

Statement of Qualifications

ENVIRONMENTAL

Analytical Service, Inc.

The Air Measurement Specialists

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1.0 SUMMARY OF QUALIFICATIONS AND CAPABILITIES

Environmental Analytical Service (EAS Inc.) is an Air Measurement Laboratory that specializes in ambient air, indoor air, source gas analysis, and product testing. EAS was founded in 1985 by Dr. Steven Hoyt and is one of the leading air specialty laboratories with a rich history of innovation in the air-testing field. EAS was audited and selected by EPA to be part of the 1991 Special Analytical Service (SAS) laboratory program and participated in several ambient air and soil gas monitoring projects. Since that time EAS has been involved in many air and gas monitoring projects in California and around the county, for government agencies, environmental consultants, and companies. EAS was audited by the US EPA in 2004 for special contract work for the EPA, and was audited and approved by the US Navy for air testing services in 2005 as part of the Navy Clean Programs. EAS has a full Quality Assurance Program that meets all of the NELAC standards.

The team at EAS is dedicated to providing quality analytical services for all projects. In addition to our standard analytical reports, EAS can provide data deliverable packages, which meet EPA and other requirements for data validation, as well as provide reports and deliverables in most electronic formats. Dr. Steven Hoyt has over 25 years experience in analytical method development, measurement, and interpretation of ambient air data. Dr. Hoyt and his team of trained professionals are here to make sure the analytical services provided by EAS meet all of the client project objectives.

A History of Innovation

Environmental Analytical Service has been providing innovative solutions for air testing since 1985. EAS was the first commercial air-testing laboratory that specialized in using cryotrapping and SUMMA canisters for the measurement of low-level organic compounds in ambient air samples. EAS was the first lab to offer air data deliverable packages (CLP) under the EPA Special Analytical Services (SAS) program. EAS was also the first air lab to offer the EPA 8260 target list of compounds including oxygenated hydrocarbons for air samples, and was the first lab to offer Selected Ion Monitoring (SIM) with method detection limits of 0.005 ppbv for use in ambient air and vapor intrusion samples.

Quality Data

The following sections provide information of the type of analytical testing performed by Environmental Analytical Service. They also describe the personnel, facilities, and Quality Assurance program used to make sure each analytical report contains quality data that is well documented.

2.0 COMPANY DESCRIPTION

Environmental Analytical Service, Inc. (EAS) was founded in 1985 by Dr. Steven D. Hoyt and is a privately held California corporation. Their primary mission is to provide high quality air testing services with outstanding customer service. EAS is located in San Luis Obispo in a modern facility and employs a staff of qualified professionals that are trained in air and gas analysis.

EAS Corporate Mission Statement

We at Environmental Analytical Service, Inc. are a well-trained team dedicated to providing quality state-of-the-art analysis to assist our clients in meeting their project objectives.

Corporate Goals

- Assist the client in selecting the correct standard analytical method or developing a modified method to meet the project objectives, rather than limit the project objectives based on available methods.
- Provide high quality analytical data backed by an extensive QA/QC program that meets all of the NELAC Standards and EPA Contract Laboratory Program (CLP) criteria.
- EAS will provide a standard turnaround time of five to seven days for preliminary results and ten working days for the final report.

3.0 FACILITIES

Environmental Analytical Service, Inc. is located in a modern facility that is dedicated to ambient air and gas analysis. A complete equipment list is shown in Table 3.1. All equipment at EAS is dedicated to air and gas analysis.

Instrumentation Room

EAS has an instrumentation room that has been specially designed to provide a solvent free environment to achieve the low MDL values that EAS is known for. The room has five GC/MS systems with full data processing and NBS mass spectral libraries and six gas chromatographic systems equipped with FID, FPD, PID, and ECD detectors.

Chemistry Lab

The chemistry lab is located next to the analytical lab but is in a separate unit to avoid solvent contamination of the instrumentation room. The chemistry lab is equipped with hoods and an extraction area for handling semi-volatile sample extractions. The chemistry lab also houses the HPLC system used for TO-8 phenols and TO-11 aldehydes and ketones. There is a HP GC/MS system for semi volatile analysis using EPA TO-13 and EPA 8270. The room also contains the GCs that are used for source/refinery process gas analysis.

Sample Control/Sampling Equipment

The Sample Control area houses the 300+ SUMMA canister inventory. In addition to the extensive canister inventory, a complete line of flow controllers, and sampling equipment is available for client projects. All canisters are tracked by the EAS computer system, and all samples are logged into the LIMS System as they are received. This room also houses the canister cleaning system and the pressurization system for measuring and pressurizing the canisters. A refrigerator is provided for storing samples that need to be kept at 4°C for preservation.

Table 3.1 Equipment List

Windows 2000 Computer Network
Windows 2003 Small Business Server
EAS LIMS Software System
HP 5890 II GC with HP 5971 MSD and MS/DOS Chemstation System (2 each)
HP 5890A GC with HP 5970 MSD and MS/DOS Chemstation System (4 each)
HP 5890A GC with FID/ECD/PID
HP 5890A GC with dual FID
HP 5890 II GC with FPD
HP 5890 GC with TCD
HP 3365 Chemstation GC Data System (10 each)
EAS Method 25 Analyzer with Catalysts
Shimadzu HPLC System, with Variable Wavelength Detector
EAS Cryogenic Concentrator Systems (4 each)
AADCO 737 Zero Air Generator
UV/Visible Spectrophotometer
Ion Selective Potentiometer and Electrodes
EAS Model 100 Canister Cleaning Station
Stainless Steel Canisters (350 of 6 different sizes)
NBS Traceable Standards
Commercial Gas Blends
Commercial Neet Standard Mixes
Air Sampling Pumps
Passive Integrated Ambient Air Samplers
Fume Hood for Semi Volatile Organic Extractions
Sartorius Semi Microbalance
Electronics/Mechanical Shop for construction and repair of equipment
Support equipment

4.0 PERSONNEL QUALIFICATIONS

Laboratory Management

Dr. Steve Hoyt received his Master's Degree in Analytical Chemistry from Oregon State University. After graduating, he managed a Water Quality Laboratory for the California Regional Water Quality Control Board, Region 7. He then went to the Oregon Graduate Institute and received his Ph.D. under Professor Rei Rasmussen in the Measurement of Atmospheric Trace Gases. As part of his Ph.D. project, he developed a GC/MS Method for measuring VOC compounds in atmospheric samples collected in SUMMA canisters. This procedure was later developed by EPA into Method TO-14. Dr. Hoyt also developed a method for analyzing reduced sulfur compounds in air at less than 1 ppbv. After leaving the Oregon Graduate Institute, Dr. Hoyt worked as the Technical Director for Coast-to-Coast Analytical (CCAS) in San Luis Obispo, California. He then founded Environmental Analytical Services in 1985 as a laboratory that specializes in the analysis of air and gas samples.

Dr. Steve Hoyt has authored numerous papers on data quality and applications of the TO-14 and TO-15 methods as well as TO-15 SIM, and he has appeared as an expert witness in the field of air testing.

Lisa Hoyt is the Administrative Director and is responsible for the financial, personnel and marketing operations of the laboratory. She has a Masters in Administration and had experience in School Management before working at EAS.

Kristin Beckley is the Laboratory Supervisor at EAS. She has experience in all of the laboratory instrumentation at EAS and has participated in reviewing, updating, and writing of the Standard Operating Procedures for these methods. She is also responsible for the review of all analytical data and oversees the preparation of the analytical reports.

5.0 PROJECT EXPERIENCE

Over the last 25 years EAS has been involved in all types of air, source, and product testing projects. While at the Oregon Graduate Institute, Dr. Hoyt worked under Professor Rasmussen to develop a GC/MS method for the analysis of organic compounds in ambient air using a cryogenic concentrator and a fused silica capillary column. This methodology eventually became Method TO-14 and TO-15. Since this time, Dr. Hoyt has used this expertise to provide innovative methods and approaches to solve client's analytical problems.

EAS has participated and provided project management for several large monitoring projects. Lists of specific projects are available on request. These projects have ranged in size from just a few samples to over 500 samples. EAS has conducted projects for most of the major consulting companies and government agencies. A partial list of clients is show below.

List of Clients

AeroVironment	LA County Sanitation
Arizona DEQ	Louisiana DEQ
BKK Corporation	Levine Fricke Recon
Camp, Dresser & McKee	OHM Remediation
California Air Resources Board	Parsons Engineering Science
California DTSC	Radian
Casmalia Resources	Riverside WRMD
CH2M Hill	San Joaquin Valley Air Pollution Control District
Chevron	Secor / URS Consultants
Dames and Moore	Shell Oil
Ecology and Environment	Tetra Tech
Environ	TRC Environmental
EMCON	US Air Force
ENSR	US Army Corp of Engineers
Fluor Daniel / GTI	US Navy
Foster Wheeler	US EPA Region 4
Harding Lawson Associates	US EPA Region 9
Hong Kong Productivity Council	University of California Davis
Kaiser Cement	URS Consultants

6.0 DESCRIPTION OF ANALYTICAL SERVICES

Environmental Analytical Service is a dedicated air and gas testing laboratory and provides sample analysis for organic compounds by GC and GC/MS using standard EPA/CARB and ASTM Methods. In addition to the standard tests, EAS provides Special Analytical Services by adapting the standard methods for projects that require analytical data outside the range offered by the standard method. EAS provides analytical testing and consulting in the following areas.

Analytical Services

- Ambient Air Analysis for Organic Compounds by EPA TO Methods
- Source Test Samples for Organic Compounds by CARB/EPA Methods
- Refinery Gas and Liquid Samples for Hydrocarbons by ASTM Methods
- Indoor Air Testing using EPA IP Methods
- Product Testing using ASTM D 5116 Small Chamber

Services

- Supply or Develop Air Sampling Equipment
- Flow Controllers for Vapor Intrusion Analysis
- DTS Soil Gas Samplers
- Analytical Method Development
- Consulting on Project Design and Data Interpretation
- Expert Reviewing of Analytical Data
- Preparation of NIST Traceable Gas Standards

Summary of Standard Analytical Methods

Type of Sample	Compound Category	Compounds	Methods
Ambient Air	Volatile Organics VOC	General VOC's	TO-14
			TO-15 Standard
Indoor Air			TO-15 Low Level
Soil Gas			TO-15 Extended
			TO-15 SIM
Vapor Intrusion		Hydrocarbons	TO-3
			TO-12
Landfill Gas			TO-3 DHA
			EPA PAMS
Source Test			EPA M18 Mod
			Aldehydes
		Sulfur Gases	EPA16 Mod
		Siloxanes	TO-15
		Tetraethyl lead	TO-15
			NIOSH 2533
	Gases	Permanent Gases	ASTM 1946
			EPA 3C
		Methane, CO	ASTM 3416
		Tracers	EAS Special
	Semi-Volatile Organics SVOC	General SVOC's	TO-13
		PAH	TO-13
		Pesticides	TO-4A
		Pesticides	TO-10A
		Phenols	TO-13
			TO-8
		Diesel DRO	TO-13
	TO-17		
	Inorganics	Ammonia	NIOSH 6015
		Cyanide	NIOSH 7904
		Hydrogen Halides	EPA 26
	Particulates	TSP	NIOSH 0500
		PAH	TO-13

7.0 QUALITY ASSURANCE PROGRAM

One of the goals at Environmental Analytical Service is to provide the customer with quality analytical data that meets or exceeds the project objectives. To obtain this objective, EAS has a full Quality Assurance Program and Quality Manual that was prepared using the NELAC, Chapter 5, 2003 guidelines.

The EAS Quality Manual contains a detailed description of instrument calibration, traceability of laboratory standards, data storage, data review, and reporting. The Quality Manual also has tables listing the quality control criteria used for each routing test performed at EAS. This information is available to the client before the start of the project. Any deviations are reviewed with the client and included in the analytical report case narrative. In addition to the Quality Manual, there are complete documented Standard Operating Procedures for all analytical methods and laboratory tasks.

EAS has been audited and approved by the US EPA as part of their Special Analytical Services Program (SAS), which was part of the EPA Contract Lab Program (CLP) back in 1991. This document has also been reviewed and the laboratory audited over the years by EPA, ENSR, Radian, California DOHS, Texas TNRCC, U.S. Army Corp of Engineers, and the DOD under the Department of the Navy. In 2003 and again in 2005, the Department of the Navy audited EAS which included a site visit, review of the Quality Manual, review of the SOP's, and other laboratory documentation. In 2004, the EPA audited EAS with a site visit and review of the Quality Manual and Standard Operating Procedures.

Air testing laboratories and methods have only recently been audited and certified. In California, for example, there is no ELAP Certification for air testing laboratories or methods. Since it was established in 1985, EAS has participated in project-specific audits conducted by companies and government agencies. These include ENSR, Radian, Texas TNRCC, EPA Special Analytical Services Program, U.S. Army Corp of Engineers, and most recently the Department of Navy. The EPA and Navy audits occurred from 1999 to 2008.

NELAP-National Environmental Laboratory Accreditation Program. Since 2007 EAS has been certified for Air Testing by the state of New Jersey under the NELAP Program. ELAP Certification Number CA013.