- Change in groundwater storage
- The annual report submitted to Court.

Most of the information required by SGMA will be available in the annual report, but must be re-packaged to meet the submission requirements. Todd Groundwater will submit required information to comply with SGMA by August 1, 2017 (with a recent 120-day extension from the previous deadline of April 1, 2017). This deadline is the same of the Annual Report; therefore, we will need to develop the two submittals simultaneously.