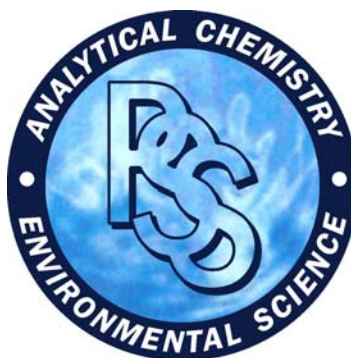


# Phase Separation Science, Inc.



## Statement of Qualifications

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# **INTRODUCTION**

## ***INTRODUCTION***

Phase Separation Science, Inc. (PSS) is a certified environmental analytical testing laboratory with expertise in a broad range of testing applications for organic and inorganic parameters. Our professional staff offers over 100 years of combined experience in the field of environmental compliance services. Our first priority is to provide the highest quality analytical services available, in the timeliest manner in the industry. To accomplish this, we utilize technologically advanced, state-of-the-art analytical instrumentation and approved procedures.

PSS was established in 1989 on the principle of offering our clients personalized laboratory services with close project management coordination. We emphasize attention to detail and accuracy from sample receipt to final report submission. Our approach has resulted in steady growth and recognition in the industry. PSS unerringly maintains its commitment to customer satisfaction with continued rapid turnaround and personalized customer attention.

The PSS laboratory staff includes degreed analysts and environmental scientists, specifically trained in the analytical field and always available to provide detailed technical assistance. Our qualifications, as well as our dedication and emphasis to customer service, has enabled us to establish sincere, long-term working relationships with our clientele.

# **CERTIFICATIONS**

## ***CERTIFICATIONS***

PSS maintains accreditations for organic and inorganic parameters in Maryland, Delaware, Virginia and West Virginia. In addition, having served as a contract laboratory for both the State of Maryland Laboratories Administration, the Maryland Department of the Environment and the Government of the District of Columbia, PSS has the recognition and confidence of all local regulatory agencies. PSS is also certified by the U.S. Department of Agriculture to import foreign soils for overseas projects.

- Maryland Department of Health & Mental Hygiene, State of Maryland Water Quality Laboratory, Certification #1379. Reciprocity agreements in Delaware.
- West Virginia – Certification #303
- Virginia – Certification #296
- Pennsylvania Registered Laboratory – Certification #68-3330
- U.S. Department of Agriculture Foreign Soil Permit – Certification #S-76772

# **QUALITY ASSURANCE**

## ***QUALITY ASSURANCE***

The Quality Assurance/Quality Control at Phase Separation Science, Inc. is maintained by a management control system designed to accompany each sample throughout the analytical process.

### **Sample Custody**

Each sample(s) and/or project(s) received by PSS is compared to its chain-of-custody (COC) and examined to insure that all required information is available and the samples meet the criteria necessary to perform the analytical process. In the event that there is a discrepancy with the provided information, or sample integrity, a notation explaining the nature of the discrepancy will be made on the Sample Receipt Checklist and the client shall be contacted regarding the matter.

Every project is logged with a Laboratory Work Order Number, a numerical designation which is discrete for the given project. The work order number appears on each Certificate of Analysis (COA), as well as the sample data, if applicable. All samples are maintained in the appropriate conditions, as defined by documented EPA analytical protocol.

### **Sample Extraction/Analysis**

Samples are extracted and/or analyzed in accordance to procedures described in documented EPA methods or, where suitable for superior data, method modifications based on client needs and/or analytical expertise. Specifically, adherence to SW-846, Standard Methods, CFR, ASTM, and Standard Operating Procedures is maintained for each analysis where applicable.

Samples are typically analyzed in conjunction with blanks, internal or external standards, surrogates, laboratory control standards, matrix spikes, and continuing calibration standards to monitor both analyst and instrument performance.

## **Instrument Maintenance**

In order to maintain the stability of analytical instruments, preventative maintenance is performed and recorded in the LIMS instrument log. The instrument log also contains details pertaining to any symptom or malfunction of each instrument and the corrective action taken. Service contracts and/or an adequate supply of replacement parts are maintained to provide analytical testing capability.

Analytical instruments are operated according to the manufacturer's recommendations. The analysis of calibration standards is used to observe instrument conditions on a daily basis. Historical instrument data are retained to evaluate effectiveness of repairs and instrument degradation.

## **Computerized Electronic Data Downloads (EDD)**

Electronic deliverables are available in a number of formats. Additionally, electronic deliverables may be custom formatted to meet client content or format requirements.

These requirements must be defined and agreed upon prior to the commencement of project work. Laboratory generated data is thoroughly reviewed prior to preparation of electronic or diskette deliverables. Files are e-mailed to a client or sent on a CD if preferred.

## **Report Generation**

Outliers or other abnormal values are carefully scrutinized, and samples are reanalyzed if the abnormalities cannot be explained. In cases where results from spiked samples suggest interference, attempts are made to resolve the interference problem, or alternate analytical procedures may be used with client approval. If the interference problem cannot be resolved, it is annotated on the report. Reports and electronic deliverables may be customized to meet project requirements during the pre-project planning discussion with the PSS Project Manager.

## **Validatable Data Package Deliverables**

PSS is able to perform analyses according to specific federal or state program requirements and provide full data packages or “CLP-like” deliverable formats for non-CLP parameters which can be validated by the EPA, state or corporate QA concerns. Additionally, data packages may be provided in corporate or third-party data-validator specific report formats as defined for project specific concerns.

# **PROFESSIONAL PROFILES OF SENIOR STAFF MEMBER**

## ***QUALIFICATIONS OF KEY PERSONNEL***

### **John G. Richardson**

#### ***President and Technical Director***

Mr. Richardson is the founder of Phase Separation Science, Inc. and a respected leader in the environmental services community. He graduated with an Associates degree in Chemical Technology & Toxic Waste Management with high honor from Catonsville Community College. He continued his education at Towson State University and obtained his Bachelors degree with high honors in Chemistry with a dual major of Environmental Science in 1988.

His training and background are specific to the utilization of state-of-the-art analytical instrumentation for strategic methodology and in-depth interpretation of chemical analysis. He has interfaced a complex array of GC, GC/MS, ICP/MS and analytical instrumentation with advanced computer capabilities to develop the most reliable and efficient analytical data analysis systems in the industry. Mr. Richardson has also developed systems exceeding the capabilities of existing methods in order to meet the needs of valued clients. These unique capabilities provide Phase Separation Science, Inc. with a broad base of technical expertise combined with practical experience. Thus, PSS's clients are assured of the most advanced analytical technology available.

John has served for federal grand jury proceedings and has been entered as an expert analyst. He also serves as a quality assurance manager for data generated at the laboratory.

**John A. Slowikowski**  
***Vice President***

Mr. Slowikowski has over thirty years of environmental monitoring and regulatory experience. He graduated from the University of Maryland with a Bachelors degree in Environmental Science. His continuing education has included a variety of training seminars and symposiums hosted by colleges and universities in the Mid Atlantic region. Additionally, he has attended, as well as presented papers at a variety of Environmental Protection Agency (EPA) environmental monitoring, and Society of Environmental Toxicologist and Chemists (SETAC) conferences.

His work experience includes ten years of educational monitoring and research work involving the Chesapeake Bay and its tributaries. This experience includes a wide variety of cooperative projects with the EPA, U.S. Fish and Wildlife Service and University of Maryland.

Additionally, he has over three years of experience in a regulatory capacity with the Maryland Department of the Environment (MDE) and the U.S. National Park Service. As program coordinator for the Maryland Department of the Environment's Hazardous and Solid Waste Management Administration, he was given the Department's Award of Merit for the program he developed for addressing toxicity in surface water discharges.

In the private sector, he served for five years as the general manager of a full service environmental laboratory owned by the largest testing and inspection company in the world. He joined Phase Separation Science as Vice President in 1995.

**Dan Prucnal**  
***Laboratory Manager and Deputy Technical Director***

Mr. Prucnal serves as Phase Separation Science's Laboratory Manager. In this capacity he draws upon his vast experience as an operator of a variety of analytical instruments including GC (ECD, FID, PID, ELCD), GC/MS, HPLC and IC. His experience also includes operation, troubleshooting and maintenance of these instruments.

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Analytical Chemistry – Environmental Science

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He has in depth knowledge of EPA CLP, solid waste SW846, drinking water and wastewater methodologies. In addition, he has supervisory experience that has included the hiring and training of bench level chemists, preparing Standard Operating Procedures (SOPs), preparing laboratory QA Plans, project data review and laboratory quality control data review.

In the fifteen years he has worked in the environmental testing industry, Mr. Prucnal has acquired in depth knowledge of regulatory requirements including many states and federal (DOD) programs. He has project experience under these programs and is intimately familiar with their data quality objectives and QA requirements.

**Cathy Thompson**  
***Quality Assurance Officer***

In her capacity as QA Officer, Ms. Thompson monitors the laboratory quality system for compliance with NELAC and ISO 17025 requirements. She evaluates laboratory adherence to the QA/QC program through the use of internal audits, data review, performance evaluation studies and oversight of the corrective action process.

Cathy oversees the writing and periodic review of Standard Operating Procedures and the Phase Separation Science, Inc. Quality Assurance Plan. She monitors laboratory handling of out of control events and client initiated concerns and assists in resolution of nonconformance / corrective action reports.

Ms. Thompson serves as the Data Integrity Officer and provides data integrity training. She prepares data packages ranging from those with summary QC to fully validatable CLP-like data packages. She has oversight of our QA/QC program and ensures that the quality of data that we transmit to a client is technically sound and of known and documented quality.

**June Main**  
***Quality Assurance Associate and Deputy QA Officer***

In her capacity as QA Associate, Ms. Main will participate in all aspects of the continuous development of our QA/QC system. She has over twenty years of

experience in the environmental field. Prior to her extensive career, Ms. Main completed a BS degree in Biology with an emphasis in Chemistry.

June began her career as an analyst performing classical EPA wet chemistry methods and trace metals analysis. She became Wet Chemistry Supervisor training and managing bench chemists in the water chemistry department before progressing into Quality Assurance. Initially as a QA chemist, she wrote SOPs, maintained controlled documents, prepared fully validatable data packages for client projects and assisted in obtaining laboratory certifications.

Most recently as a Quality Assurance Officer at a large laboratory chain, Ms. Main achieved and maintained accreditations and certifications by the American Association for Laboratory Accreditation (A2LA), the National Environmental Laboratory Accreditation Program (NELAP), the U.S. Army Corps of Engineers and various other federal, state and third party programs.

**Amy Friedlander**  
***Director of Business Services***

Ms. Friedlander has nearly thirty years experience as a professional in various aspects of environmental science. After completing a Master's degree in environmental science she spent time researching salt marsh nutrient recycling efficiencies while working at the Ecosystems Center in Woods Hole, Massachusetts. She was also involved in oceanographic research and teaching in the Caribbean Sea and the North and South Atlantic oceans for nine years. The results of her research were presented at professional conferences and published in technical papers.

The last nineteen years of her career have been spent in the environmental testing industry. Amy had previously served as Laboratory Information Systems (LIMS) Manager, as a Senior Project Manager and in a business development capacity. Her experience includes managing many projects that are in compliance with EPA Superfund, RCRA, NPDES and SWDA regulations. She has also earned her M.B.A. in Management.

At Phase, Amy is responsible for directing all aspects of client services including project management and business development. In this capacity she will focus on continuing to grow PSS's high standard of customer service ensuring that contractual and data quality objectives are met for all client projects under appropriate state and federal programs.

**Albert Ellis**

***Director of Technical Services***

Mr. Ellis obtained his Bachelor of Science degree from Howard University. At Phase, his diverse activities include managing projects and interfacing with clients. He has accumulated over 15 years of experience in the environmental testing field including roles in Project Management, Data Validation. He has also been involved in the preparation and review of technical documents, assisting clients in the preparation of Sampling and Analysis Plans, QA Project Plans, and Field Sampling Plans.

Albert's previous experience also includes all phases of laboratory operations including management, business development, marketing, client development, QA/QC program oversight, Standard Operating Procedure (SOP) preparation and review, system automation and instrument operations. Albert also has experience in laboratory audits.

Through this vast experience, Mr. Ellis has obtained a detailed knowledge of EPA SW-846, Contract Laboratory Program (CLP), 500 (drinking water) and 600 (wastewater) series methods as well as Specialized DOD methods. He also has extensive experience with the maintenance, training and the implementation of computer applications.

## **MAJOR INSTRUMENTATION**

### **System I (SVOC #1)**

#### ***Gas Chromatograph with Mass Spectroscopy***

System I is primarily for the analysis of EPA listed Semi-Volatile Organic Compounds. This system is also capable of qualitatively determining unknown compounds using the National Institute of Standards & Technology Mass Spectroscopy Library reference.

- Hewlett Packard 5890 Series II Gas Chromatograph
- Hewlett Packard 5971 Mass Selective Detector w/Enhanced Smartcard
- Hewlett 7673 Injector Controller
- Hewlett Packard 7673 Injector Autosampling System

### **Systems II (VOC #1) & III (VOC #2)**

#### ***Gas Chromatograph with Mass Spectroscopy***

Systems II & III are primarily for the analysis of EPA listed Volatile Organic Compounds. These systems are also capable of qualitatively determining unknown compounds using the National Institute of Standards & Technology Mass Spectroscopy Library reference.

- Hewlett Packard 5890 Series II Gas Chromatograph with Capillary Separation (2)
- Hewlett Packard 5972 Mass Selective Detector (2)
- O.I. Analytical 4560 Purge & Trap Sample Concentrator (2)
- Varian Archon Purge & Trap Autosampler (2)

### **Systems IV (BTEX/GRO #1) & V (BTEX/GRO #2)**

#### ***Gas Chromatograph with Dual Tandem Photoionization / Flameionization Detectors***

Systems IV & V are primarily for the analysis of Purgeable Aromatics and Petroleum Distillate Fuels and Solvents.

- Hewlett Packard 5890 Series II Gas Chromatographs with Capillary Separation (2)
- OI Analytical 4430 Tandem Photoionization/Flameionization Detectors (2)
- OI Analytical 4460A Purge & Trap Sample Concentrators (2)
- Varian Archon Purge & Trap Autosamplers (2)

### **System VI (Solvent GC)**

#### ***Gas Chromatograph with Dual Flame Ionization Detectors***

System VI is a custom unit dedicated for the analysis of organic liquid characterization. Organic liquids used for industrial applications as well as liquids found in abandoned drums and tanks during environmental assessments are routinely identified and quantified.

- Hewlett Packard 5890 Gas Chromatograph with Dual Capillary Column Separation(2)
- Hewlett Packard 1046-A Flame Ionization Detectors(2)
- Spectra Physics 4290 Integrator Output(2)

### **System VII (Dual ECD #1)**

#### ***Gas Chromatograph with Electron Capture Detection***

System VII is primarily designed for the analysis of Chlorinated Pesticides, Chlorinated Herbicides, & Polychlorinated Biphenyls.

- Hewlett Packard 6890 - Plus Gas Chromatograph with Capillary Separation
- Hewlett Packard G2397A Electron Capture Detectors (2)
- Hewlett Packard 7683 Dual Injector Autosampling System

### **System VIII (Dual ECD #2)**

#### ***Gas Chromatograph with Electron Capture Detection***

System VIII is primarily designed for the analysis of Chlorinated Pesticides, Chlorinated Herbicides, & Polychlorinated Biphenyls.

- Hewlett Packard 5890 Series II – Plus Gas Chromatograph with Capillary Separation
- Hewlett Packard CG1223A Electron Capture Detectors (2)
- Hewlett Packard 7673 Injector Controller
- Hewlett Packard 7673 Dual Injector Autosampling System

### **System IX (DRO #1)**

#### ***Gas Chromatograph with Dual Tandem Flameionization Detection***

System IX is primarily for the analysis of extractable petroleum hydrocarbons, such as Diesel/No. 2 Fuel Oil and heavier petroleum distillates.

- Hewlett Packard 5890 Series II Gas Chromatograph with Capillary Separation (2)
- Hewlett Packard Flameionization Detector (2)
- Hewlett Packard 7673 Controller
- Hewlett Packard 7673 Autosampling System
- Zip Scientific GC Racer

### **System X (ICP-MS #1)**

#### ***Inductively Coupled Plasma with Mass Spectroscopy***

System X is configured for the analysis of Metals.

- Agilent 7500ce Series ICP/MS
- Neslab M75 Chiller
- ASX 520 Autosampler

### **System XI (ICP-MS #2)**

#### ***Inductively Coupled Plasma with Mass Spectroscopy***

System XI is configured for the analysis of Metals.

- Agilent 7500ce Series ICP/MS
- VWR 1175PD Recirculator
- ASX 510 Autosampler

### **System XII (DRO #2)**

#### ***Gas Chromatograph with Dual Tandem Flameionization Detection***

System XII is primarily for the analysis of extractable petroleum hydrocarbons, such as Diesel/No. 2 Fuel Oil and heavier petroleum distillates.

- Hewlett Packard 5890 Series II Gas Chromatograph with Capillary Separation (2)
- Hewlett Packard Flameionization Detector (2)
- Hewlett Packard 7673 Controller
- Hewlett Packard 7673 Autosampling System
- Zip Scientific GC Racer

### **Systems XIII (VOC #3)**

#### ***Gas Chromatograph with Mass Spectroscopy***

System XIII is primarily for the analysis of EPA listed Volatile Organic Compounds. This system is also capable of qualitatively determining unknown compounds using the National Institute of Standards & Technology Mass Spectroscopy Library reference.

- Hewlett Packard 5890 Series II Gas Chromatograph with Capillary Separation
- Hewlett Packard 5972 Mass Selective Detector
- O.I. Analytical 4560 Purge & Trap Sample Concentrator
- Varian Archon Purge & Trap Autosampler

### **System XIV (IC)**

#### **ICS-2000 Reagent-Free Ion Chromatography (RFIC) System, Dionex, model # ICS-2000**

- *Eluent Valve, Dionex product # 211140, DC# 057945*
- *DS6 Heated conductivity cell, Dionex product # 057985*
- *RFIC EluGen Cartridge II (KOH), Dionex product # 058900*
- *Injection Valve, Dionex product # 057968*
- *Suppressor – ASRS-Ultra II 4-mm, Dionex product # 061561*
- *Chromeleon 6.80 Chromatography Management System*
- *AS40 Automated Sampler*

### **System XV (SVOC #2)**

#### ***Gas Chromatograph with Mass Spectroscopy***

System XV is primarily for the analysis of EPA listed Semi-Volatile Organic Compounds. This system is also capable of qualitatively determining unknown compounds using the National Institute of Standards & Technology Mass Spectroscopy Library reference.

- Agilent 6890 Series II Gas Chromatograph
- Agilent 5975C Mass Selective Detector
- Agilent 7683B Series Injector Autosampler System

**Additional Equipment**

Balances, Ohaus Analytical (3)  
Balances, Ohaus Top-Loading (3)  
Balance, Denver Top-Loading  
Chlorinated Organics Analyzer, Dexsil L2000  
Chlorine Colorimeter, LaMotte Digital  
Cyanide Distillation System, Kontes MidiVap 2000  
Cyanide Distillation System Chiller, VWR  
Drying Ovens (2)  
Flash Point Tester, Setaflash  
Fluoride Pocket Colorimeter, Hach  
Freezers (3)  
Extraction Heater, Barnstead Lab-Line Multi Unit (2)  
Hot Block, Environmental Express Digestion 54 position (2)  
Hot Block, SCP Science DigiPrep MS 48 position  
Hot Plate (Cr<sup>6+</sup>), PMC Six Position Stirring  
Ice Maker  
Muffle Furnace, Fisher  
pH Meter, VWR  
pH Meter, Mettler  
Reagent Water System, Neu-Ion Carbon Exchange (2)  
Reagent Water System, Neu-Ion Mixed Bed Deionizer  
Reagent Water System, Barnstead E-pure Deionized  
Refrigerators, Reach-In Sample Storage (5)  
Refrigerator/ Freezer Units (5)  
Refrigerator, Sample Holding Unit (1)  
Platform Shaker, New Brunswick Innova 2110  
Bench Top Shakers, Glas-Col (2)  
Sonic Disruptor (Single Horn), Tekmar  
Sonic Dismembrator (Dual Horn), Fisher Scientific

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Sonicator, Fisher FS60H  
TCLP ZHE Extractors, Thames (2)  
TCLP ZHE Extractor, Millipore  
TCLP Extractor Rotator, Thames  
TCLP Extractor Rotator, Environmental Express  
TCLP Filtration Apparatus, Gelman  
Spectrophotometer, Milton Roy Spectronic 21  
Turbidimeter, Hach Pocket  
Turbidimeter, Hach 2100P  
Zymark Turbo Vap II (3)

# LABORATORY LAYOUT

# FIRST FLOOR

