

**AGREEMENT FOR PROFESSIONAL SERVICES FOR THE AIRBORNE  
ELECTROMAGNETIC (AEM) SURVEY OF LAKE COUNTY'S GROUNDWATER  
BASINS**

This Agreement is made and entered into by and between the Lake County Watershed Protection District, hereinafter referred to as "DISTRICT" and Geophysical Imaging Partners Inc., hereinafter referred to as "CONSULTANT", collectively referred to as "PARTIES"

- 1. SERVICES.** Subject to the terms and conditions set forth in this Agreement, CONSULTANT shall provide to the DISTRICT the services described in the Scope of Work attached hereto and incorporated herein as Exhibit A at the time and place and in the manner specified therein. In the event of a conflict in or inconsistency between the terms of this Agreement and Exhibits A, B and C, the Agreement shall prevail.
- 2. TERM.** This Agreement shall commence on the signed date of this Agreement and shall terminate on March 1, 2027, unless earlier terminated as hereinafter provided. In the event DISTRICT desires to temporarily continue services after the expiration of this Agreement, such continuation shall be deemed on a month-to-month basis, subject to the same terms, covenants, and conditions contained herein.
- 3. COMPENSATION.** CONSULTANT has been selected by DISTRICT to provide the services described hereunder in Exhibit "A" (Proposed Scope of Services/Work). Compensation to CONSULTANT shall not exceed three-hundred thousand dollars (\$300,000.00).

the DISTRICT shall compensate CONSULTANT for services rendered, in accordance with the provisions set forth in Exhibit "B" (Fiscal Provisions), attached hereto, provided that CONSULTANT is not in default under any provisions of this agreement.
- 4. TERMINATION.** This Agreement may be terminated by mutual consent of the parties or by DISTRICT upon thirty (30) days written notice to CONSULTANT.

Upon termination, CONSULTANT shall be paid a prorated amount for the services provided up to the date of termination.
- 5. MODIFICATION.** This Agreement may only be modified by a written amendment hereto, executed by both parties; however, matters concerning scope of services which do not affect the compensation may be modified by mutual written consent of CONSULTANT and DISTRICT executed by Water Resources Director.
- 6. NOTICES.** All notices between the parties shall be in writing addressed as follows:

Lake County Watershed Protection District

255 North Forbes Street, Lakeport, CA 95453  
Attn: Pawan Upadhyay, Water Resources Director

Geophysical Imaging Partners Inc.  
261 Gladys Dr., Pleasant Hill, CA 94523  
Attn: Ahmad Ali Behroozmand, Senior Geophysicist

7. **EXHIBITS.** The Agreement Exhibits, as listed below, are incorporated herein by reference:

Exhibit A - Scope of Work & Timeline

Exhibit B - Fiscal Provisions

Exhibit C - Compliance Provisions

8. **TERMS AND CONDITIONS.** CONSULTANT warrants that it will comply with all terms and conditions of this Agreement and Exhibits, and all other applicable federal, state and local laws, regulations and policies.

9. **INTEGRATION.** This Agreement, including attachments, constitutes the entire agreement between the parties regarding its subject matter and supersedes all prior Agreements, related proposals, oral and written, and all negotiations, conversations or discussions heretofore and between the PARTIES.

LAKE COUNTY  
WATERSHED PROTECTION DISTRICT

CONSULTANT  
GEOPHYSICAL IMAGING  
PARTNERS INC.



---

Pawan Upadhyay, PhD  
Water Resources Director

---

Ahmad Ali Behroozmand, PHD, PGP  
Project Manager

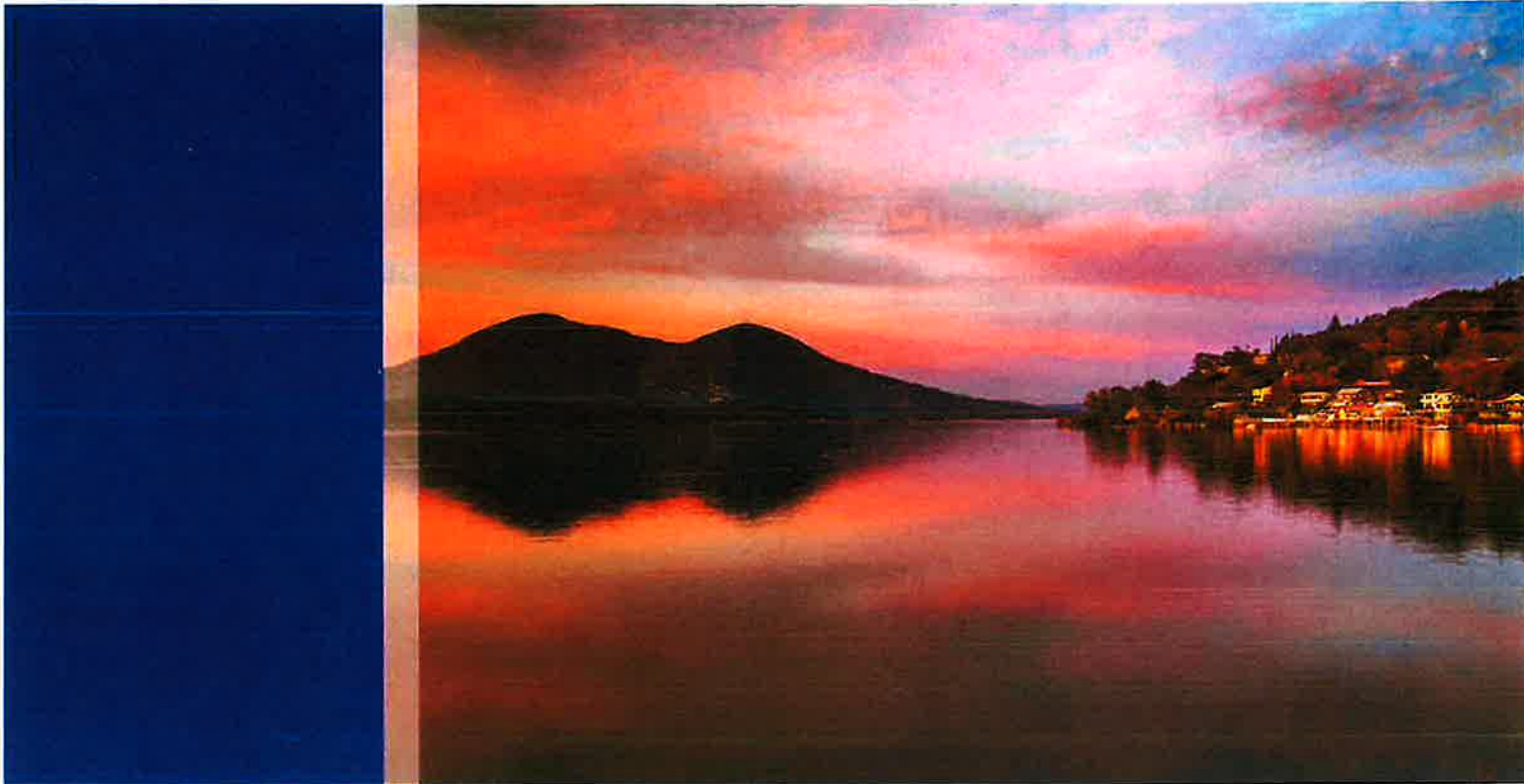
APPROVED AS TO FORM:

Lloyd Guintivano  
County Counsel

By: 

Date: 05/18/2026

**EXHIBIT "A" – Scope of Work & Timeline**



**GEOPHYSICAL  
IMAGING  
PARTNERS**

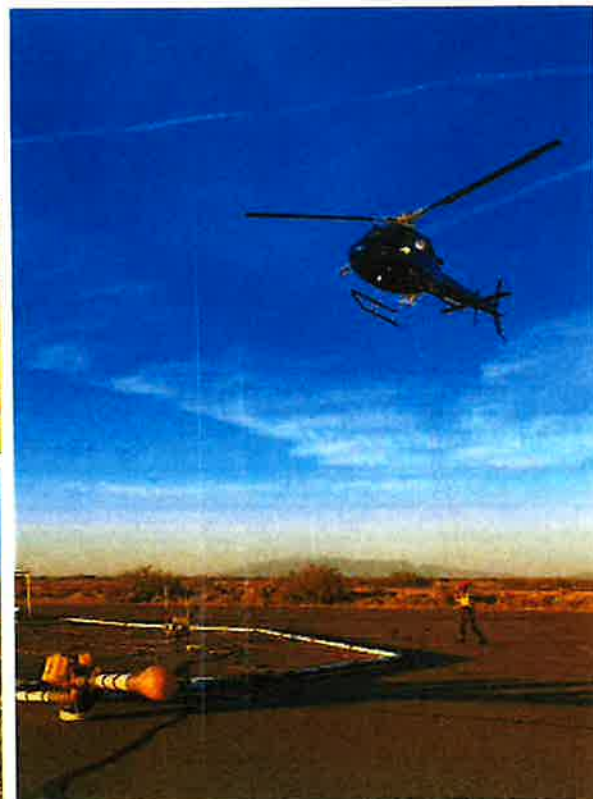


**Luhdorff &  
Scalmanini**  
Consulting Engineers

## **Airborne Electromagnetic (AEM) Survey of Lake County's Groundwater Basins**

County of Lake, Water Resources Department

NOVEMBER 7, 2025





**GEOPHYSICAL  
IMAGING  
PARTNERS**

Geophysical Imaging Partners Inc.  
261 Gladys Dr.  
Pleasant Hill, CA 94523

November 7, 2025

GIP Q23035 | LSCE 25-2-177

County of Lake  
Water Resources Department  
Attn: Stephen Carter  
255 N. Forbes Street  
Lakeport, CA 95453

**SUBJECT: Proposal to Provide AEM Surveys of Lake County Groundwater Basins (RFP No. 261451)**

Dear Mr. Carter,

Geophysical Imaging Partners (GIP) and Luhdorff & Scalmanini Consulting Engineers (LSCE), together with SkyTEM Surveys (SkyTEM), are pleased to submit this proposal for Airborne Electromagnetic (AEM) Surveys in Lake County. SkyTEM will conduct the physical surveys, and GIP and LSCE (GIP Team) will provide survey design, data processing and inversion, hydrogeologic interpretation, integration with existing datasets, and reporting services in accordance with RFP No. 261451.

The GIP Team offers a streamlined solution with no learning curve, allowing us to hit the ground running. Our team has been working together for over a decade on AEM-supported hydrogeologic characterization projects throughout California. More importantly, we have extensive and direct experience working within Lake County groundwater basins, including Big Valley, Scotts Valley, Coyote Valley, Upper Lake, Long Valley, and surrounding areas. This familiarity with the County's hydrogeologic conditions, data history, stakeholder environment, and basin-specific nuances enables us to move efficiently from project kickoff to meaningful interpretation – reducing schedule, reducing risk, and increasing the value of the final products.

Our proposed project team includes Ahman-Ali Behroozmand, Max Halkjaer, and Eddy Teasdale, along with staff who have worked together integrating AEM data with traditional groundwater datasets since the earliest AEM applications in California. The GIP Team's workflow merging AEM results with monitoring well data, lithologic logs, water quality records, water budgets, and geologic models is proven and repeatable, supporting decision-ready hydrogeologic products for local and regional water management.

A key benefit of selecting the GIP Team is that the people who complete the work also own the firms. Both GIP and LSCE are privately held and led by hydrogeologists and geophysicists who directly deliver the technical work. This results in:

- Senior-level, ownership-level engagement throughout the project
- Continuity of staff from kickoff through final deliverables (no handoffs, no substitutions)
- Flexibility to pivot as project needs evolve, without the corporate approvals of multi-layer management structures
- A focus on client outcomes, not shareholder returns or utilization targets.

Additionally, LSCE's long-term presence in Lake County and the Northern Sacramento Valley ensures continued availability and long-term support beyond immediate efforts, including assistance with planning, implementation, and adaptive management if needed.

In summary, the GIP Team provides:

- No learning curve and immediate familiarity with Lake County conditions
- Established workflows that integrate AEM results into actional groundwater tools
- Ownership-level commitment and continuity of staffing
- A focus on locally beneficial outcomes, not corporate or shareholder priorities.

We appreciate the opportunity to continue supporting Lake County in advancing high-resolution groundwater understanding and management, and we look forward to the next steps. Please feel free to contact our proposed Project Manager, Ahmad-Ali Behroozmand, PhD, PGP, at 415-430-7173 or [ahmad@geophysicalimaging.com](mailto:ahmad@geophysicalimaging.com) should you have any additional questions about our proposal or our proposed team.

Sincerely,



Ahmad-Ali Behroozmand, PhD, PGP  
Senior Geophysicist | Co-founder  
Geophysical Imaging Partners



Eddy Teasdale, PG, CHG  
Principal Hydrogeologist/Vice President  
Luhdorff & Scalmanini, Consulting Engineers



## **Table of Contents**

---

1. Company Profile .....	2
History, Services, and Qualifications .....	2
History of Collaboration and Relevance to Lake County .....	3
Executive Summary .....	3
2. Work Plan .....	4
Project Understanding.....	4
Approach .....	5
Scope of Services.....	16
Proposed Implementation Schedule .....	21
3. Cost Proposal (separate file).....	22

# 1. Company Profile

## History, Services, and Qualifications

**Geophysical Imaging Partners (GIP)** was established with the primary mission of delivering cutting-edge geophysical services in a timely, efficient, and scientifically rigorous manner. We partner with water agencies, consulting firms, and research institutions to support every phase of geophysical data acquisition, processing, inversion, interpretation, and integration. Our team members hold advanced degrees in geophysics and have extensive experience applying airborne, ground-based, waterborne, and borehole methods to groundwater investigations, with particular specialization in Airborne Electromagnetic (AEM) Surveys. GIP's Max Halkjaer was a co-founder of SkyTEM Surveys, the leading company in the groundwater AEM market. Both Max and Ahmad previously served as senior geophysicists at Ramboll, where they led large-scale AEM groundwater investigations and helped develop geophysical data processing, inversion, and decision support workflows used internationally. Through this work, they saw firsthand the challenges associated with large firm structures – particularly bureaucratic delays, staff turnover, shifting priorities, and the difficulty of ensuring that senior technical experts remain closely engaged in project execution. GIP was founded to specifically solve those challenges. GIP staff have also contributed to instrument development, geophysical workflow design, and the development of inversion and data-analysis software. Staff have also published numerous peer-reviewed scientific journal articles related to groundwater.

### GIP SERVICES

- Survey design and planning
- Data acquisition, processing & inversion, and interpretation
- Hydrogeological model integration

GIP has played key roles in various projects in California over the past few years, including serving as Project Director and the local AEM Geophysicist for the DWR Statewide AEM project (until December 2022), which also covered the Lake County area, and as Project Lead and Research Scientist on the Stanford Groundwater Architecture project, GAP. Additionally, GIP staff members on the GIP Team (while working for Ramboll) were the geophysicists who managed both the AEM SkyTEM and ground-based tTEM surveys in the Upper Lake area for Robinson Rancheria.

**Luhdorff & Scalmanini, Consulting Engineers (LSCE)** was founded in 1980 in response to a recognized need for technical and management expertise in groundwater-resource development and its efficient utilization. A consulting and services organization, LSCE provides public and private entities with hydrogeologic and civil engineering services focused on the investigation, development, use, protection, and management of groundwater resources throughout California and Idaho. LSCE's staff includes experts in hydrogeologic investigations, monitoring, production well design, site characterization, well construction and testing, well rehabilitation, water resources management, permitting, groundwater modeling, pump selection and pump station design, geographic information systems (GIS), database design, and AutoCAD drafting. Our multidisciplinary team of hydrogeologists, geologists, and engineers brings broad expertise in groundwater resources, municipal water production facilities, and data management systems.

### LSCE SERVICES

- Groundwater Resources Management
- Modeling
- Wells and Pump Stations
- Water Treatment, Storage, and
- Distribution Data Management Systems

- **SkyTEM Surveys** is a leading airborne electromagnetic (AEM) survey company with extensive experience in the collection and delivery of high-quality AEM data. The SkyTEM system is globally recognized as the most precise and, most importantly, the only calibrated Time Domain Electromagnetic Airborne Electromagnetic (TDEM AEM) system. The SkyTEM system was specifically developed to map groundwater and subsurface geology with high resolution. Since its introduction, SkyTEM has completed more than 1,700,000 line kilometers of AEM surveying worldwide across groundwater, environmental, and mining projects. SkyTEM surveys are particularly well-

regarded for identifying aquifers, mapping hydrostratigraphy, and supporting managed aquifer recharge, water-supply planning, and saltwater intrusion investigations. SkyTEM has been used extensively in the United States, including major groundwater programs throughout California for state agencies, counties, and water districts. These surveys have supported groundwater basin characterization, SGMA compliance, and managed aquifer recharge, among others.

## History of Collaboration and Relevance to Lake County

**The GIP team has worked together for over a decade on groundwater basin characterization projects that integrate AEM data with traditional hydrogeologic datasets.** This long-standing collaboration eliminated the learning curve typical of newly formed project teams and resulted in efficient planning, data acquisition, inversion, and interpretation workflows. The team has direct experience in Lake County and existing knowledge of basin conditions, data gaps, stakeholder context, and operational logistics, enabling the team to optimize survey coverage, reduce mobilizations, and accelerate delivery of actionable results.

**The GIP Team has established long-term working relationships with DWR, geophysical contractors, and regional water agencies through its involvement in multiple AEM planning, acquisition, and interpretation projects statewide.** These experiences have refined our team's ability to integrate AEM results with traditional hydrogeologic datasets, supporting management-ready outcomes. The GIP Team's depth of experience in AEM planning and interpretation ensures efficient, high-quality data collection and analysis that can be directly applied to Lake County's basin characterization and management goals. A summary of relevant experience, as well as representative project descriptions, are provided in **Appendix B**.

## Executive Summary

The GIP Team offers Lake County a proven, efficient, and cost-effective approach to improving subsurface understanding across the County's priority basins. Together, the team brings:

- Advanced airborne and ground-based geophysical capabilities
- Deep hydrogeologic interpretation expertise, including HCM and water budget refinements
- Long-standing experience working in Lake County's groundwater basins

The project will build upon existing studies and datasets, compiling and standardizing all hydrogeologic information into a GIS-based, basin-wide data framework. The SkyTEM AEM system will be deployed to map lithologic structure, aquifer geometry, and recharge pathways, with ground-based methods where aerial acquisition is not feasible.

All AEM and accompanying datasets will be processed, inverted, and integrated into three-dimensional hydrogeologic conceptual models (HCMs) that will provide a clear understanding of groundwater flow, connectivity, and storage. Results will be summarized in a comprehensive technical report and communicated through presentations to the County staff, the Board, and stakeholders.

The project team will be led by Dr. Ahmad-Ali Behroozmand, with senior guidance from Max Halkjaer and Eddy Teasdale, supported by a multidisciplinary group specializing in AEM survey design, hydrogeological analysis, groundwater budget development, and geospatial data management. Engagement with County staff, tribal partners, and stakeholders will ensure results are technically defensible, transparent, and directly aligned with groundwater management and sustainability priorities.

## 2. Work Plan

### Project Understanding

The County aims to enhance the characterization of groundwater and surface water resources within several of its priority basins, thereby improving the informed decision-making process for future water management, planning efforts, and potential project development. While some data exists, several basins remain only partially understood, which limits the County's ability to assess current conditions, interconnections, and long-term sustainability.

The following basins have been identified as areas of interest for further evaluation (Figure 1):

- Middle Creek
- Upper Lake Valley
- Scott's Valley
- Long Valley
- High Valley
- Big Valley (excluded from the RFP)
- Collayomi Valley
- Coyote Valley

Among these, Upper Lake Valley has already been the focus of prior AEM work conducted in collaboration with the Robinson Rancheria Pomo Indians, in which GIP Team members participated. This effort produced a valuable geophysical dataset that can be leveraged to:

- Reduce the need for new data collection and thereby minimize project costs;
- Provide a reference framework for comparative analysis with adjacent or hydrogeologically similar basins; and
- Support the refinement of conceptual hydrogeologic models for the region.

Accordingly, the GIP Team proposes that the focus of the current effort be directed toward the remaining basins, those without prior AEM or equivalent investigations, to:

- Characterize aquifer extent, lithology, and potential recharge zones;
- Identify key data gaps that may influence water management decisions;
- Develop recommendations for future data collection or monitoring; and
- Support the County in prioritizing basins for additional study or potential project development.

While Big Valley has also been the focus of a prior AEM survey, it was not as thoroughly covered and could benefit from an additional survey to fill in gaps. Big Valley has been included in this proposal to address County comments in the response to questions and offer options for the County's consideration.



Figure 1. Basins identified for AEM Investigations

## Approach

### Overview

---

The GIP Team will implement a comprehensive and phased approach to support the County in improving the characterization of its groundwater resources across the targeted basins. Our approach integrates existing datasets, applies advanced analytical tools, and leverages our team's prior experience in the County to deliver cost-effective, actionable outcomes. The core principles that guide our project approach include:

**Build on Existing Investments** – Use prior AEM, geologic, and groundwater data to maximize efficiency, minimize redundancy, and ensure that new work builds upon the County's prior investments.

Leverage LSCE's prior hydrogeologic characterizations, data compilations, and conceptual model development in **Scotts Valley, Long Valley, Collayomi Valley, and Coyote Valley** to establish a solid technical foundation for refining basin-scale understanding and guiding future data collection priorities.

The GIP Team's support of the development of the original technical basis and funding strategy for the County's **Blue Ribbon Committee Grant** provides the team with in-depth familiarity with County objectives, stakeholder coordination, and DWR grant administration requirements.

Prior GIP Team experience supporting coordination between County staff, DWR, and AEM contractors during **AEM planning in Scotts Valley** provides valuable insight into survey design, data resolution, and integration methods that can be directly applied to future basin investigations.

This GIP Team contributed to both the preparation and ongoing implementation of the **Big Valley Groundwater Sustainability Plan (GSP)**, deepening the Team's understanding of local hydrogeologic conditions, data management frameworks, and SGMA compliance strategies relevant to neighboring basins.

**Collaborate Locally** – Work closely with County staff, tribal partners, and local stakeholders to ensure that data collection and interpretations are locally relevant, technically defensible, and publicly accepted.

**Deliver Decision-Ready Results** – Provide clear, technically sound products that directly support near-term and long-term County planning, funding applications, and policy development.

### Implementation Strategy

---

The GIP Team's overall approach will include the key components outlined below. The specific approach for each basin may be adjusted to meet local needs and address basin-specific issues related to survey limitations, data availability, and other factors. Our initial assessment of the approach for each basin is included below.

- Compile, review, and cross-reference existing hydrogeologic datasets (well logs, AEM, groundwater levels, and water quality data).
- Identify and prioritize data gaps critical to defining aquifer extent, recharge potential, and connectivity between subbasins.
- Use GIS and 3D subsurface visualization tools to integrate historical datasets with new field information.
- Develop updated conceptual hydrogeologic models to guide future monitoring, recharge, and management strategies.
- Collaborate with local stakeholders and tribal entities to align technical work with community and cultural values.

## SURVEY INTRODUCTION

Hydrogeophysical methods have become essential tools in hydrogeological investigations, providing quantitative insights into subsurface conditions that are otherwise difficult or impossible to obtain through direct measurements. These methods are increasingly used to support aquifer characterization, delineate hydrogeological structures, and assess the extent and quality of groundwater resources, including fresh and brackish/saline water.

A wide range of airborne and ground-based geophysical techniques is available for groundwater investigations. Each method is designed to measure specific physical properties, such as electrical resistivity, magnetic susceptibility, density, or seismic velocity, which are linked to hydrogeological parameters. These methods can be deployed from various platforms, including fixed-wing aircraft, helicopters, ground vehicles, or fixed surface arrays, depending on the site conditions and project objectives.

Recent advancements in instrumentation and data processing algorithms have significantly improved the performance, resolution, and efficiency of geophysical surveys. Cutting-edge systems now enable cost-effective, high-density data acquisition over large and even remote areas. These have enabled the conduct of regional-scale mapping while maintaining the level of detail necessary for hydrogeological interpretation.

Among the most powerful tools for aquifer characterization is airborne time-domain electromagnetics (Airborne TEM; AEM). Advantages of airborne methods include:

- Rapid data acquisition over large areas.
- No access permission is required.
- Cost-effective compared to dense ground surveys.
- Non-invasive with no environmental impact.

Ground-based geophysics is typically conducted on a more local scale where detailed information is needed or where AEM surveys are not feasible, such as over built-up areas or confined areas (short flight lines), or when the budget is limited.

## AIRBORNE ELECTROMAGNETICS (AEM) SURVEY

The AEM survey method proposed for this project is a time-domain or transient electromagnetic method, commonly referred to as TEM. A TEM measurement consists of inducing electrical currents into the subsurface and receiving Earth's response over a short period of time. Each measurement is called a *sounding*. The AEM system consists of a transmitter loop, a receiver coil, electronic instrumentation, and several auxiliary devices. **Figure 2** illustrates the principles of the AEM survey method.

AEM surveys with the SkyTEM system from SkyTEM Surveys are the recommended approach. SkyTEM is globally recognized as the most precise and only calibrated TDEM AEM system. SkyTEM has been extensively used worldwide, including in California, and was utilized during the DWR statewide survey project. The GIP team has partnered with SkyTEM in numerous projects and also contributed to the development of both hardware (one of the team members was a co-founder of SkyTEM Surveys) and data analysis software.



*The SkyTEM system in operation during a recent AEM survey conducted in California*

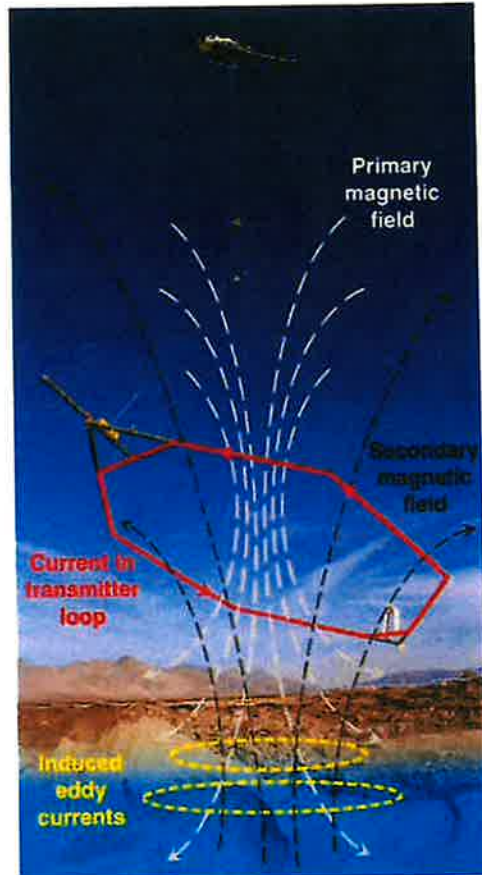
Our proposed SkyTEM306HP system, specifically designed for groundwater investigations, is a dual-moment system that offers high-resolution near-surface information while also providing information down to a depth of 200-300 meters (700-1,000 feet) below ground surface. In addition to the TEM data, the system measures magnetic data and a suite of auxiliary data, including flight altitude and differential GPS data. The instruments are mounted on a frame, suspended approximately 40 meters below the helicopter, and powered with a generator. The SkyTEM system records data continuously while flying at a speed of 50-60 mph (80-100 kph). During the operation, the frame's height is 30-50 meters (100-160 feet) above the terrain.

During the survey, it is essential to maintain a safe distance from residential areas (for safety) and from man-made conductors and installations, such as power lines, buried power cables, railroads, and metal barriers along roads, due to the potential for disturbance. Data recorded near such objects will create electromagnetic noise, rendering the data unusable and, in some cases, introducing a bias signal that can lead to misleading resistivity models. While planning the final AEM flight lines, consideration will be given to the presence of man-made installations to minimize disturbance.

## Basin Selection

The main aquifer units throughout Lake County are discontinuous due to the geologic history. Topographical low points were filled in with stream, lake, and volcanic deposits, leaving isolated areas of water-bearing material. The geologic setting, data availability, data needs, cost, and other considerations for each basin will require discussion with the County to better prioritize survey efforts and methods. **Figure 3** provides an overview of publicly available data for each subbasin.

In collaboration with SkyTEM Surveys, the GIP team reviewed the basins to assess where AEM surveys can be conducted. Basin background information and initial proposed flight lines are presented below as applicable. Based on this preliminary review, the GIP Team offers the following basin recommendations as a starting point for discussion. Please note that the proposed lines are preliminary and have not undergone a detailed logistical assessment.



**Figure 2. AEM Survey Schematic**

The current in the transmitter loop (red) generates primary magnetic fields (dashed white) that travel into the ground and induce subsurface signal (called eddy currents, shown in yellow), which in turn generate secondary magnetic fields (dashed black) that are picked up by the system receiver (white tower in the back of the frame).

Courtesy of DWR. Illustration prepared by GIP.

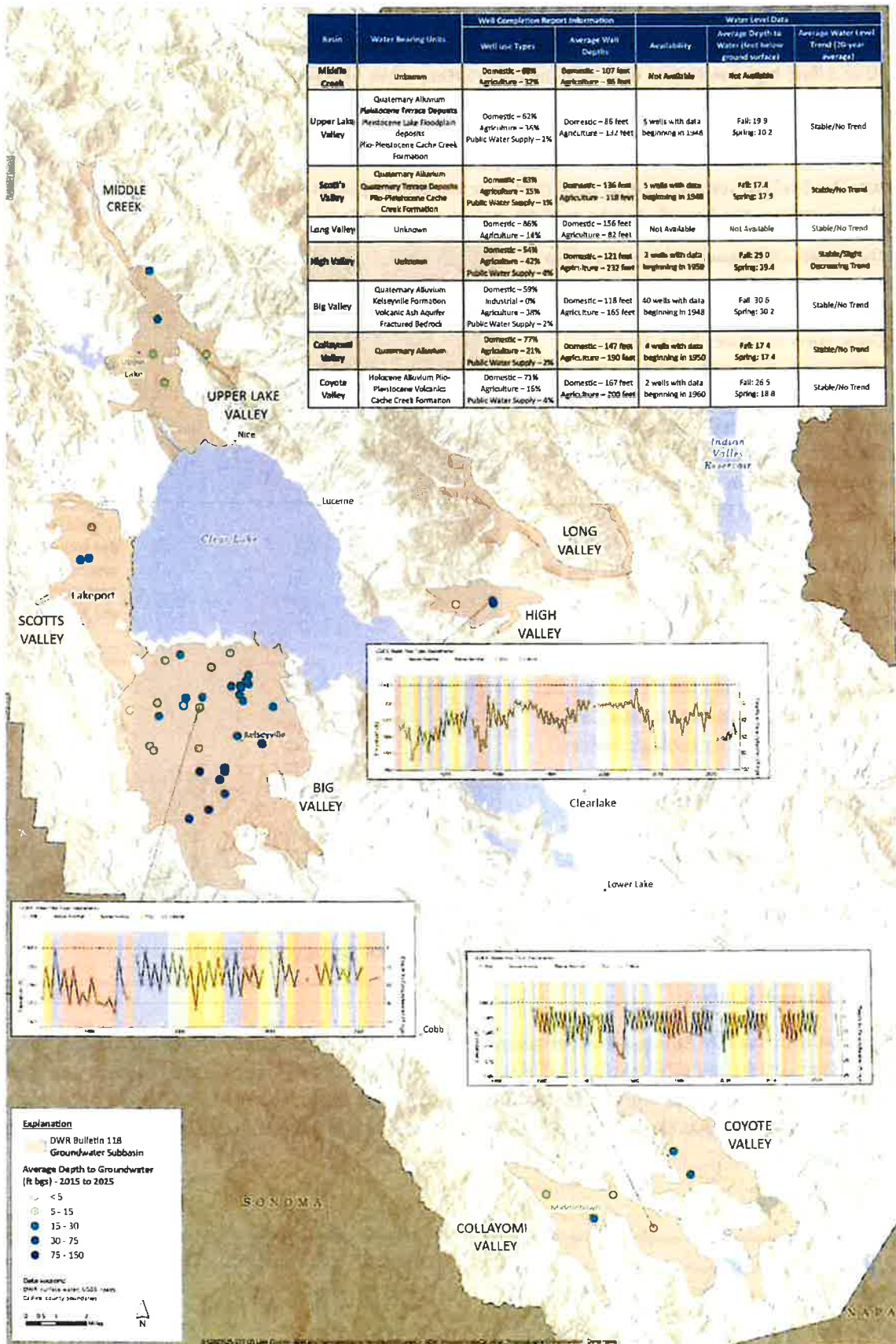


Figure 3. Groundwater Conditions in Lake County Groundwater Subbasins

### Upper Lake Valley

- The basin has already been covered by dense AEM (SkyTEM) survey lines.
- Additional ground-based tTEM survey lines were carried out on the hillside.
- No additional surveying is recommended.

### Scotts Valley

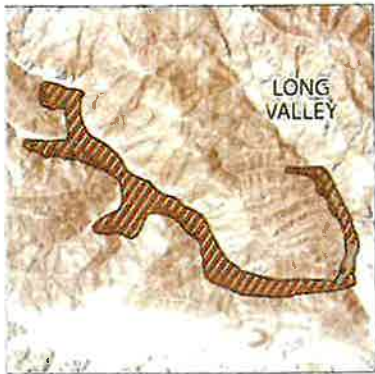
- A significant part of the basin is an urban area. An AEM survey was planned to be carried out three years ago. Unfortunately, the pilot found it too difficult to fly the area; as a result, the survey never took place.
- It is recommended to revisit the possibility of covering the eastern part of the area using AEM.
- If this is not possible, ground-based surveying along one or more profiles is recommended.

### Big Valley

- During the statewide AEM survey, a few sparsely spaced AEM lines were carried out.
- It is recommended to consider a few additional AEM survey lines in the basin where there are data gaps.

### Long Valley, High Valley, Coyote Valley, Collayomi Valley, and Middle Creek

- AEM survey lines at a 250-meter (approx. 820-foot) line spacing oriented perpendicular to the main geological strike direction are proposed.
- Some of the lines are relatively short. It is recommended that the final flight path be optimized, as the short lines are relatively expensive.



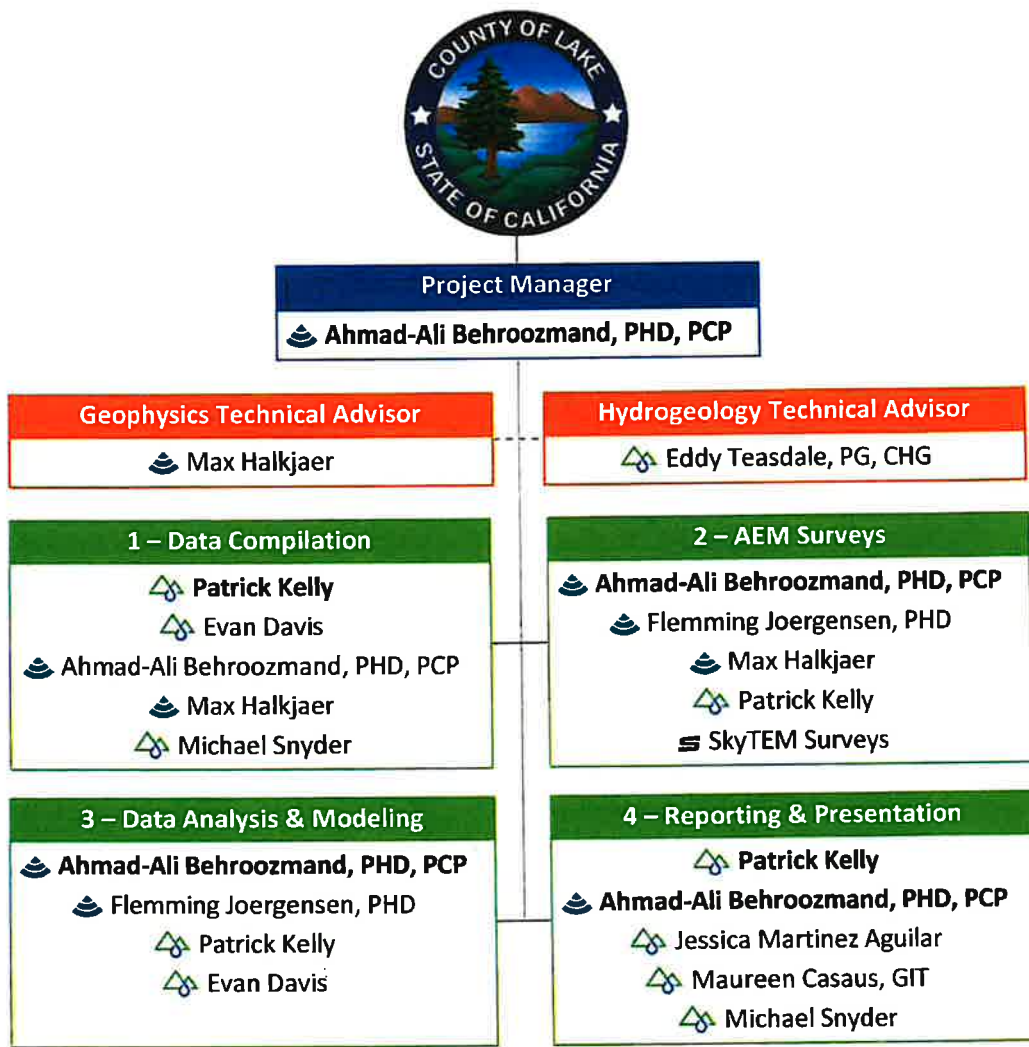
## Anticipated Challenges

Like any complex, multi-basin investigation, this project will inevitably present a range of technical and logistical challenges. To proactively plan for success, the GIP Team has identified several anticipated challenges, along with targeted strategies to address each, and outlined the resulting benefits these solutions will bring to the County.

Challenge	GIP Team Approach	Benefits to the County
<b>Limited data availability in smaller valleys (e.g., High Valley, Long Valley)</b>	Integrate AEM results with existing well logs, lithologic data, and targeted field reconnaissance to develop high-confidence conceptual models.	Minimizes the need for costly new field investigations while improving understanding of basin geometry and groundwater conditions.
<b>Varying data quality and format from prior studies</b>	Compile and standardize all datasets within a County-wide GIS platform, applying QA/QC protocols and metadata tracking for consistent interpretation and long-term usability.	Creates a centralized, well-documented hydrogeologic database that supports future planning, modeling, and grant applications.
<b>Coordination across multiple basins, agencies, and stakeholders</b>	Leverage GIP Team's existing relationships from the Blue Ribbon Committee process and prior AEM coordination efforts to guide early stakeholder engagement and maintain consistent communication throughout the project.	Strengthens collaboration, builds transparency, and facilitates efficient decision-making across jurisdictions.
<b>Balancing technical complexity with limited County resources</b>	Implement a phased work plan that prioritizes data synthesis and gap analysis first, producing early deliverables that directly inform future funding pursuits and focused investigations.	Ensures timely, actionable results while aligning project scope with available funding and staffing capacity.
<b>Integrating AEM with traditional hydrogeologic datasets</b>	Apply LSCE's and GIP's extensive AEM collaborative experience on the Scotts Valley, Tehama, and Westlands projects to interpret geophysical layers alongside well and geologic data using proven workflows.	Maximizes the value of existing AEM investments and enhances subsurface mapping accuracy for County-wide resource planning.
<b>Potential Survey Limitations</b>	Closer Coordination with the SkyTem Pilot and Field Team, use of ground-based geophysics to supplement AEM coverage, integration with existing hydrogeologic data to fill Non-AEM Gaps	Continuous basin-scale interpretation, reduced uncertainty, more accurate refinement of the HCM, more reliable water budget components, cost control, and fewer mobilizations.

## Key Team Member Roles

We have assembled a highly qualified team with deep experience in AEM integration, hydrogeologic interpretation, and groundwater basin characterization. The project will be led by Dr. Ahmad-Ali Behroozmand, who has over 17 years of experience in designing, executing, and interpreting AEM surveys for groundwater applications. Max Halkjaer, GIP Co-founder, and Eddy Teasdale, Vice President and Principal Hydrogeologist with LSCE, will provide senior advisory support in project management, technical strategy, and coordination. Notably, Eddy worked extensively in Lake County’s groundwater basins for nearly 15 years, supporting groundwater assessment, monitoring network design, well siting, and groundwater sustainability planning. Key technical staff supporting the project: Flemming Joergensen (GIP), Patrick Kelly, Evan Davis, and Michael Snyder (LSCE), with additional subject matter specialists available as needed. The organizational chart below illustrates the team structure and primary roles. Resumes outlining each key team member’s relevant project experience are included in **Appendix A**.



**Bold** = Task Lead



**Ahmad Ali Behroozmand, PHD, PGP, Project Manager, AEM Survey and Data Analysis & Modeling Lead and Reporting Co-Lead (GIP):** Ahmad has more than 17 years of professional experience in the development and application of airborne, ground-based, and logging geophysical methods for subsurface characterization. He has been involved in numerous groundwater-related projects worldwide, including those in California, in compliance with the SGMA program. These projects include the DWR State-wide Airborne Electromagnetics (AEM) Survey Project and the Stanford Groundwater Architecture Project (GAP). He has experience managing projects, as well as the acquisition, processing and inversion, and interpretation of airborne and ground-based geophysical data. Ahmad's work has focused on different applications, including large-scale groundwater basin characterizations, local-scale subsurface characterization, assessment of managed aquifer recharge sites, interpretation of geophysical results, and integration of geophysical and hydrogeological data, among others.

He has experience in hydrogeophysics research, which has been published in peer-reviewed scientific journals and presented at numerous conferences. He has also taught university courses at both the graduate and undergraduate levels, advised students, and served as an editor and reviewer for scientific journals.



**Max Halkjaer, Geophysics Technical Advisor and Data Compilation and AEM Survey Support (GIP):** Max has extensive experience in airborne and ground-based geophysical surveys, including AEM, Mag, Gamma-ray Spectrometer, ERT, GCM, tTEM, FloaTEM, and other methods, and 29 years of expertise in groundwater management, with a focus on the application of geophysical techniques. He has served as Project Director and Principal Geophysicist for the Department of Water Resources' (DWR) statewide Airborne Electromagnetic (AEM) survey. He also managed two of the three pilot studies under the Stanford Groundwater Architecture Project (GAP), where he led efforts to integrate AEM data with borehole information to develop robust Hydrogeologic Conceptual Models (HCMs).

As a researcher, he developed time-domain electromagnetic (TEM) instrumentation and software for data processing and inversion. In 2004, he co-founded SkyTEM Surveys, a leading AEM manufacturing and survey company, and served as Managing Director until 2012. During this time, he led numerous large-scale AEM and ground-based projects focused on groundwater mapping across North America, Australia, Southeast Asia, and Europe.

---



---

**Eddy Teasdale, PG, CHG, Hydrogeology Technical Advisor (LSCE):** Eddy has over 24 years of experience working on geological and hydrogeological investigations in the United States and internationally (England, Ireland, North Africa, and Guam). Over the past decade, Eddy has worked extensively in Lake County supporting groundwater assessments, monitoring network development, well siting and design, water budget refinement, and basin-scale conceptual model improvement in Big Valley, Scotts Valley, Coyote Valley, Upper Lake Valley, and Long Valley. This work has included developing technical analyses for GSP- and GWMP-related planning, pilot testing managed aquifer recharge and ASR feasibility, collaborating with Tribal governments, and coordinating closely with County staff, well owners, and regional stakeholders. Eddy's experience in the County provides him with a strong understanding of local priorities, basin-specific hydrogeology, data availability, regulatory context, and stakeholder expectations, which support efficient project execution and meaningful interpretation of AEM and related datasets.

Eddy has extensive experience preparing technical reports, presenting findings to advisory boards, councils, and community groups, and working collaboratively with local, state, and federal regulatory agencies to resolve project issues and advance groundwater management goals.

Since 2006, Eddy has also served as a Subject Matter Expert for the California Professional Geologist (PG) and Certified Hydrogeologist (CHG) licensing exams through the California Department of Consumer Affairs. In this role, he contributes to exam development, review, grading, and appeals. Participation on this six-member panel is by invitation only and reflects demonstrated technical expertise and a longstanding history of applied hydrogeologic experience.



---

**Flemming Joergensen, PHD, AEM Survey, Data Analysis, and Modeling Support (GIP):** During 27 years of experience, Flemming has contributed significantly to the development and application of methods for groundwater mapping, geological characterization, and 3D geological modeling. He has a strong track record in the geological interpretation of geophysical datasets, particularly electromagnetic (EM) data, including the SkyTEM system and, more recently, the tTEM system. He has also pioneered the development of numerous data interpretation and modeling approaches and participated in the development of GeoScene3D – a 3D hydrogeological modeling software package.

Flemming has provided consulting and advisory services to a broad range of clients, including government agencies, water companies, geological surveys, and private-sector companies, supporting their groundwater resource management projects.

---



---

**Patrick Kelly, Data Compilation Lead and Reporting Co-Lead (LSCE):** Patrick is an experienced hydrologist with over 15 years of experience in water right allocation, well construction design and inspection, water measurement, and water resource consulting services. Well construction experience comes from both administrative and client-focused oversight. As an agent of the Idaho Department of Water Resources, he issued well drilling permits, decommissioned abandoned wells, and provided Oversight to ensure that wells were constructed in accordance with the state's rules and regulations.

As a hydrologist in the private sector, he designs new and replacement wells, including sizing boreholes, casing, and screen diameters based on system demand and understanding of aquifer supply. Oversight of well construction operations was required to provide drillers with well specifications based on anticipated aquifer conditions and characteristics. Geologic logging of drill cuttings and sample collection for lab sieving provided valuable insight into water-producing zones. Well tests are required as part of the public water supply permitting with the Idaho Department of Environmental Quality, which involves testing a well's flow rate and drawdown over a 24-hour period. Specific capacity was calculated, and the Cooper-Jacob method was used to estimate long-term drawdown projections. He is proficient in using ArcGIS and water measurement equipment. Patrick has a proven track record as a project manager.



---

**Evan Davis, GIT, Data Compilation, Analysis, and Modeling Support (LSCE):** Evan has six years of consulting experience supporting groundwater sustainability planning and implementation efforts across California, including in Lake County. His work includes developing and refining hydrogeologic conceptual models, establishing Sustainable Management Criteria, designing and implementing SGMA-compliant monitoring networks, preparing water budgets, assisting with fee studies, and preparing annual and five-year GSP reports. In Lake County, Evan has supported GSP implementation activities such as:

- Designing and expanding groundwater monitoring networks
- Supporting the development and refinement of basin water budgets
- Participating in technical advisory discussions with County staff and local partners
- Assisting with multi-completion monitoring well installation to support long-term groundwater sustainability tracking

Across these efforts, he has contributed technical analysis, technical report writing, public and advisory board meeting support, and coordination with DWR and local agencies.



---

**Michael Snyder, Data Compilation and GIS Support (LSCE):** Michael has 14 years of experience in cartographic production, standards and templates development, GPS systems, database integration with GIS, SQL query design, geodatabase design, CAD integration with GIS, data analysis, and utilizing ArcGIS Online and Portal to develop web and mobile solutions. He has extensive software experience in the Esri ArcGIS suite, Esri ArcGIS Pro, Esri Collector and Field Maps, Esri ArcGIS Online and Portal, Esri Survey 123, Trimble TerraSync, Trimble PathFinder Office, Golden Software Surfer, and Google Earth. He has supported projects across various disciplines and business sectors, including Energy Generation and Transmission, Environmental Remediation, Environmental Planning, Geotechnical Engineering, Civil Engineering, Cultural Resources, Biological Resources, and Water Resources.

---



**Jessica Martinez Aguilar, Reporting and Presentation Development Support (LSCE):** Jessica is a recent graduate with hands-on experience in hydrologic and hydrogeologic sciences, both in the field and office. Her background includes conducting well inventories and groundwater monitoring, performing aquifer testing and data analysis, and interpreting lithologic logs and trends in groundwater levels. She has supported the development of hydrogeologic conceptual models and contributed to projects assessing recharge potential and groundwater–surface water interactions.

Jessica’s strong analytical and technical skills support a range of projects involving GIS mapping, hydrogeologic analysis, and technical documentation. She has helped develop, evaluate, and implement GSPs, applying her knowledge of SGMA compliance to identify data gaps and recommend solutions. Her work includes preparing maps and analyses of well density, water quality, groundwater levels, recharge areas, and groundwater-dependent ecosystems. Experience with the Yuba County Water Agency provides her with valuable insight into groundwater management, stakeholder engagement, and regulatory coordination.



**Maureen Casaus, GIT, Reporting and Presentation Development Support (LSCE):** Maureen is a geologist with two years of experience in groundwater and environmental investigations, with a growing focus on basin-scale hydrogeology and SGMA implementation. Her background includes coordinating and conducting field investigations involving the collection of soil, groundwater, pore water, and soil vapor samples to support site characterization and groundwater quality assessments. She has overseen soil boring operations and monitoring well installations, preparing detailed lithologic and boring logs to document subsurface conditions.

Maureen’s work increasingly supports SGMA-related efforts, where she assists in compiling and interpreting groundwater data, reviewing well completion reports, and developing maps and analyses that inform basin characterization and sustainable management strategies. She has also prepared permit applications and Health and Safety Plans for well installation and sampling activities, and contributes to technical deliverables, including field investigation reports, work plans, and analytical summaries, which are used to communicate findings to clients, regulatory agencies, and the public.

---

## Scope of Services

### Task 1 – Hydrogeologic Data Compilation

#### TASK 1.1 – DATASET COMPILATION

LSCE will compile all existing hydrogeologic datasets relevant to the five groundwater basins selected for the AEM study. The work will include locating, obtaining, and reviewing available well completion reports, lithologic logs, geophysical logs, groundwater level data, aquifer tests, and other records from the County of Lake, California Department of Water Resources (DWR), U.S. Geological Survey (USGS), and other public or private sources.

Each dataset will be reviewed for accuracy, completeness, and relevance to the AEM study. LSCE will screen the data for quality, noting any inconsistencies or missing information, and will digitize high-quality lithologic and geophysical logs in a standardized format suitable for GIS integration. The goal of this task is to establish a comprehensive dataset that supports subsurface characterization and integration with the AEM inversion and modeling results.

During this process, LSCE will document all data sources and establish metadata for each dataset, including attributes such as well identification, location accuracy, stratigraphic coding, and data reliability. This documentation will ensure that all datasets are traceable, reproducible, and ready for future updates or use by the County and project partners.

#### Task 1.1 – County Expectations

- The County will review the assembled dataset to verify that it reflects known information and priorities.

#### Task 1.1 – Assumptions

- The GIP Team will lead the collection, screening, and digitization of available well, lithologic, and geophysical data and develop a GIS-compatible database. The County may provide datasets or access to existing data repositories as available.

- No new field data collection is required as part of this task.

#### Task 1.1 – Deliverables

- Compiled and quality-assured dataset of hydrogeologic, lithologic, and geophysical data.
- Technical memorandum summarizing data sources, screening methods, coverage, and identified data gaps.

#### TASK 1.2 – DATABASE DEVELOPMENT

Following the compilation of the dataset, LSCE will develop a comprehensive, spatially referenced database to organize the compiled hydrogeologic data. Using ESRI ArcGIS Pro, LSCE will design a standardized geodatabase schema that aligns with AEM contractor data formats and future groundwater modeling requirements.

The database will include well locations, stratigraphic information, aquifer designations, lithologic coding, and associated geophysical and hydrologic attributes. Each record will be spatially linked to enable geostatistical analysis and visualization. LSCE will integrate data from multiple sources into consistent coordinate systems and formats, ensuring compatibility across platforms and with AEM inversion data.

The database will undergo quality checks to confirm spatial accuracy, attribute consistency, and completeness. LSCE will provide metadata documentation describing the database structure, field definitions, data sources, and QA/QC procedures. The resulting product will serve as a foundational tool for subsequent hydrogeologic interpretation, 3D conceptual model development, and sustainable groundwater management efforts.

#### Task 1.2 – County Expectations

- The County's role will be limited to reviewing the final database for general alignment with existing data systems

### Task 1.2 – Assumptions

- Database structure and field schema will be coordinated with the AEM contractor to ensure data interoperability.
- Develop a GIS-compatible database that integrates all compiled hydrogeologic datasets for ease of access and spatial analysis.

### Task 1.2 – Deliverables

- GIS-compatible hydrogeologic database with full metadata documentation.

## Task 2 – Planning and Execution of AEM Surveys

Each geophysical investigation has four primary phases. The first two phases, planning and field operations (i.e., survey execution), are included in this task. The remaining phases are discussed in **Tasks 3.1 and 3.3**.

### TASK 2.1 – SURVEY PLANNING (PHASE I: PLANNING)

Every method has its strengths and limitations. Therefore, it is essential to select the most appropriate technique/system for a given hydrogeological setting. In collaboration with the client and other project partners, we begin by clarifying project objectives, evaluating different approaches through forward modeling and sensitivity analyses, and envisioning expected outcomes. This initial phase also involves reviewing existing geophysical data, borehole logs, and conceptual models from the study area or an area with comparable hydrogeological settings to select the most suitable method. Phase I is also the step where the expected outcome of the planned investigation is discussed with the client, often supported by forward model studies, which can be used to predict the depth of investigation and what structures can be resolved. Survey planning tasks include:

1. Proposed flight lines will be finalized with respect to line spacing, line direction, and the areas to be covered. The AEM line spacing and flight direction are key factors to consider in this task. Lines that cross built-up areas will

be either skipped or moved. Lines running parallel to and close to power lines, railroads, and other man-made installations will be omitted. The revised flight lines will be shared and approved by the client.

2. The helicopter company and SkyTEM surveys will review the planned flight lines to check if there are areas with sensitive fauna, human activities in the area that require special attention, and/or activities in the airspace (e.g., activities near airports, drones, and skydivers).
3. Logistical planning, including securing a local landing site, fuel, and, if required, specific permits.
4. A detailed Health and Safety plan will be prepared prior to mobilization for each survey, which is tailored to the specific survey method being used.

### Task 2.1 – County Expectations

- Identify potentially sensitive areas.
- Review and comment/approve draft survey flight lines.

### Task 2.1 – Assumptions

- Lines that cross built-up areas will be either skipped or moved.
- Lines running parallel to and close to power lines, railroads, and other man-made installations will be omitted.

### Task 2.1 – Deliverables

- Draft survey flight lines
- Final survey flight lines
- A detailed Health and Safety Plan

### TASK 2.2 – SURVEY IMPLEMENTATION (PHASE II: FIELD OPERATIONS)

During fieldwork, data quality is checked daily, and a daily progress report is shared with the County. Initial results will be shared and compared to the expected outcome. The planned survey program can be adjusted to reflect the initial findings.

Each survey will be completed using the following general process.

1. The field crew will consist of a pilot, a helicopter technician, a field manager, and a field assistant. The helicopter will fly to the area, while the remaining crew members will arrive in a dedicated vehicle.
2. During the first two days of fieldwork, the AEM system will be assembled, tested on the ground, and then tested at high altitude.
3. During the survey, the helicopter will typically fly for about 2-1/2 hours. For each flight, we recommend re-flying a line close to the landing site, with a length of approximately 1km, to demonstrate that the data and the processing/inversion scheme are accurately repeated from flight to flight. The production per flight is highly dependent on the distance from the landing site to the survey area, the terrain, and obstacles within the area. A typical production rate is 100-150 line km per flight.
4. On a daily basis, the data will be quality-controlled by a SkyTEM geophysicist and by a GIP geophysicist. This includes checking line coverage, flight height, ground speed, transmitter currents, system tilt, EM signal, and magnetic data. A daily QC report will be developed and shared with the client.
5. At the end of the survey and before mobilizing from the site, the GIP geophysicist will review the entire data set. If all data are satisfactory based on this initial QC review, approval is granted to the SkyTEM field crew and the helicopter crew to demobilize from the site.

#### Task 2.2– Assumptions

- The AEM system tests on the ground and at high altitudes before beginning production flights.

#### Task 2.2– Deliverables

- Daily QC Reports

## Task 3 – Data Assimilation, AEM Processing, and Inversion

### TASK 3.1 – DATA PROCESSING AND REPORTING (PHASE III)

AEM Data Processing and Inversion includes:

- SkyTEM surveys will typically deliver the final raw data within 6-8 weeks after the last day of flying.
- The first- and most time-consuming task is manual inspection of all EM data, removal of data that are contaminated by noise from electrical installations and/or other man-made metal installations. During data processing, an interactive GIS map is used to locate the positions of all data and assess unexpected features in the data.
- The next step is the inversion of the data, where the measured voltage data are turned into either 2D electrical resistivity models along the flight lines or 3D resistivity models where all data are tied together and modelled as one large data set. The inversion models are carefully inspected to ensure a good fit between the models' response and the acquired data.
- Then the resistivity models are plotted as vertical sections and mean resistivity plan-view maps at different depth intervals.
- Initial interpretation of the hydrogeologic conditions.

#### Task 3.1 – County Expectations

- County staff will participate in data review meetings

#### Task 3.1 – Assumptions

- SkyTEM Survey delivers the final raw data within 6-8 weeks after the last day of flying.

#### Task 3.1 – Deliverables

- Presentation of the inversion results.
- Initial interpretation of the hydrogeologic conditions.

### TASK 3.2 – PRELIMINARY ANALYSIS

The GIP Team will conduct a series of preliminary basin analyses to develop a deeper understanding of groundwater conditions and system behavior across the project area. This will include evaluating water demands, major groundwater use sectors, pumping patterns, and seasonal variability using available datasets such as production reports, land use mapping, crop duty estimates, and metered withdrawal data, where available. These analyses will help identify spatial and temporal demand trends, improving the understanding of groundwater stress, sustainability indicators, and long-term supply considerations.

In parallel, the GIP Team will assess natural recharge processes and basin water balance components by reviewing streamflow records, precipitation and climate datasets, soil and landscape data, and existing hydrologic studies. These data will be integrated to develop or refine basin water budget components, including estimates of recharge, discharge, lateral inflows/outflows, and storage changes. Where AEM results or other geophysical data identify stratigraphic or structural controls on recharge potential, these insights will be incorporated to refine preliminary recharge and flowpath interpretations.

The GIP Team will also conduct a preliminary review of groundwater quality conditions using available water quality datasets and any recent sampling programs to identify areas of concern, emerging trends, and data gaps. Combined with the water budget and demand analysis, these findings will help prioritize areas where further field investigation, enhancements to the monitoring network enhancements, or targeted study may be warranted. The results of this preliminary analysis will be summarized in a technical memorandum that will guide subsequent phases of basin characterization and management planning.

#### Task 3.2 – County Expectations

- Participate in brief check-in meetings to confirm that preliminary findings align with local knowledge and priorities.

- Provide high-level review and feedback on draft results; no technical analysis or data processing is required.

#### Task 3.2 – Assumptions

- No new field data collection (e.g., sampling, monitoring well installation, or flow measurements) is included in this task.
- Water budget estimates will be developed using existing datasets and published methods, and will be refined further in later phases as AEM interpretation and updated basin characterization results become available.
- Any data provided by the County or partner agencies is assumed to be complete and accurate to the best of their knowledge.
- Meetings will be held virtually, unless otherwise agreed upon.

#### Task 3.2 – Deliverables

- Preliminary Basin Analysis Technical Memorandum
- Summarizes water demand evaluation, natural recharge assessment, and preliminary basin water budget components.
- Identifies key groundwater quality considerations, spatial trends, and emerging issues.
- Highlights data gaps and prioritized recommendations for additional monitoring or targeted investigations.

### TASK 3.3 – 3D HYDROGEOLOGIC CONCEPTUAL MODEL (HCM) (PHASE IV INTERPRETATION)

The final and most important phase of each project is the interpretation of results. Borehole data (e.g., geophysical and lithologic logs, water quality) and results from existing geophysical surveys, along with geological information, are integrated with the project data to achieve a comprehensive interpretation.

This task involves the Interpretation of aquifers and aquitards based on AEM resistivity models and existing boreholes, and outlining the extent of different hydrogeologic units.

### Task 3.3 – County Expectations

- County staff will participate in data review meetings.

### Task 3.3 – Assumptions

- SkyTEM Survey delivers the final raw data within 6-8 weeks after the last day of flying.
- Complementary data are provided by the time the team starts this task.

### Task 3.3 – Deliverables

- 3D HCM database and layer exports in various formats.

## Task 4 – Reporting and Presentation

### TASK 4.1 – REPORT PREPARATION

Upon completion of the AEM data collection, processing, and interpretation phases, the GIP Team will prepare a thorough, clearly written report that summarizes all technical work, interprets hydrogeologic conditions, and provides actionable recommendations for groundwater management. The report will document the methods used for data compilation, database development, and AEM analysis, as well as the results of the hydrogeologic interpretation.

The report will describe each basin's hydrogeologic framework, including identified aquifer units, confining or semi-confining layers, groundwater flow characteristics, and potential recharge and discharge areas. The GIP Team will include an assessment of hydrogeologic conditions and any observed spatial patterns in transmissivity or aquifer properties. The report will also identify data gaps, uncertainties, and areas recommended for future investigation or monitoring.

### Task 4.1 – County Expectations

- The County and project partners will provide a single consolidated set of review comments on the draft report.

### Task 4.1 – Deliverables

- Draft report for County review and comment.
- Final report summarizing methods, findings, and recommendations.
- Digital data deliverables (raw data, processed data, workspace, GIS files, Google Earth KMZ).

### TASK 4.2 – PRESENTATION

LSCE will prepare and deliver presentations summarizing study objectives, methods, and key results to County staff and the Board of Directors. Presentations will include visual aids such as maps, cross sections, and conceptual diagrams to communicate complex hydrogeologic information clearly and accessibly.

LSCE will coordinate with County staff to finalize presentation content and ensure consistency with the report findings. One public presentation and one formal presentation to the Board will be provided, with additional support as needed for County outreach materials.

### Task 4.2 – County Expectations

- Participate in public presentations summarizing project outcomes.

### Task 4.2 – Assumptions



- Presentation content and schedule will be coordinated with County staff.

### Task 4.2 – Deliverables

- Final PowerPoint presentation summarizing project findings and recommendations.

## Proposed Implementation Schedule

The GIP Team is prepared to begin work on this project immediately upon notice to proceed. The assembled project Team members have the experience to gauge workload and commitments to other projects effectively. Prior to preparing this proposal, Team members reviewed the scope of work described in the RFP, current workloads, and current project schedules and confidently concluded that GIP and LSCE can manage, staff, and complete the project in the schedule presented below. GIP will update the project schedule monthly to reflect the actual project progress, identify any issues that are or could potentially impact the project schedule, and implement measures to mitigate project delays, ensuring that the project is completed within twelve months. If selected, the GIP Team can provide a more detailed schedule in consultation with the County.

Task	12 Month Project Term
Task 1 – Hydrogeologic Data Compilation	
Task 2 – Planning and Execution of AEM Surveys	
Task 3 – Data Assimilation, AEM Processing, and Inversion	
Task 4 – Reporting and Presentation	

---

## 3. Cost Proposal

---

Provided as a separate file.

**AGREEMENT FOR PROFESSIONAL SERVICES FOR THE AIRBORNE  
ELECTROMAGNETIC (AEM) SURVEY OF LAKE COUNTY'S GROUNDWATER  
BASINS**

**EXHIBIT "B" – FISCAL PROVISIONS**

1. **CONSULTANT'S FINANCIAL RECORDS.** CONSULTANT shall keep financial records for funds received hereunder, separate from any other funds administered by CONSULTANT, and maintained in accordance with Generally Accepted Accounting Principles and Procedures and the Office of Management and Budget's Cost Principles.

2. **INVOICES.** CONSULTANT'S invoices shall be submitted throughout the project or in arrears on a monthly basis, and shall be itemized and formatted to the satisfaction of the DISTRICT.

DISTRICT shall make payment within 20 business days of an undisputed invoice for the compensation stipulated herein for supplies delivered and accepted or services rendered and accepted, less potential deductions, if any, as herein provided. Payment on partial deliverables may be made whenever amounts due so warrant or when requested by the CONSULTANT and approved by the Assistant Purchasing Agent.

3. **AUDIT REQUIREMENTS AND AUDIT EXCEPTIONS.** CONSULTANT warrants that it shall comply with all audit requirements established by DISTRICT and will provide a copy of CONSULTANT 'S Annual Independent Audit Report, if applicable.

DISTRICT may conduct periodic audits of CONSULTANT'S financial records, notifying CONSULTANT no less than 48 hours prior to scheduled audit. Said notice shall include a detailed listing of the records required for review. CONSULTANT shall allow DISTRICT, or other appropriate entities designated by DISTRICT, access to all financial records pertinent to this Agreement.

CONSULTANT shall reimburse DISTRICT for audit exceptions within 30 days of written demand or shall make other repayment arrangements subject to the approval of DISTRICT.

4. **BUDGET.** CONSULTANT shall submit, in advance, a detailed budget, in the format provided by DISTRICT for review and approval by the DISTRICT. CONSULTANT shall be compensated only for expenses included in the approved budget. Modification to the budget must be approved in advance by the DISTRICT.

5. **EXPENDITURE OF FUNDS.** Funds payable through this agreement shall not be used to purchase food or promotional merchandise or to attend conferences unless specifically approved in the budget.

**AGREEMENT FOR PROFESSIONAL SERVICES FOR THE AIRBORNE  
ELECTROMAGNETIC (AEM) SURVEY OF LAKE COUNTY'S GROUNDWATER  
BASINS**

DISTRICT reserves the right to refuse payment to CONSULTANT or disallow costs for any expenditure determined to be unreasonable, out of compliance, or inappropriate to the services provided hereunder.

**AGREEMENT FOR PROFESSIONAL SERVICES FOR THE AIRBORNE  
ELECTROMAGNETIC (AEM) SURVEY OF LAKE COUNTY'S GROUNDWATER  
BASINS**

**EXHIBIT "C" – COMPLIANCE PROVISIONS**

1. **INFORMATION INTEGRITY AND SECURITY.** CONSULTANT shall immediately notify DISTRICT of any known or suspected breach of personal, sensitive and confidential information related to CONSULTANT work under this Agreement.

2. **NON-DISCRIMINATION.** CONSULTANT shall not unlawfully discriminate against any qualified worker or recipient of services because of race, religious creed, color, sex, sexual orientation, national origin, ancestry, physical disability, mental disability, medical condition, marital status or age.

3. **DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS.** CONSULTANT certifies to the best of its knowledge and belief, that it and its subcontractors:

A. Are not presently debarred, suspended, proposed for disbarment, declared ineligible, or voluntarily excluded from covered transactions by any federal department or agency;

B. Have not, within a three-year period preceding this Agreement, been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public transaction; violation of federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

C. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity with commission of any of the offenses enumerated in the preceding paragraph; and

D. Have not, within a three-year period preceding this Agreement, had one or more public transactions terminated for cause or default.

CONSULTANT shall report immediately to DISTRICT, in writing, any incidents of alleged fraud and/or abuse by either CONSULTANT or CONSULTANT'S subcontractor. CONSULTANT shall maintain any records, documents, or other evidence of fraud and abuse until otherwise notified by DISTRICT.

4. **AGREEMENTS IN EXCESS OF \$100,000.** CONSULTANT shall comply with all applicable orders or requirements issued under the following laws:

4.1 Clean Air Act, as amended (42 USC 1857).

**AGREEMENT FOR PROFESSIONAL SERVICES FOR THE AIRBORNE  
ELECTROMAGNETIC (AEM) SURVEY OF LAKE COUNTY'S GROUNDWATER  
BASINS**

- 4.2 Clean Water Act, as amended (33 USC 1368).
- 4.3 Federal Water Pollution Control Act, as amended (33 USC 1251, et seq.)
- 4.4 Environmental Protection Agency Regulations (40 CFR, and Executive Order 11738).

**5. INDEMNIFICATION AND HOLD HARMLESS.** Each party shall indemnify and hold the other harmless against all actions, claims, demands, and liabilities and against all losses, damage, cost, expenses, and attorney's fees, arising directly or indirectly out of an actual or alleged injury to a person or property in the same proportion that its own acts and/or omissions are attributed to said claim, demand, liability, loss, damage, cost, expenses, and/or attorney's fees. This provision shall not extend to any claim, demand, liability, loss, damage, cost, expenses, and/or attorney's fees covered by the insurance of either party.

CONSULTANT'S obligations under this Section shall survive the termination of the Agreement.

**6. STANDARD OF CARE.** CONSULTANT represents that it is specially trained, licensed, experienced and competent to perform all the services, responsibilities and duties specified herein and that such services, responsibilities and duties shall be performed, whether by CONSULTANT or designated subcontractors, in a manner according to generally accepted practices.

**7. INTEREST OF CONSULTANT.** CONSULTANT assures that neither it nor its employees has any interest, and that it shall not acquire any interest in the future, direct or indirect, which would conflict in any manner or degree with the performance of services hereunder.

**8. DUE PERFORMANCE – DEFAULT.** Each party agrees to fully perform all aspects of this agreement. If a default to this agreement occurs then the party in default shall be given written notice of said default by the other party. If the party in default does not fully correct (cure) the default within thirty (30) days of the date of that notice (i.e. the time to cure) then such party shall be in default. The time period for corrective action of the party in default may be extended in writing executed by both parties, which must include the reason(s) for the extension and the date the extension expires.

Notice given under this provision shall specify the alleged default and the applicable Agreement provision and shall demand that the party in default perform the provisions of this Agreement

**AGREEMENT FOR PROFESSIONAL SERVICES FOR THE AIRBORNE  
ELECTROMAGNETIC (AEM) SURVEY OF LAKE COUNTY'S GROUNDWATER  
BASINS**

within the applicable time period. No such notice shall be deemed a termination of this Agreement, unless the party giving notice so elects in that notice, or so elects in a subsequent written notice after the time to cure has expired.

9. **INSURANCE.** CONSULTANT shall procure and maintain Workers' Compensation Insurance for all of its employees.

CONSULTANT shall procure and maintain Comprehensive Public Liability Insurance, both bodily injury and property damage, in an amount of not less than one million dollars (\$1,000,000) combined single limit coverage per occurrence, including but not limited to endorsements for the following coverage: personal injury, premises-operations, products and completed operations, blanket contractual, and independent CONSULTANT'S liability.

CONSULTANT shall procure and maintain Professional Liability Insurance for the protection against claims arising out of the performance of services under this Agreement caused by errors, omissions or other acts for which CONSULTANT is liable. Said insurance shall be written with limits of not less than one million dollars (\$1,000,000).

CONSULTANT shall not commence work under this Agreement until it has obtained all the insurance required hereinabove and submitted to DISTRICT certificates of insurance naming the Lake County Watershed Protection District as additional insured. CONSULTANT agrees to provide to DISTRICT, at least 30 days prior to expiration date, a new certificate of insurance.

In case of any subcontract, CONSULTANT shall require each subcontractor to provide all of the same coverage as detailed hereinabove. Subcontractors shall provide certificates of insurance naming the County of Lake as additional insured and shall submit new certificates of insurance at least 30 days prior to expiration date. CONSULTANT shall not allow any subcontractor to commence work until the required insurances have been obtained.

For any claims related to the work performed under this Agreement, the CONSULTANT'S insurance coverage shall be primary insurance as to the DISTRICT, its officers, officials, employees, agents and volunteers. Any insurance or self-insurance maintained by DISTRICT, its officers, officials, employees, agents or volunteers shall be in excess of the CONSULTANT'S insurance and shall not contribute with it.

The Commercial General Liability and Automobile Liability Insurance must each contain, or be endorsed to contain, the following provision:

The DISTRICT, its officers, officials, employees, agents, and volunteers are to be covered as additional insureds and shall be added in the form of an endorsement to CONSULTANT'S insurance on Form CG 20 10 11 85. CONSULTANT shall not commence work under this

**AGREEMENT FOR PROFESSIONAL SERVICES FOR THE AIRBORNE  
ELECTROMAGNETIC (AEM) SURVEY OF LAKE COUNTY'S GROUNDWATER  
BASINS**

Agreement until CONSULTANT has had delivered to DISTRICT the Additional Insured Endorsements required herein.

Coverage shall not extend to any indemnity coverage for the active negligence of the additional insured in any case where an agreement to indemnify the additional insured would be invalid under subdivision (b) of California Civil Code Section 2782.

Insurance coverage required of CONSULTANT under this Agreement shall be placed with insurers with a current A.M. Best rating of no less than A: VII.

Insurance coverage in the minimum amounts set forth herein shall not be construed to relieve the CONSULTANT for liability in excess of such coverage, nor shall it preclude DISTRICT from taking other action as is available to it under any other provision of this Agreement or applicable law. Failure of DISTRICT to enforce in a timely manner any of the provisions of this section shall not act as a waiver to enforcement of any of these provisions at a later date.

Any failure of CONSULTANT to maintain the insurance required by this section, or to comply with any of the requirements of this section, shall constitute a material breach of the entire Agreement.

**10. ATTORNEY'S FEES AND COSTS.** If any action at law or in equity is necessary to enforce or interpret the terms of this Agreement, the prevailing party shall be entitled to reasonable attorney's fees, costs, and necessary disbursements in addition to any other relief to which such party may be entitled.

**11. ASSIGNMENT.** CONSULTANT shall not assign any interest in this Agreement and shall not transfer any interest in the same without the prior written consent of DISTRICT except that claims for money due or to become due CONSULTANT from DISTRICT under this Agreement may be assigned by CONSULTANT to a bank, trust company, or other financial institution without such approval. Written notice of any such transfer shall be furnished promptly to DISTRICT. Any attempt at assignment of rights under this Agreement except for those specifically consented to by both parties or as stated above shall be void.

**12. PAYROLL TAXES AND DEDUCTIONS.** CONSULTANT shall promptly forward payroll taxes, insurances, and contributions to designated governmental agencies.

**13. INDEPENDENT CONTRACTOR.** It is specifically understood and agreed that, in the making and performance of this Agreement, CONSULTANT is an independent contractor and is

**AGREEMENT FOR PROFESSIONAL SERVICES FOR THE AIRBORNE  
ELECTROMAGNETIC (AEM) SURVEY OF LAKE COUNTY'S GROUNDWATER  
BASINS**

not an employee, agent or servant of DISTRICT. CONSULTANT is not entitled to any employee benefits. DISTRICT agrees that CONSULTANT shall have the right to control the manner and means of accomplishing the result contracted for herein.

CONSULTANT is solely responsible for the payment of all federal, state and local taxes, charges, fees, or contributions required with respect to CONSULTANT and CONSULTANT'S officers, employees, and agents who are engaged in the performance of this Agreement (including without limitation, unemployment insurance, social security and payroll tax withholding.)

**14. OWNERSHIP OF DOCUMENTS.** All non-proprietary reports, drawings, renderings, or other documents or materials prepared by CONSULTANT hereunder are the property of DISTRICT.

**15. SEVERABILITY.** If any provision of this Agreement is held to be unenforceable, the remainder of this Agreement shall be severable and not affected thereby.

**16. ADHERENCE TO APPLICABLE DISABILITY LAW.** CONSULTANT shall be responsible for knowing and adhering to the requirements of Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act, (42 U.S.C. Sections 12101, et seq.). California Government Code Sections 12920 et seq., and all related state and local laws.

**17. HIPAA COMPLIANCE.** CONSULTANT will adhere to Titles 9 and 22 and all other applicable Federal and State statutes and regulations, including the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and will make his best efforts to preserve data integrity and the confidentiality of protected health information.

**18. SAFETY RESPONSIBILITIES.** CONSULTANT will adhere to all applicable CalOSHA requirements in performing work pursuant to this Agreement. CONSULTANT agrees that in the performance of work under this Agreement, CONSULTANT will provide for the safety needs of its employees and will be responsible for maintaining the standards necessary to minimize health and safety hazards.

**19. JURISDICTION AND VENUE.** This Agreement shall be construed in accordance with the laws of the State of California and the parties hereto agree that venue of any action or proceeding regarding this Agreement or performance thereof shall be in Lake County, California.

**AGREEMENT FOR PROFESSIONAL SERVICES FOR THE AIRBORNE  
ELECTROMAGNETIC (AEM) SURVEY OF LAKE COUNTY'S GROUNDWATER  
BASINS**

CONSULTANT waives any right of removal it might have under California Code of Civil Procedure Section 394.

**20. RESIDENCY.** All independent contractors providing services to DISTRICT for compensation must file a State of California Form 590, certifying California residency or, in the case of a corporation, certifying that they have a permanent place of business in California.

**21. NO THIRD-PARTY BENEFICIARIES.** Nothing contained in this Agreement shall be construed to create, and the parties do not intend to create, any rights in or for the benefit of third parties.