



State of West Virginia  
 Department of Administration  
 Purchasing Division  
 2019 Washington Street East  
 Post Office Box 50130  
 Charleston, WV 25305-0130

### Request for Quotation

RFQ NUMBER
DEP15729

PAGE
1

ADDRESS CORRESPONDENCE TO ATTENTION OF
GUY NISBET 304-558-8802

RFQ COPY

TYPE NAME/ADDRESS HERE  
**ALS Environmental**  
**1740 Union Carbide Drive**  
**South Charleston, WV 25303**

SHIP TO

ENVIRONMENTAL PROTECTION,  
 DEPARTMENT OF  
 DIV OF WATER AND WASTE MGT  
 601 57TH STREET SE  
 CHARLESTON, WV  
 25304 304-926-0499

DATE PRINTED	TERMS OF SALE	SHIP VIA	FOB	FREIGHT TERMS
01/05/2012				
BID OPENING DATE: 01/31/2012		BID OPENING TIME 01:30PM		

LINE	QUANTITY	UOP	CAT NO	ITEM NUMBER	UNIT PRICE	AMOUNT
0001	1	LS		961-48		
GENERAL ANALYSIS OF WATER AND SOIL FIELD TESTING  THE WEST VIRGINIA PURCHASING DIVISION, FOR THE AGENCY THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION, IS SOLICITING QUOTATIONS FROM QUALIFIED VENDORS TO PROVIDE THE AGENCY WITH GENERAL ANALYSIS OF WATER AND SOIL PER THE FOLLOWING SPECIFICATIONS, SCOPE OF WORK, TERMS & CONDITIONS, BID REQUIREMENTS, AND THE ATTACHED BID SCHEDULE.  INQUIRES:  WRITTEN QUESTIONS SHALL BE ACCEPTED THROUGH THE CLOSE OF BUSINESS ON TUESDAY, 01/17/2012. QUESTIONS MAY BE SENT VIA: USPS, FAX, COURIER OR EMAIL. IN ORDER TO ASSURE NO VENDOR RECEIVES AN UNFAIR ADVANTAGE, NO SUBSTANTIVE QUESTIONS WILL BE ANSWERED ORALLY. IF POSSIBLE, EMAIL QUESTIONS ARE PREFERRED. ANY TECHNICAL QUESTIONS RECEIVED WILL BE ANSWERED BY FORMAL WRITTEN ADDENDUM TO BE ISSUED BY THE PURCHASING DIVISION AFTER Q&A DEADLINE HAS LAPSED.  ADDRESS INQUIRES TO:  GUY NISBET DEPARTMENT OF ADMINISTRATION PURCHASING DIVISION 2019 WASHINGTON STREET, EAST CHARLESTON, WV. 25305 FAX: 304.558.4115 EMAIL: GUY.L.NISBET@WV.GOV						

RECEIVED  
 2012 JAN 31 AM 10:11  
 WV DEPT OF ENVIRONMENTAL PROTECTION

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TITLE	FEIN	ADDRESS CHANGES TO BE NOTED ABOVE

WHEN RESPONDING TO REQ. INSERT NAME AND ADDRESS IN SPACE ABOVE LABELED 'VENDOR'

## GENERAL TERMS & CONDITIONS REQUEST FOR QUOTATION (RFQ) AND REQUEST FOR PROPOSAL (RFP)

1. Awards will be made in the best interest of the State of West Virginia.
  2. The State may accept or reject in part, or in whole, any bid.
  3. Prior to any award, the apparent successful vendor must be properly registered with the Purchasing Division and have paid the required \$125 fee.
  4. All services performed or goods delivered under State Purchase Order/Contracts are to be continued for the term of the Purchase Order/Contracts, contingent upon funds being appropriated by the Legislature or otherwise being made available. In the event funds are not appropriated or otherwise available for these services or goods this Purchase Order/Contract becomes void and of no effect after June 30.
  5. Payment may only be made after the delivery and acceptance of goods or services.
  6. Interest may be paid for late payment in accordance with the *West Virginia Code*.
  7. Vendor preference will be granted upon written request in accordance with the *West Virginia Code*.
  8. The State of West Virginia is exempt from federal and state taxes and will not pay or reimburse such taxes.
  9. The Director of Purchasing may cancel any Purchase Order/Contract upon 30 days written notice to the seller.
  10. The laws of the State of West Virginia and the *Legislative Rules* of the Purchasing Division shall govern the purchasing process.
  11. Any reference to automatic renewal is hereby deleted. The Contract may be renewed only upon mutual written agreement of the parties.
  12. **BANKRUPTCY:** In the event the vendor/contractor files for bankruptcy protection, the State may deem this contract null and void, and terminate such contract without further order.
  13. **HIPAA BUSINESS ASSOCIATE ADDENDUM:** The West Virginia State Government HIPAA Business Associate Addendum (BAA), approved by the Attorney General, is available online at [www.state.wv.us/admin/purchase/vrc/hipaa.html](http://www.state.wv.us/admin/purchase/vrc/hipaa.html) and is hereby made part of the agreement provided that the Agency meets the definition of a Cover Entity (45 CFR §160.103) and will be disclosing Protected Health Information (45 CFR §160.103) to the vendor.
  14. **CONFIDENTIALITY:** The vendor agrees that he or she will not disclose to anyone, directly or indirectly, any such personally identifiable information or other confidential information gained from the agency, unless the individual who is the subject of the information consents to the disclosure in writing or the disclosure is made pursuant to the agency's policies, procedures, and rules. Vendor further agrees to comply with the Confidentiality Policies and Information Security Accountability Requirements, set forth in <http://www.state.wv.us/admin/purchase/privacy/noticeConfidentiality.pdf>.
  15. **LICENSING:** Vendors must be licensed and in good standing in accordance with any and all state and local laws and requirements by any state or local agency of West Virginia, including, but not limited to, the West Virginia Secretary of State's Office, the West Virginia Tax Department, and the West Virginia Insurance Commission. The vendor must provide all necessary releases to obtain information to enable the director or spending unit to verify that the vendor is licensed and in good standing with the above entities.
  16. **ANTITRUST:** In submitting a bid to any agency for the State of West Virginia, the bidder offers and agrees that if the bid is accepted the bidder will convey, sell, assign or transfer to the State of West Virginia all rights, title and interest in and to all causes of action it may now or hereafter acquire under the antitrust laws of the United States and the State of West Virginia for price fixing and/or unreasonable restraints of trade relating to the particular commodities or services purchased or acquired by the State of West Virginia. Such assignment shall be made and become effective at the time the purchasing agency tenders the initial payment to the bidder.
- I certify that this bid is made without prior understanding, agreement, or connection with any corporation, firm, limited liability company, partnership, or person or entity submitting a bid for the same material, supplies, equipment or services and is in all respects fair and without collusion or fraud. I further certify that I am authorized to sign the certification on behalf of the bidder or this bid.

### INSTRUCTIONS TO BIDDERS

1. Use the quotation forms provided by the Purchasing Division. Complete all sections of the quotation form.
2. Items offered must be in compliance with the specifications. Any deviation from the specifications must be clearly indicated by the bidder. Alternates offered by the bidder as EQUAL to the specifications must be clearly defined. A bidder offering an alternate should attach complete specifications and literature to the bid. The Purchasing Division may waive minor deviations to specifications.
3. Unit prices shall prevail in case of discrepancy. All quotations are considered F.O.B. destination unless alternate shipping terms are clearly identified in the quotation.
4. All quotations must be delivered by the bidder to the office listed below prior to the date and time of the bid opening. Failure of the bidder to deliver the quotations on time will result in bid disqualifications: Department of Administration, Purchasing Division, 2019 Washington Street East, P.O. Box 50130, Charleston, WV 25305-0130
5. Communication during the solicitation, bid, evaluation or award periods, except through the Purchasing Division, is strictly prohibited (W.Va. C.S.R. §148-1-6.6).



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<p>EXHIBIT 3</p> <p>LIFE OF CONTRACT: THIS CONTRACT BECOMES EFFECTIVE UPON AWARD-----, AND EXTENDS FOR A PERIOD OF ONE (1) YEAR OR UNTIL SUCH "REASONABLE TIME" THEREAFTER AS IS NECESSARY TO OBTAIN A NEW CONTRACT OR RENEW THE ORIGINAL CONTRACT. THE "REASONABLE TIME" PERIOD SHALL NOT EXCEED TWELVE (12) MONTHS. DURING THIS "REASONABLE TIME" THE VENDOR MAY TERMINATE THIS CONTRACT FOR ANY REASON UPON GIVING THE DIRECTOR OF PURCHASING 30 DAYS WRITTEN NOTICE.</p> <p>UNLESS SPECIFIC PROVISIONS ARE STIPULATED ELSEWHERE IN THIS CONTRACT DOCUMENT, THE TERMS, CONDITIONS AND PRICING SET HEREIN ARE FIRM FOR THE LIFE OF THE CONTRACT.</p> <p>RENEWAL: THIS CONTRACT MAY BE RENEWED UPON THE MUTUAL WRITTEN CONSENT OF THE SPENDING UNIT AND VENDOR, SUBMITTED TO THE DIRECTOR OF PURCHASING THIRTY (30) DAYS PRIOR TO THE EXPIRATION DATE. SUCH RENEWAL SHALL BE IN ACCORDANCE WITH THE TERMS AND CONDITIONS OF THE ORIGINAL CONTRACT AND SHALL BE LIMITED TO TWO (2) ONE (1) YEAR PERIODS.</p> <p>CANCELLATION: THE DIRECTOR OF PURCHASING RESERVES THE RIGHT TO CANCEL THIS CONTRACT IMMEDIATELY UPON WRITTEN NOTICE TO THE VENDOR IF THE COMMODITIES AND/OR SERVICES SUPPLIED ARE OF AN INFERIOR QUALITY OR DO NOT CONFORM TO THE SPECIFICATIONS OF THE BID AND CONTRACT HEREIN.</p> <p>OPEN MARKET CLAUSE: THE DIRECTOR OF PURCHASING MAY AUTHORIZE A SPENDING UNIT TO PURCHASE ON THE OPEN MARKET, WITHOUT THE FILING OF A REQUISITION OR COST ESTIMATE, ITEMS SPECIFIED ON THIS CONTRACT FOR</p>						

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<p>IMMEDIATE DELIVERY IN EMERGENCIES DUE TO UNFORESEEN CAUSES (INCLUDING BUT NOT LIMITED TO DELAYS IN TRANSPORTATION OR AN UNANTICIPATED INCREASE IN THE VOLUME OF WORK.)</p> <p>QUANTITIES LISTED IN THE REQUISITION ARE APPROXIMATIONS ONLY, BASED ON ESTIMATES SUPPLIED BY THE STATE SPENDING UNIT. IT IS UNDERSTOOD AND AGREED THAT THE CONTRACT SHALL COVER THE QUANTITIES ACTUALLY ORDERED FOR DELIVERY DURING THE TERM OF THE CONTRACT, WHETHER MORE OR LESS THAN THE QUANTITIES SHOWN.</p> <p>BANKRUPTCY: IN THE EVENT THE VENDOR/CONTRACTOR FILES FOR BANKRUPTCY PROTECTION, THE STATE MAY DEEM THE CONTRACT NULL AND VOID, AND TERMINATE SUCH CONTRACT WITHOUT FURTHER ORDER.</p> <p>THE TERMS AND CONDITIONS CONTAINED IN THIS CONTRACT SHALL SUPERSEDE ANY AND ALL SUBSEQUENT TERMS AND CONDITIONS WHICH MAY APPEAR ON ANY ATTACHED PRINTED DOCUMENTS SUCH AS PRICE LISTS, ORDER FORMS, SALES AGREEMENTS OR MAINTENANCE AGREEMENTS, INCLUDING ANY ELECTRONIC MEDIUM SUCH AS CD-ROM.</p> <p>REV. 05/26/2009</p> <p>EXHIBIT 10</p> <p>REQUISITION NO.: DEP15729</p> <p>ADDENDUM ACKNOWLEDGEMENT</p> <p>I HEREBY ACKNOWLEDGE RECEIPT OF THE FOLLOWING CHECKED ADDENDUM(S) AND HAVE MADE THE NECESSARY REVISIONS TO MY PROPOSAL, PLANS AND/OR SPECIFICATION, ETC.</p>						

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ADDENDUM NO.'S:						
NO. 1 .....						
NO. 2 .....						
NO. 3 .....						
NO. 4 .....						
NO. 5 .....						
<p>I UNDERSTAND THAT FAILURE TO CONFIRM THE RECEIPT OF THE ADDENDUM(S) MAY BE CAUSE FOR REJECTION OF BIDS.</p> <p>VENDOR MUST CLEARLY UNDERSTAND THAT ANY VERBAL REPRESENTATION MADE OR ASSUMED TO BE MADE DURING ANY ORAL DISCUSSION HELD BETWEEN VENDOR'S REPRESENTATIVES AND ANY STATE PERSONNEL IS NOT BINDING. ONLY THE INFORMATION ISSUED IN WRITING AND ADDED TO THE SPECIFICATIONS BY AN OFFICIAL ADDENDUM IS BINDING.</p> <p>.....            SIGNATURE</p> <p>.....            COMPANY</p> <p>.....            DATE</p> <p>NOTE: THIS ADDENDUM ACKNOWLEDGEMENT SHOULD BE SUBMITTED WITH THE BID.</p>						

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<p>NOTICE</p> <p>A SIGNED BID MUST BE SUBMITTED TO:</p> <p>DEPARTMENT OF ADMINISTRATION            PURCHASING DIVISION            BUILDING 15            2019 WASHINGTON STREET, EAST            CHARLESTON, WV 25305-0130</p> <p>THE BID SHOULD CONTAIN THIS INFORMATION ON THE FACE OF THE ENVELOPE OR THE BID MAY NOT BE CONSIDERED:</p> <p>SEALED BID</p> <p>BUYER: GN-23</p> <p>RFQ. NO.: DEP15729</p> <p>BID OPENING DATE: 01/31/2012</p> <p>BID OPENING TIME: 1:30 PM</p> <p>PLEASE PROVIDE A FAX NUMBER IN CASE IT IS NECESSARY TO CONTACT YOU REGARDING YOUR BID:</p> <p>-----616-399-6185-----</p> <p>CONTACT PERSON (PLEASE PRINT CLEARLY): Tim Lilly 304-881-0437            Tim.Lilly@alsglobal.com</p>						

SEE REVERSE SIDE FOR TERMS AND CONDITIONS

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TITLE \_\_\_\_\_ FEIN \_\_\_\_\_ ADDRESS CHANGES TO BE NOTED ABOVE

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<p>-----  <i>Max Nisbet</i>            -----</p> <p>ANY INDIVIDUAL SIGNING THIS BID IS CERTIFYING THAT:            (1) HE OR SHE IS AUTHORIZED BY THE BIDDER TO EXECUTE            THE BID OR ANY DOCUMENTS RELATED THERETO ON BEHALF OF            THE BIDDER, (2) THAT HE OR SHE IS AUTHORIZED TO BIND            THE BIDDER IN A CONTRACTUAL RELATIONSHIP, AND (3) THAT            THE BIDDER HAS PROPERLY REGISTERED WITH ANY STATE            AGENCIES THAT MAY REQUIRE REGISTRATION.</p> <p>***** THIS IS THE END OF RFQ DEP15729 ***** TOTAL:</p>						

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Page | 1  
AREA OF WORK

Bids should be submitted by vendors in connection with the costs associated with collection from all Department of Environmental Protection (DEP) offices as listed herein. Awards will be made to all laboratories possessing a current valid West Virginia DEP Laboratory Quality Assurance certification for the appropriate categories of parameters and meeting the qualifications listed below. Because of the short holding times for certain parameters and the desire to avoid multiple labs analyzing samples from individual sites, work will be distributed based on proximity of lab to sample collection location, overall costs for parameters being requested, and the ability of labs to analyze all requested parameters (i.e., certified for all requested parameters). Costs to pickup samples from DEP personnel will also be taken into consideration.

Bidding should be done for each analyte within a specific method. Prices should also be given for liquid and solid samples. If vendor is certified for more than one method per parameter, include method#, MDL and cost. Bids must be submitted exactly as per attached bid sheet.

QUALIFICATIONS

The DEP conducts inspections of permitted and non-permitted facilities, investigates complaints, monitors ambient quality of surface water, groundwater and sediments, performs studies, and provides water quality information to the citizens of West Virginia and other government agencies. Legal action based upon analytic results is possible. Therefore, the vendor or vendors selected must have a quality control program in place and meet the following qualifications:

1. The laboratory must be certified by the Water Resources Quality Assurance Program. This includes any laboratories to which analyses are subcontracted.
2. Be accessible by telephone 24 hours per day, 7 days per week.
3. Capable of attending and providing expert testimony in legal proceeding, upon request.
4. Proof of certification and staff chemist(s) resume(s) must be provided at the time of bid.

SCOPE

In administering and enforcing most of the pollution control laws of the state, the importance of quality control cannot be overstated. Quality control measures must be strictly adhered to in all phases of sample collection, preservation, transportation, and analysis. The quality control and analytical work, as they relate to the contractor's responsibility, is divided into four (4) major steps:

- STEP 1 - Collection of sample from specified office.
- STEP 2 - Conduct specified analysis on samples in a timely and professional manner.
- STEP 3 - Establishment of continuing program to ensure the reliability of analytical data.
- STEP 4 - Legal Testimony



Page | 2

### Step 1 - Collection of Samples from Specified Office

The sampling for the DEP shall be conducted by Department personnel. The vendor shall be notified of the date sampling occurs or is to occur and from which DEP office or other location the sample can be obtained. The vendor shall be notified when the sample was taken (time/date) for circumstances when holding times for parameters to be analyzed are less than seven (7) days. The vendor shall indicate the time the sample was obtained from the pickup location and its condition and the time the sample was delivered to the laboratory. The vendor shall be responsible for holding times, preservation of the sample and the internal chain of custody from the time the vendor obtained the sample until the time the analysis is accepted by the Department. The vendor shall also maintain records of the results of analysis for a minimum of five (5) years.

### Step 2 - Conduct Specified Analysis on Samples

The methods used by the laboratory for the analysis shall be either; 1) Methods described in 40 CFR-136 or, 2) Test Methods for Evaluating Solid Waste -Physical/Chemical Methods (SW -846) Third Edition with updates. The sampler shall be responsible for specifying either 1 or 2 above. In the event the method is not specified, the laboratory shall contact the sampler for verification of the method to be used.

Vendors must include the method number on the bid sheet. A single analytical method for some parameters isn't adequate, for example, a sample of discharge water from a sewage treatment plant need not have the same precision as a sample from relatively clean oligotrophic waters. If vendor submits bids for an alternate method, the method number and MDL must be included on the bid sheet. If vendors are certified for more than 2 methods for a parameter, the vendor can provide bids and associated information on a separate page.

Vendors must provide a single bid for the cost of the analysis and reporting for the Phase 1 Detection Monitoring constituent lists described Appendix A.

Results of analytical tests must be submitted electronically in a Microsoft Excel (or compatible) format. The electronic results should conform to the DEP program approved template format. Where provided, the vendor must include the WQ ID number with the data submitted. This electronic data submittal requirement may be waived in some circumstances where the number of samples and/or number of analytical tests requested is low. Waiver must be requested prior to data submittal

Analysis of samples is not deemed completed until the data has been submitted to and accepted by DEP. Should the DEP not provide notice of acceptance within four weeks of the date results were mailed, the vendor may consider the data to be acceptable by the Division. The vendor shall be responsible for maintaining preservation of the samples until the holding time is exceeded. Any samples with a sheen, discoloration or odor shall be maintained until DEP's notification that the sample can be properly disposed of. DEP will advise the vendor which samples fall into this category. The vendor shall be responsible for the proper disposal of all samples submitted to them by the DEP unless otherwise notified. The vendor shall dispose of the sample no earlier than four weeks after DEP accepts the results. The results of the analysis shall be submitted to the DEP no more than two (2) weeks after receipt of samples.

### Step 3 - Quality Control

Three programs are to be utilized to assure reliable laboratory data: (1) the use and documentation of standard analytical methods, (2) analysis of duplicate and spiked (where the concept applies) samples at regular intervals each day to check analytical precision and accuracy, and (3) analysis of reference samples at 6 (six) month intervals\*. Regardless of which analytical methods are used in a laboratory, the methodology must be carefully documented. Standard methods which have been modified or entirely replaced because of recent advances in the state of art may only be used when it has been given approval in the Federal Register. Documentation of procedures must be clear, honest, and adequately referenced; and the procedures shall be applied exactly as documented. The responsibility for results obtained from these procedures rests with the analyst and supervisor, both as representatives of the firm.

To check the laboratory analytical precision, duplicate analysis of samples shall be performed at regular intervals. Duplicate samples must be carried through the complete analytical process. For all analyses, the interval shall be every tenth (10th) sample. When less than ten (10) samples are tested in one day, at least one duplicate sample shall be analyzed, and that sample must be a DEP sample. The difference between the replicates for each analysis are to be plotted on Shewart precision quality control charts. "Out-of-Control" samples are to be repeated and appropriate steps shall be taken to locate and remedy the error.

To check the laboratory analytical accuracy, samples containing a known addition of the target analyte (spike) shall be analyzed at regular intervals. Spiked samples must be carried through the complete analytical process. For all analyses, the interval shall be every tenth (10th) sample. Where less than ten samples are tested in one day, at least one spiked sample shall be analyzed, and that sample must be a DEP sample. The percent recovery must be plotted out on Shewart accuracy quality control charts. "Out-of-Control" samples are to be repeated and appropriate steps taken to locate and remedy the source of error. The DEP reserves the right to conduct unannounced examinations of the laboratory's records to assure compliance.

Periodic submission of samples with known composition will occur. No notice of this activity will be provided unless results indicate an anomaly.

\*These analyses shall be conducted under the vendor's performance evaluation test number through the Analytical Products Group.

Page | 4

#### **Step 4 - Legal Testimony**

The selected vendor or vendors may be requested by the DEP to testify concerning the validity of the laboratory analysis. The vendor will only be required to testify to the following areas:

1. Time of notification by Department of sampling and by whom.
2. When and where samples were collected by the firm.
3. Condition of sample.
4. How sample was preserved by the firm.
5. Date and time(s) of analysis and by whom.
6. Chain of Custody procedures within the laboratory
7. Methods used.
8. Results of analysis.

At no time will the firm respond to questions concerning interpretation of results. The Department shall reimburse the vendor for the costs of any such testimony. The vendor must provide a detailed invoice of actual costs incurred.

#### **PRIME VENDOR RESPONSIBILITIES**

A vendor who is awarded a contract, when performing work under the terms and conditions of this contract, is solely responsible for the satisfactory completion of the work. The vendor shall be responsible for ensuring that any subcontractors have all the necessary permits, certifications (including WV State Laboratory Certification) and insurance to perform the work. DEP will consider the prime vendor to be the sole point of contact with regard to authorized work under the contract, however this provision does not prohibit the DEP from directly contacting subcontractors.

#### **SUBCONTRACTORS**

The prime vendor shall not be allowed to subcontract any work or services under this contract to any other person, company, corporation, firm, organization or agency without prior written approval of the DEP. The prime contractor is ultimately responsible for seeing the results submitted electronically and must also provide copies hard or electronic copies of any documentation provided by the subcontractor.

#### **CONFIDENTIALITY**

The vendor agrees that any and all data, analyses, materials, reports or other information, oral or written, prepared by the vendor with respect to this requisition shall, except for information which has been made publicly available, be treated as confidential and shall not be utilized, released, published, or disclosed, by the vendor at any time for any purpose whatsoever other than to provide consultation or other service to DEP.

**MISCELLANEOUS PROVISIONS**

1. The vendor shall provide necessary sample containers and field preservatives to the DEP if requested by the Department.
2. The DEP may, at their discretion, choose to deliver samples to the vendor's establishment rather than having them picked up by or delivered to the vendor.
3. Any updates to the MDLs during the life of this contract shall be provided to the DEP, in writing within one week of the update(s) completion.
4. The vendor shall provide at no additional cost, any requested quality control/calibration information associated with a particular sample. Quality control/calibration information includes but is not limited to: values of standards used in calibration, date of last calibration, correlation coefficients of calibration curves, instrument blank values, check standard values, spike/recovery values, duplicate values, dilution volumes, bench sheets, calculations and Shewart quality control charts.
5. Notice of any changes to the vendor's certification status with regard to any of the parameters that the vendor is certified to analyze for, must be submitted to DEP, in writing, within ten (10) days of the time of status change.
6. The laboratory will provide blank water to the DEP, at no charge, upon request.



## Appendix A

**Constituents for Phase I Detection Monitoring****GROUP A: Inorganic Constituents**

COMMON NAME <sup>2</sup>	CAS RN <sup>3</sup>
Acidity	(Total)
Aluminum	(Total) bid as package
Alkalinity	(Total) (Groups A and B combined)
Ammonia Nitrogen	(Total)
Antimony	(Total)
Arsenic	(Total)
Barium	(Total)
Beryllium	(Total)
Bicarbonates	(mg/l)
Boron	(Total)
Cadmium	(Total)
Chlorides	(Total)
Chromium	(Total)
Cobalt	(Total)
COD	(mg/l)
Copper	(Total)
Dissolved Manganese	(Total)
Iron	(Total)
Lead	(Total)
Magnesium	(Total)
Mercury	(Total)
Molybdenum	(Total)
Nickel	(Total)
Nitrate	(Total)
pH	(Std. Units)
Potassium	(Total)
Selenium	(Total)
Silver	(Total)
Sodium	(Total)
Specific Conductance	(umhos/cm)
Sulfate	(Total)
TDS	(mg/l)
Thallium	(Total)
TOC	(mg/l)
Total Phenolic Materials	(Total)
TSS	(Total)
Turbidity	(Total)
Vanadium	(Total)
Zinc	(Total)

In addition to the above, the following parameters should be analyzed:  
Temperature, (BOD-5-day), flouride and calcium.

### GROUP B: Organic Constituents<sup>1</sup>

COMMON NAME <sup>2</sup>	CAS RN <sup>3</sup>
Acetone	67-64-1
Acrylonitrile	107-13-1
Benzene	71-43-2
Bromochloromethane	74-97-5
Bromodichloromethane	75-27-4
Bromoform; Tribromomethane	75-25-2
Carbon disulfide	75-15-0
Carbon tetrachloride	56-23-5
Chlorobenzene	108-90-7
Chloroethane; Ethyl chloride	75-00-3
Chloroform; Trichloromethane	67-66-3
Dibromochloromethane; Chlorodibromomethane	124-48-1
1,2-Dibromo-3-chloropropane; DBCP	96-12-8
1,2-Dibromoethane; Ethylene dibromide; EDB	106-93-4
o-Dichlorobenzene; 1,2-Dichlorobenzene	95-50-1
p-Dichlorobenzene; 1,4-Dichlorobenzene	106-46-7
trans-1,4-Dichloro-2-butene	110-57-6
1,1-Dichloroethane; Ethylidene chloride	75-34-3
1,2-Dichloroethane; Ethylene dichloride	107-06-2
1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	75-35-4
cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	156-59-2
trans-1,2-Dichloroethylene; trans-1,2-Dichloroethene	156-60-5
1,2-Dichloropropane; Propylene dichloride	78-87-5
cis-1,3-Dichloropropene	10061-01-5
trans-1,3-Dichloropropene	10061-02-6
Ethylbenzene	100-41-4
2-Hexanone; Methyl butyl ketone	591-78-6
Methyl bromide; Bromomethane	74-83-9
Methyl chloride; Chloromethane	74-87-3
Methylene bromide; Dibromomethane	74-95-3
Methylene chloride; Dichloromethane	75-09-2
Methyl ethyl ketone; MEK; 2-Butanone	78-93-3
Methyl iodide; Iodomethane	74-88-4
4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1
Styrene	100-42-5
1,1,1,2-Tetrachloroethane	630-20-6
1,1,2,2-Tetrachloroethane	79-34-5
Tetrachloroethylene; Perchloroethylene	127-18-4
Toluene	108-88-3
1,1,1-Trichloroethane; Methylchloroform	71-55-6
1,1,2-Trichloroethane	79-00-5

Trichloroethylene; Trichloroethene	79-01-6
Trichlorofluoromethane; CFC-II	75-69-4
1,2,3-Trichloropropane	96-18-4
Vinyl acetate	108-05-4
Vinyl chloride	75-01-4
Xylenes	1330-20-7

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1. This list contains volatile organics for which possible analytical procedures provided in EPA Report SW-846 "Test Methods for Evaluating Solid Waste", third edition, November 1986, as revised December 1987, includes Method 8260 and 8011; and metals for which SW-846 provides either Method 6010 or a method from the 7000 series of methods.

2. Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

3. Chemical Abstracts Service registry number. Where "Total" is entered, all species in the groundwater that contain this element are included.

## ANALYSIS OF WATER AND SOIL

DEP15729

## Vendor's Bid Sheet

Vendors Name: ALS Environmental

The DEP reserves the right to request additional information and supporting documentation regarding unit prices when the unit price appears to be unreasonable.

ITEM NO.	EST. QUANTITY	DESCRIPTION	Method #	Method Detection Level*	UNIT PRICE	AMOUNT
1	4000	pH	SW9040	N/A	\$ 6.00	\$ 24000.00
1A	10	pH (Solid)	SW9045	N/A	\$ 6.00	\$ 60.00
2	4000	Hot Acidity	SM2310	10-5 mg/l	\$ 11.00	\$ 44000.00
2A	1000	Hot Acidity Alt. Method	N/A	*	\$	\$
3	4000	Alkalinity	SM2320	10-5 mg/L	\$ 10.00	\$ 40000.00
3A	1000	Alkalinity Alt. Method	N/A	N/A	\$	\$
4	500	Hardness	SM2340	1 mg/L	\$ 10.00	\$ 5000.00
4A	100	Hardness Alt. Method	SM2340	1 mg/L	\$ 10.00	\$ 1000.00
4B	10	Hardness (Solid)	N/A	N/A	\$	\$
5	1000	Specific Conductance	120.1	3 uS/cm <sup>2</sup>	\$ 10.00	\$ 10000.00
5A	500	Specific Conductance Alt. Method	SM2510	3µS/cm <sup>2</sup>	\$ 10.00	\$ 5000.00
6	4000	Sulfate	300.0	5 mg/L	\$ 11.00	\$ 44000.00
6A	1000	Sulfate Alt. Method	SM426	5 mg/L	\$ 11.00	\$ 11000.00
6B	10	Sulfate (Solid)	SW9056	10 mg/Kg	\$ 11.00	\$ 110.00
7	20	Sulfide	SM4500	1 mg/L	\$ 15.00	\$ 300.00
7A	10	Sulfide Alt. Method	N/A	N/A	\$	\$
8	20	Turbidity	180.1	1 NTU (higher OK if highly turbid)	\$ 10.00	\$ 200.00
8A	10	Turbidity Alt. Method	N/A	N/A	\$	\$
9	300	Bromide	300.0	0.1 mg/L	\$ 11.00	\$ 3300.00
9A	10	Bromide Alt. Method	D1246	1 mg/L	\$ 11.00	\$ 110.00
9B	10	Bromide (Solid)	SW9056	1 mg/Kg	\$ 11.00	\$ 110.00
10	3000	Chloride	300.0	1-5 mg/L	\$ 11.00	\$ 33000.00
10A	100	Chloride Alt. Method	SM4500	1.5 mg/L	\$ 11.00	\$ 1100.00
10B	10	Chloride (Solid)	SW9056	1 mg/Kg	\$ 11.00	\$ 110.00
11	25	Fluoride	300.0	0.2 mg/L	\$ 11.00	\$ 275.00
11A	10	Fluoride Alt. Method	SM4500	0.01 mg/L	\$ 11.00	\$ 110.00
11B	10	Fluoride (Solid)	SW9056	0.5 mg/Kg	\$ 11.00	\$ 110.00
12	4000	Fecal Coliform (MF)	SM9222D	4 cfu/100 mL	\$ 19.00	\$ 76000.00
12A	1000	Fecal Coliform (MF) Alt. Method	N/A	N/A	\$	\$
13	100	Fecal Coliform (MPN)	SM9221E	4 cfu/100 mL	\$ 40.00	\$ 4000.00
13A	50	Fecal Coliform (MPN) Alt. Method	N/A	N/A	\$	\$
14	20	Total Coliform	SM9222B	4 cfu/100 mL	\$ 15.00	\$ 300.00
15	25	Total Solids	SM2540	1 mg/L	\$ 10.00	\$ 250.00
15A	10	Total Solids Alt. Method	N/A	N/A	\$	\$
15B	10	Total Solid (Solid)	SM2540	1 mg/L	\$ 10.00	\$ 100.00
16	3000	Dissolved Solids (TDS)	SM2540	1 mg/L	\$ 10.00	\$ 30000.00
16A	1000	Dissolved Solids (TDS) Alt. Method	N/A	N/A	\$	\$
17	4000	Suspended Solids (TSS)	SM2540	3 mg/L	\$ 10.00	\$ 40000.00



ITEM NO.	EST. QUANTITY	DESCRIPTION	Method #	Method Detection Level*	UNIT PRICE	AMOUNT
17A	1000	Suspended Solids (TSS) Alt. Method	NIA	NIA	\$	\$
18	25	Settleable Solids	SM2540	0.5mg/L	\$ 10.00	\$ 250.00
18A	10	Settleable Solids Alt. Method	NIA	NIA	\$	\$
19	25	Volatile Solids	SM2540	1 mg/L	\$ 10.00	\$ 250.00
19A	10	Volatile Solids Alt. Method	NIA	NIA	\$	\$
19B	10	Volatile solid (Solid)	SM2540	1%	\$ 10.00	\$ 100.00
20	25	Percent Solids	SM2540	1%	\$ 10.00	\$ 250.00
20A	10	Percent Solids Alt. Method	NIA	NIA	\$	\$
20B	10	Percent Solids (Solid)	SM2540	1%	\$ 10.00	\$ 100.00
21	400	Kjeldahl Nitrogen	SM4500	0.1 mg/L	\$ 20.00	\$ 8000.00
21A	100	Kjeldahl Nitrogen Alt. Method	351.2	0.1mg/L	\$ 20.00	\$ 2000.00
21B	10	Kjeldahl Nitrogen (Solid)	SM4500	5.0mg/kg	\$ 20.00	\$ 200.00
21C	10	Kjeldahl Nitrogen Alt. Method (Solid)	NIA	NIA	\$	\$
22	50	Ammonia Nitrogen	350.1	0.11mg/L	\$ 11.00	\$ 550.00
22A	10	Ammonia Nitrogen Alt. Method	SM4500	0.11mg/L	\$ 11.00	\$ 110.00
22B	10	Ammonia Nitrogen (Solid)	SM4500	4 mg/kg	\$ 11.00	\$ 110.00
22C	10	Ammonia Nitrogen Alt. Method (Solid)	NIA	NIA	\$	\$
23	50	Organic Nitrogen	351.2	0.5 mg/L	\$ 34.00	\$ 1700.00
23A	10	Organic Nitrogen Alt. Method	NIA	NIA	\$	\$
24	50	Nitrate-Nitrogen	300.0	0.05 mg/L	\$ 11.00	\$ 550.00
24A	10	Nitrate-Nitrogen Alt. Method	SM4500	0.02 mg/L	\$ 11.00	\$ 110.00
25	50	Nitrite-Nitrogen	300.0	0.05 mg/L	\$ 11.00	\$ 550.00
25A	10	Nitrite-Nitrogen Alt. Method	NIA	NIA	\$	\$
25B	10	Nitrite-Nitrogen (Solid)	SM4056	0.05mg/kg	\$ 11.00	\$ 110.00
25C	10	Nitrite-Nitrogen Alt. Method (Solid)	NIA	NIA	\$	\$
26	400	Nitrite-Nitrate	300.0	0.08 mg/L	\$ 15.00	\$ 6000.00
26A	100	Nitrite-Nitrate Alt. Method	SM4500	0.05mg/L	\$ 15.00	\$ 1500.00
26B	10	Nitrite-Nitrate (Solid)	SM4056	0.2mg/kg	\$ 15.00	\$ 150.00
26C	10	Nitrite-Nitrate Alt. Method (Solid)	NIA	NIA	\$	\$
27	400	Total Phosphorus	SM4500	0.01 mg/L	\$ 16.00	\$ 6400.00
27A	100	Total Phosphorus Alt. Method	NIA	NIA	\$	\$
27B	10	Total Phosphorus (Solid)	SM4500	1mg/kg	\$ 16.00	\$ 1600.00
27C	10	Total Phosphorus Alt. Method (Solid)	NIA	NIA	\$	\$
28	50	Orthophosphate	365.3	0.01 mg/L	\$ 11.00	\$ 550.00
28A	10	Orthophosphate Alt. Method	NIA	NIA	\$	\$
29	50	Total Phosphate	SM4500	0.01 mg/L	\$ 16.00	\$ 800.00
29A	10	Total Phosphate Alt. Method	365.3	0.01mg/L	\$ 16.00	\$ 160.00
29B	10	Total Phosphate (Solid)	SM4500	1mg/kg	\$ 16.00	\$ 160.00
29C	10	Total Phosphate Alt. Method (Solid)	NIA	NIA	\$	\$
30	25	BOD	SM5210	2 mg/L	\$ 20.00	\$ 500.00
30A	10	BOD Alt. Method	NIA	NIA	\$	\$
31	25	BOD-carbonaceous	NIA	2 mg/L	\$	\$
31A	10	BOD-carbonaceous Alt. Method	NIA	NIA	\$	\$
32	25	COD	SM5310	0.5 mg/L	\$ 28.00	\$ 700.00
32A	10	COD Alt. Method	NIA	NIA	\$	\$
33	25	TOC	SM5310	1 mg/L	\$ 28.00	\$ 700.00
33A	10	TOC Alt. Method	NIA	NIA	\$	\$
34	25	MBAS	SM5540	0.05 mg/L	\$ 30.00	\$ 750.00
34A	10	MBAS Alt. Method	NIA	NIA	\$	\$
35	25	Phenolics	420.1	0.01 mg/L	\$ 35.00	\$ 875.00
35A	10	Phenolics Alt. Method	NIA	NIA	\$	\$
35B	10	Phenolics (Solid)	SM9065	0.05mg/kg	\$ 36.00	\$ 360.00
36	25	Total Cyanide	SM4500	0.005 mg/L	\$ 24.00	\$ 600.00
36A	10	Total Cyanide Alt. Method	NIA	NIA	\$	\$

ITEM NO.	EST. QUANTITY	DESCRIPTION	Method #	Method Detection Level*	UNIT PRICE	AMOUNT
36B	10	Total Cyanide (Solid)	SM4500	104 mg/kg 0.005 mg/L	\$ 26.00	\$ 260.00
37	200	Hexavalent Chromium	218.6		\$ 24.00	\$ 4800.00
37A	10	Hexavalent Chromium Alt. Method	N/A	N/A	\$	\$
37B	10	Hexavalent Chromium (Solid)	218.6	0.05 mg/kg	\$ 24.00	\$ 240.00
38	25	Oil-Grease	1664	2 mg/L	\$ 35.00	\$ 875.00
38A	10	Oil-Grease Alt. Method	N/A	N/A	\$	\$
38B	10	Oil-Grease (Solid)	N/A	0.5 ug/L	\$	\$
39	100	Chlorophyll A	N/A	N/A	\$	\$
39A	20	Chlorophyll A Alt. Method	N/A	N/A	\$	\$
40	25	Color (APHA)	SM2120	5 color units	\$ 11.00	\$ 275.00
40A	10	Color (APHA) Alt. Method	N/A	N/A	\$	\$
41	25	Color (ADMI)	N/A	10 ADMI value	\$	\$
41A	10	Color Alt. Method	N/A	N/A	\$	\$
42	25	Cyanide, Amenable	SM4500	0.005 mg/L	\$ 30.00	\$ 750.00
42A	10	Cyanide, Amenable Alt. Method	N/A	N/A	\$	\$
43	25	Cyanide, Free (ASTM)	SM4500	0.005 mg/L	\$ 30.00	\$ 750.00
43A	10	Cyanide, Free Alt. Method	N/A	N/A	\$	\$
44	25	Mineral Acidity	SM2310	1 mg/L	\$ 11.00	\$ 275.00
44A	10	Mineral Acidity Alt. Method	N/A	N/A	\$	\$
45	25	Total Acidity	SM2310	1 mg/L	\$ 11.00	\$ 275.00
45A	10	Total Acidity Alt. Method	N/A	N/A	\$	\$
46	25	Tot Petroleum Hydrocarbons GRO/DRO (8015)	8015	0.5 mg/L	\$ 60.00	\$ 1500.00
46A	10	Tot Petroleum Hydrocarbons GRO/DRO (8015) (Solid)	8015	3.0 mg/kg	\$ 60.00	\$ 600.00
47	25	Fecal Streptococci	N/A	4 cfu/100 mL	\$	\$
47A	10	Fecal Streptococci Alt. Method			\$	\$
47B	10	Fecal Streptococci (Solid)			\$	\$
48	25	Escherichia Coli (Numeric Result)		1 cfu/100 mL	\$	\$
48A	10	E. Coli (Numeric Result) Alt. Method		1 cfu/100 mL	\$	\$
49	100	Enterococci			\$	\$
50	20	Iron Bacteria			\$	\$
51	20	Sulfate Reducing Bacteria			\$	\$
52	25	Bicarbonate (Standard Methods)		1 mg/L	\$	\$
52A	10	Bicarbonate Alt. Method		0.05 mg/L	\$	\$
53	25	Ferrous Iron (Standard Methods)			\$	\$
53A	10	Ferrous Iron Alt. Method		1 mg/L	\$	\$
54	25	Dissolved Organic Carbon			\$	\$
54A	10	Dissolved Organic Carbon Alt. Method	200.7	0.005 mg/L	\$ 6.00	\$ 24000.00
55	4000	Aluminum	200.8	.66 ug/L	\$ 10.00	\$ 1000.00
55A	100	Aluminum - Alt. method	6010	0.027 mg/kg	\$ 6.00	\$ 60.00
55B	10	Aluminum (Solid)	200.7	0.005 mg/L	\$ 6.00	\$ 120.00
56	20	Antimony	200.8	1.14 ug/L	\$ 10.00	\$ 100.00
56A	10	Antimony Alt. Method	6010	0.005 mg/kg	\$ 6.00	\$ 60.00
56B	10	Antimony (Solid)	200.7	0.005 mg/L	\$ 6.00	\$ 120.00
57	20	Arsenic	200.8	0.30 ug/L	\$ 10.00	\$ 100.00
57A	10	Arsenic Alt. Method	6010	0.06 mg/kg	\$ 6.00	\$ 60.00
57B	10	Arsenic (Solid)	200.7	0.005 mg/L	\$ 6.00	\$ 120.00
58	20	Barium	200.8	0.49 ug/L	\$ 10.00	\$ 100.00
58A	10	Barium Alt. Method	6010	0.004 mg/kg	\$ 6.00	\$ 60.00
58B	10	Barium (Solid)	200.7	0.00008 mg/L	\$ 6.00	\$ 120.00
59	20	Beryllium	200.8	1.2 ug/L	\$ 10.00	\$ 100.00
59A	10	Beryllium Alt. Method	6010	0.005 mg/kg	\$ 6.00	\$ 60.00
59B	10	Beryllium (Solid)			\$	\$

275.00 275.00

ITEM NO	EST. QUANTITY	DESCRIPTION	Method #	Method Detection Level*	UNIT PRICE	AMOUNT
60	20	Boron	200.7	0.02 mg/L	\$ 6.00	\$ 120.00
60A	10	Boron Alt. Method	<del>200.8</del>	N/A	\$	\$
60B	10	Boron (Solid)	6010	0.005 mg/kg	\$ 6.00	\$ 60.00
61	200	Cadmium	200.7	0.00005 mg/L	\$ 6.00	\$ 120.00
61A	20	Cadmium Alt. Method	200.8	0.3540 ug/L	\$ 10.00	\$ 200.00
61B	10	Cadmium (Solid)	6010	0.004 mg/kg	\$ 6.00	\$ 60.00
62	500	Calcium	200.7	0.02 mg/L	\$ 6.00	\$ 3000.00
62A	20	Calcium Alt. Method	<del>200.8</del>	N/A	\$	\$
62B	10	Calcium (Solid)	6010	0.037 mg/kg	\$ 6.00	\$ 60.00
63	20	Chromium	200.7	0.001 mg/L	\$ 6.00	\$ 120.00
63A	10	Chromium Alt. Method	200.8	.5960 ug/L	\$ 10.00	\$ 100.00
63B	10	Chromium (Solid)	6010	0.004 mg/kg	\$ 6.00	\$ 60.00
64	20	Cobalt	200.7	0.001 mg/L	\$ 6.00	\$ 120.00
64A	10	Cobalt Alt. Method	200.8	.4080 ug/L	\$ 10.00	\$ 100.00
64B	10	Cobalt (Solid)	6010	0.005 mg/kg	\$ 6.00	\$ 60.00
65	200	Copper	200.7	0.001 mg/L	\$ 6.00	\$ 1200.00
65A	20	Copper Alt. Method	200.8	0.7630 ug/L	\$ 10.00	\$ 200.00
65B	10	Copper (Solid)	6010	0.004 mg/kg	\$ 6.00	\$ 60.00
66	3000	Iron	200.7	0.01 mg/L	\$ 6.00	\$ 18000.00
66A	100	Iron Alt. Method	<del>200.8</del>	N/A	\$	\$
66B	10	Iron (Solid)	6010	0.003 mg/kg	\$ 6.00	\$ 60.00
67	200	Lead	200.7	0.00054 mg/L	\$ 6.00	\$ 1200.00
67A	10	Lead Alt. Method	200.8	0.8910 ug/L	\$ 10.00	\$ 100.00
67B	10	Lead (Solid)	6010	0.05 mg/kg	\$ 6.00	\$ 60.00
68	500	Magnesium	200.7	0.05 mg/L	\$ 6.00	\$ 3000.00
68A	20	Magnesium Alt. Method	<del>200.8</del>	N/A	\$	\$
68B	10	Magnesium (Solid)	6010	0.144 mg/kg	\$ 6.00	\$ 60.00
69	3000	Manganese	200.7	0.005 mg/L	\$ 6.00	\$ 18000.00
69A	100	Manganese Alt. Method	200.8	0.3800 ug/L	\$ 10.00	\$ 1000.00
69B	10	Manganese (Solid)	6010	0.004 mg/kg	\$ 6.00	\$ 60.00
70	200	Mercury	245.1	0.0001 mg/L	\$ 20.00	\$ 4000.00
70A	200	Mercury / Method 1631E	1631	0.5 ng/L	\$ 55.00	\$ 11000.00
70B	10	Mercury (Solid)	2471	0.02 mg/kg	\$ 20.00	\$ 200.00
71	20	Molybdenum	200.7	0.005 mg/L	\$ 6.00	\$ 120.00
71A	10	Molybdenum Alt. Method	200.8	0.3020 ug/L	\$ 10.00	\$ 100.00
71B	10	Molybdenum (Solid)	6010	0.002 mg/kg	\$ 6.00	\$ 60.00
72	200	Nickel	200.7	0.005 mg/L	\$ 6.00	\$ 1200.00
72A	20	Nickel Alt. Method	200.8	0.5430 ug/L	\$ 10.00	\$ 200.00
72B	10	Nickel (Solid)	6010	0.003 mg/kg	\$ 6.00	\$ 60.00
73	500	Potassium	200.7	0.05 mg/L	\$ 6.00	\$ 3000.00
73A	20	Potassium Alt. Method	<del>200.8</del>	N/A	\$	\$
73B	10	Potassium (Solid)	6010	0.121 mg/kg	\$ 6.00	\$ 60.00
74	500	Selenium	200.7	0.001 mg/L	\$ 6.00	\$ 3000.00
74A	20	Selenium Alt. Method	<del>200.8</del>	N/A	\$	\$
74B	10	Selenium (Solid)	6010	0.01 mg/kg	\$ 6.00	\$ 60.00
75	200	Silver	200.7	0.000072 mg/L	\$ 6.00	\$ 1200.00
75A	20	Silver Alt. Method	200.8	0.3810 ug/L	\$ 10.00	\$ 200.00
75B	10	Silver (Solid)	6010	0.003 mg/kg	\$ 6.00	\$ 60.00
76	500	Sodium	200.7	0.05 mg/L	\$ 6.00	\$ 3000.00
76A	20	Sodium Alt. Method	N/A	N/A	\$	\$
76B	10	Sodium (Solid)	6010	0.61 mg/kg	\$ 6.00	\$ 60.00
77	200	Strontium	200.7	0.001 mg/L	\$ 6.00	\$ 1200.00
77A	20	Strontium Alt. Method	6010	0.004 mg/kg	\$ 6.00	\$ 120.00
78	20	Thallium	200.7	0.001 mg/L	\$ 6.00	\$ 120.00



ITEM NO.	EST. QUANTITY	DESCRIPTION	Method #	Method Detection Level*	UNIT PRICE	AMOUNT
78A	10	Thallium Alt. Method	200.8	0.9600 ug/L	\$ 10.00	\$ 100.00
78B	10	Thallium (Solid)	6010	0.009 mg/kg	\$ 6.00	\$ 60.00
79	20	Tin	200.7	0.02 mg/L	\$ 6.00	\$ 120.00
79A	10	Tin Alt. Method	N/A	N/A	\$	\$
79B	10	Tin (Solid)	6010	0.032 mg/kg	\$ 6.00	\$ 60.00
80	20	Vanadium	200.7	0.005 mg/L	\$ 6.00	\$ 120.00
80A	10	Vanadium Alt. Method	200.8	1.33 ug/L	\$ 10.00	\$ 100.00
80B	10	Vanadium (Solid)	6010	0.001 mg/kg	\$ 6.00	\$ 60.00
81	200	Zinc	200.7	0.002 mg/L	\$ 6.00	\$ 120.00
81A	20	Zinc Alt. Method	200.8	1.38 ug/L	\$ 10.00	\$ 120.00
81B	10	Zinc (Solid)	6010	0.066 mg/kg	\$ 6.00	\$ 60.00
82	200	Metals Prep Cost	200.2	N/A	\$ 10.00	\$ 2000.00
82A	10	Metals Prep Cost (Solid)	3050	N/A	\$ 10.00	\$ 100.00
83	20	Gross Alpha	900.0		\$ 50.00	\$ 1000.00
84	20	Gross Beta	900.00		\$ 50.00	\$ 1000.00
85	20	Ra-226	903.1		\$ 125.00	\$ 2500.00
86	20	Ra-228	903.1		\$ 135.00	\$ 2700.00
87	20	Total Uranium	D3972		\$ 140.00	\$ 2800.00
88	20	Sr-89	D5811		\$ 125.00	\$ 2500.00
89	20	Sr-90	D5811		\$ 85.00	\$ 1700.00
90	20	Tritium (H3)	901.0		\$ 95.00	\$ 1900.00
91	20	Gamma (Cs-137)	901.1		\$	\$
92	20	Radon	N/A	N/A	\$	\$

**Toxicity Testing - Freshwater Organisms**

Acute:						
93	25	Ceriodaphnia			\$ 250.00	\$ 6250.00
94	10	Daphnia Pulex / D. magna			\$ 250.00	\$ 2500.00
95	25	Pimephales promelas			\$ 350.00	\$ 8750.00
Chronic:						
96	25	Ceriodaphnia		N/A	\$	\$
97	25	Pimephales promelas (Survival & Growth)			\$ 1000.00	\$ 25000.00
98	200	Analysis of entire "Phase I Parameters" for landfills See Appendix A for list.			\$ 575.00	\$ 115000.00

99	10	Professional staff representation of data in legal/administrative setting per hour			\$ 100.00	\$ 1000.00
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**Collection of samples - costs associated with sample pickup from the following locations:**

100	24	Charleston Office, 601 57th St., SE, Charleston, WV 25304			\$ N/C	\$
101	24	Tenays Office, P.O. Box 662, Tenays, WV 25596			\$ N/C	\$
102	24	Fairmont Office, 2031 Pleasant Valley Rd., Fairmont, WV 26554			\$ 100.00	\$ 2400.00
103	24	Romney Office, IIC 63, Box 2545, Romney, WV 26757			\$ 150.00	\$ 3600.00
104	24	French Creek Office, P.O. Box 38, French Creek, WV 26218			\$ 150.00	\$ 3600.00



ITEM NO.	EST QUANTITY	DESCRIPTION	Method #	Method Detection Level*	UNIT PRICE	AMOUNT
105	24	Wheeling Office, 131A Peninsula St., Wheeling, WV 26003			\$ 150.00	\$ 3600.00
106	24	Parkersburg Office, 2311 Ohio Ave., Parkersburg, WV 26010			\$ 100.00	\$ 2400.00
107	24	Oak Hill Office, 116 Industrial Dr., Oak Hill, WV 25901			\$ 100.00	\$ 2400.00
108	24	Logan Office, 1101 George Kostas Dr. Logan, 25601			\$ 100.00	\$ 2400.00
109	24	Philippi Office, 105 S Railroad St. Philippi WV 26416			\$ 150.00	\$ 3600.00
110	24	Welch Office, 311 Court St. Welch 24801			\$ 150.00	\$ 3600.00
111	5000	Other locations as Cost Per Mile to pickup site			\$ 1.00	\$ 5000.00
112	10	24 Hour Turn-Around Rush Orders**			50	%
113	10	48 Hour Turn-Around Rush Orders**			25	%
114	10	72 Hour Turn Around Rush Orders**			10	%
<b>TOTAL</b>						\$

All unit pricing quoted should be based on standard (not to exceed two weeks) turn-around time.

\* For Alternate test methods (and methods for which no MDL is listed), list your current method detection limit for each method

\*\*During emergency situations samples may be requested on a quicker turn-around basis. Enter percent increase over standard turn-around time.

Rev. 09/08

# State of West Virginia VENDOR PREFERENCE CERTIFICATE

Certification and application\* is hereby made for Preference in accordance with *West Virginia Code*, §5A-3-37. (Does not apply to construction contracts). *West Virginia Code*, §5A-3-37, provides an opportunity for qualifying vendors to request (at the time of bid) preference for their residency status. Such preference is an evaluation method only and will be applied only to the cost bid in accordance with the *West Virginia Code*. This certificate for application is to be used to request such preference. The Purchasing Division will make the determination of the Resident Vendor Preference, if applicable.

- 1. Application is made for 2.5% resident vendor preference for the reason checked:  
 Bidder is an individual resident vendor and has resided continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,  
 Bidder is a partnership, association or corporation resident vendor and has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or 80% of the ownership interest of Bidder is held by another individual, partnership, association or corporation resident vendor who has maintained its headquarters or principal place of business continuously in West Virginia for four (4) years immediately preceding the date of this certification; or,  
 Bidder is a nonresident vendor which has an affiliate or subsidiary which employs a minimum of one hundred state residents and which has maintained its headquarters or principal place of business within West Virginia continuously for the four (4) years immediately preceding the date of this certification; or,
- 2.  Application is made for 2.5% resident vendor preference for the reason checked:  
 Bidder is a resident vendor who certifies that, during the life of the contract, on average at least 75% of the employees working on the project being bid are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
- 3. Application is made for 2.5% resident vendor preference for the reason checked:  
 Bidder is a nonresident vendor employing a minimum of one hundred state residents or is a nonresident vendor with an affiliate or subsidiary which maintains its headquarters or principal place of business within West Virginia employing a minimum of one hundred state residents who certifies that, during the life of the contract, on average at least 75% of the employees or Bidder's affiliate's or subsidiary's employees are residents of West Virginia who have resided in the state continuously for the two years immediately preceding submission of this bid; or,
- 4. Application is made for 5% resident vendor preference for the reason checked:  
 Bidder meets either the requirement of both subdivisions (1) and (2) or subdivision (1) and (3) as stated above; or,
- 5. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:  
 Bidder is an individual resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard and has resided in West Virginia continuously for the four years immediately preceding the date on which the bid is submitted; or,
- 6. Application is made for 3.5% resident vendor preference who is a veteran for the reason checked:  
 Bidder is a resident vendor who is a veteran of the United States armed forces, the reserves or the National Guard, if, for purposes of producing or distributing the commodities or completing the project which is the subject of the vendor's bid and continuously over the entire term of the project, on average at least seventy-five percent of the vendor's employees are residents of West Virginia who have resided in the state continuously for the two immediately preceding years.

Bidder understands if the Secretary of Revenue determines that a Bidder receiving preference has failed to continue to meet the requirements for such preference, the Secretary may order the Director of Purchasing to: (a) reject the bid; or (b) assess a penalty against such Bidder in an amount not to exceed 5% of the bid amount and that such penalty will be paid to the contracting agency or deducted from any unpaid balance on the contract or purchase order.

By submission of this certificate, Bidder agrees to disclose any reasonably requested information to the Purchasing Division and authorizes the Department of Revenue to disclose to the Director of Purchasing appropriate information verifying that Bidder has paid the required business taxes, provided that such information does not contain the amounts of taxes paid nor any other information deemed by the Tax Commissioner to be confidential.

Under penalty of law for false swearing (*West Virginia Code*, §61-5-3), Bidder hereby certifies that this certificate is true and accurate in all respects; and that if a contract is issued to Bidder and if anything contained within this certificate changes during the term of the contract, Bidder will notify the Purchasing Division in writing immediately.

Bidder: ALS Environmental

Signed: [Signature]

Date: 11/27/2012

Title: Technical Sales Representative

\*Or any combination of preference consideration(s) indicated above, which you are entitled to receive.

RFQ No. DEP15729

STATE OF WEST VIRGINIA  
Purchasing Division

**PURCHASING AFFIDAVIT**

West Virginia Code §5A-3-10a states: No contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and the debt owed is an amount greater than one thousand dollars in the aggregate.

**DEFINITIONS:**

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Debtor" means any individual, corporation, partnership, association, limited liability company or any other form or business association owing a debt to the state or any of its political subdivisions. "Political subdivision" means any county commission; municipality; county board of education; any instrumentality established by a county or municipality; any separate corporation or instrumentality established by one or more counties or municipalities, as permitted by law; or any public body charged by law with the performance of a government function or whose jurisdiction is coextensive with one or more counties or municipalities. "Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceed five percent of the total contract amount.

**EXCEPTION:** The prohibition of this section does not apply where a vendor has contested any tax administered pursuant to chapter eleven of this code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

Under penalty of law for false swearing (*West Virginia Code* §61-5-3), it is hereby certified that the vendor affirms and acknowledges the information in this affidavit and is in compliance with the requirements as stated.

**WITNESS THE FOLLOWING SIGNATURE**

Vendor's Name: ALS Environmental

Authorized Signature: \_\_\_\_\_ Date: 1/27/2012

State of Michigan

County of Ottawa, to-wit:

Taken, subscribed, and sworn to before me this 27<sup>th</sup> day of JANUARY, 2012.

My Commission expires 01/05, 2017.

AFFIX SEAL HERE

NOTARY PUBLIC 



January 27, 2012

Mr. Guy Nisbet  
State of West Virginia  
Department of Administration  
Purchasing Division  
Building 15  
2019 Washington Street East  
Charleston, WV 25305 - 0130

**SUBJECT: RFQ DEP15729, General Analysis of Water and Soil Field Testing**

Dear Mr. Nisbet:

ALS Environmental is happy to submit this proposal for analysis of water and soil, as specified in the RFQ. ALS Environmental as an organization has performed the requested services for countless private and public sector clients. We would look forward to the opportunity to do the same for the State of West Virginia. All subcontracted work would be performed within our network of laboratories. Attached to this letter are the Professional Biographies for key staff, copies of all DEP certifications (except for Radiochemistry which can be attained if required), an executed Vendor Preference Certificate, and an executed, notarized Purchasing Affidavit.

Yours sincerely

Alex J. Csaszar  
Technical Sales Representative

ADDRESS 3352 128<sup>th</sup> Avenue, Holland, Michigan, USA 49424-9236 | PHONE +1 616 399 6070 | FAX +1 616 399 6185  
ALS GROUP USA, CORP. Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

Attachment I

WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF WATER AND WASTE MANAGEMENT

List of Certified Parameters  
for

ALS ENVIRONMENTAL- SOUTH  
CHARLESTON  
SOUTH CHARLESTON, WEST VIRGINIA

PARAMETERS CERTIFIED

HAZARDOUS WASTE CHARACTERISTICS

<u>PROCEDURE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Corrosivity	SW9045D	Electrode
Extraction Procedure Toxicity-Metals	SW1310A	Extraction
Flashpoint	ASTM D93-02(a)	Closed Cup
Ignitability	SW1010	Closed Cup
Paint Filter Test	SW9095B	Gravimetric
Toxicity Characteristic Leaching Procedure-Metals	SW1311	Extraction

NONPOTABLE WATER EXTRACTABLE AND SEMI-VOLATILE ORGANIC CHEMICALS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Acrolein & Acrylonitrile	EPA603	GC
Base/Neutrals & Acids	EPA625	GC/MS
Chlorinated Hydrocarbons	EPA612	GC
Liquid-Liquid Extraction	SW3510	Separatory Funnel
Organochlorine Pesticides & PCBs	EPA608	GC
Organohalide Pesticides	SM20th6630 B	GC
Phthalate Esters	EPA606	GC
Polychlorinated Biphenyls	SW8082	GC
Purgeable Aromatics	EPA602	GC
Purgeables	EPA624	GC/MS
Semivolatile Organic Compounds	SW8270D	GC/MS
Total Petroleum Hydrocarbons (DRO)	SW8015B	GC/FID



NONPOTABLE WATER INORGANIC NONMETALS

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Acidity	SM19th2310 B(4a)	Titrimetric
Alkalinity	SM19th2320 B	Titrimetric
Ammonia	SM20th4500-NH3 B	Distillation
Ammonia	SM20th4500-NH3 C	Titrimetric
Bromide	ASTM D1246	Titrimetric
Carbon, Total Organic (TOC)	SM20th5310 C	Oxidation
Chloride	SM19th4500-Cl-B	Titrimetric
Chlorine, Residual	SM19th4500-Cl B	Iodometric
Chlorine, Residual	SM20th4500-Cl G	Spectrophotometric
Chromium, Hexavalent	EPA218.6 Rev 3.3-1994	IC
Chromium, Trivalent	EPA200.7 minus EPA 218.6	Calculation
Color	SM20th2120 B	Visual Comparison
Conductance, Specific	EPA120.1 Rev 1982	Probe
Cyanide	SM20th4500-CN C	Distillation
Cyanide, Amenable to Chlorination	SM20th4500-CN G	Distillation
Cyanide, Free	SM20th4500-CN I	Distillation
Cyanide, Total	SM20th4500-CN E	Colorimetric
Cyanide, Total & Amenable	SW9010B	Distillation
Fluoride	SM20th4500-F B	Distillation
Fluoride	SM20th4500-F C	ISE
Hardness, Total	SM19th2340 C	Titrimetric
Hardness, Total	SM19th2340 B	Calculation
Nitrate	SM20th4500-NO3 E minus	Calculation
	SM20th4500-NO2 B	
Nitrate-Nitrite	SM20th4500-NO3 E	Spectrophotometric
Nitrite	SM20th4500-NO2 B	Spectrophotometric
Nitrogen, Total Kjeldahl (TKN)	SM20th4500-Norg B	Digestion
Nitrogen, Total Kjeldahl (TKN)	SM20th4500-NH3 B	Distillation
Nitrogen, Total Kjeldahl (TKN)	SM20th4500-NH3 C	Titrimetric
Oil & Grease	EPA1664 A	Gravimetric
Oxygen Demand, Biochemical (BOD)	SM19th5210 B	Probe
Oxygen Demand, Chemical (COD)	HACH 8000	Spectrophotometric
Oxygen, Dissolved	SM20th4500-O G	Probe
pH (Hydrogen Ion)	SM20th4500-H B	Electrode
Phenolics, Total	EPA420.1 Rev 1978	Colorimetric
Phosphorus, Ortho	EPA365.3 Rev 1978	Spectrophotometric
Phosphorus, Total	SM20th4500-P B.5	Digestion
Phosphorus, Total	EPA365.3 Rev 1978	Spectrophotometric
Solids, Dissolved	SM19th2540 C	Gravimetric
Solids, Settleable	SM19th2540 F	Imhoff
Solids, Suspended	SM19th2540 D	Gravimetric
Solids, Total	SM19th2540 B	Gravimetric
Sulfate	SM15th426 C	Turbidimetric
Sulfide	SM20th4500-S F	Titrimetric
Surfactants (MBAS)	SM20th5540 C	Spectrophotometric
Temperature	SM19th2550 B	Thermometric
Turbidity	EPA180.1 Rev 2.0-1993	Turbidimetric

NONPOTABLE WATER MICROBIOLOGY

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Coliform, Fecal (MF)	SM20th9222 D	Membrane Filter
Coliform, Fecal (MPN)	SM20th9221 E	Multiple Tube
Coliform, Total (MF)	SM20th9222 B	Membrane Filter
Coliform, Total (MPN)	SM20th9221 B	Multiple Tube

NONPOTABLE WATER TRACE METALS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Aluminum	EPA200.7 Rev 4.4-1994	ICP
Aluminum	SW6010B	ICP
Aluminum	EPA200.8 Rev 5.4-1994	ICP-MS
Antimony	EPA200.7 Rev 4.4-1994	ICP
Antimony	SW6010B	ICP
Antimony	EPA200.8 Rev 5.4-1994	ICP-MS
Antimony	EPA200.7 Rev 4.4-1994	ICP
Arsenic	SW6010B	ICP
Arsenic	EPA200.8 Rev 5.4-1994	ICP-MS
Arsenic	EPA200.7 Rev 4.4-1994	ICP
Barium	SW6010B	ICP
Barium	EPA200.8 Rev 5.4-1994	ICP-MS
Barium	EPA200.7 Rev 4.4-1994	ICP
Beryllium	SW6010B	ICP
Beryllium	EPA200.8 Rev 5.4-1994	ICP-MS
Beryllium	EPA200.7 Rev 4.4-1994	ICP
Boron	SW6010B	ICP
Boron	EPA200.7 Rev 4.4-1994	ICP
Cadmium	SW6010B	ICP
Cadmium	EPA200.8 Rev 5.4-1994	ICP-MS
Cadmium	EPA200.7 Rev 4.4-1994	ICP
Calcium	SW6010B	ICP
Calcium	EPA200.7 Rev 4.4-1994	ICP
Chromium	SW6010B	ICP
Chromium	EPA200.8 Rev 5.4-1994	ICP-MS
Chromium	EPA200.7 Rev 4.4-1994	ICP
Cobalt	SW6010B	ICP
Cobalt	EPA200.8 Rev 5.4-1994	ICP-MS
Cobalt	EPA200.7 Rev 4.4-1994	ICP
Copper	SW6010B	ICP
Copper	EPA200.8 Rev 5.4-1994	ICP-MS
Copper	EPA200.7 Rev 4.4-1994	ICP
Iron	SW6010B	ICP
Iron	EPA200.7 Rev 4.4-1994	ICP
Lead	SW6010B	ICP
Lead	EPA200.8 Rev 5.4-1994	ICP-MS
Lead	EPA200.7 Rev 4.4-1994	ICP
Magnesium	SW6010B	ICP
Magnesium	EPA200.7 Rev 4.4-1994	ICP
Manganese	SW6010B	ICP
Manganese	EPA200.8 Rev 5.4-1994	ICP-MS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Mercury	EPA1631E	CVAA
Mercury	EPA245.1 Rev 3.0-1994	CVAA
Mercury	SW7470A	CVAA
Metals, Dissolved	EPA200.7 Rev 4.4-1994	Filtration
Metals, Dissolved	EPA200.8 Rev 5.4-1994	Filtration
Metals, Total	EPA200.7 Rev 4.4-1994	Digestion
Metals, Total	EPA200.8 Rev 5.4-1994	Digestion
Metals, Total	SW3010A	Digestion
Molybdenum	EPA200.7 Rev 4.4-1994	ICP
Molybdenum	SW6010B	ICP
Molybdenum	EPA200.8 Rev 5.4-1994	ICP-MS
Nickel	EPA200.7 Rev 4.4-1994	ICP
Nickel	SW6010B	ICP
Nickel	EPA200.8 Rev 5.4-1994	ICP-MS
Potassium	EPA200.7 Rev 4.4-1994	ICP
Potassium	SW6010B	ICP
Selenium	EPA200.7 Rev 4.4-1994	ICP
Selenium	SW6010B	ICP
Selenium	EPA200.8 Rev 5.4-1994	ICP-MS
Silver	EPA200.7 Rev 4.4-1994	ICP
Silver	SW6010B	ICP
Silver	EPA200.8 Rev 5.4-1994	ICP-MS
Sodium	EPA200.7 Rev 4.4-1994	ICP
Sodium	SW6010B	ICP
Strontium	EPA200.7 Rev 4.4-1994	ICP
Strontium	SW6010B	ICP
Thallium	EPA200.7 Rev 4.4-1994	ICP
Thallium	SW6010B	ICP
Thallium	EPA200.8 Rev 5.4-1994	ICP-MS
Tin	EPA200.7 Rev 4.4-1994	ICP
Tin	SW6010B	ICP
Titanium	EPA200.7 Rev 4.4-1994	ICP
Titanium	SW6010B	ICP
Vanadium	EPA200.7 Rev 4.4-1994	ICP
Vanadium	SW6010B	ICP
Vanadium	EPA200.8 Rev 5.4-1994	ICP-MS
Zinc	EPA200.7 Rev 4.4-1994	ICP
Zinc	SW6010B	ICP
Zinc	EPA200.8 Rev 5.4-1994	ICP-MS

NONPOTABLE WATER VOLATILE ORGANIC CHEMICALS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Closed System Purge & Trap	SW5035	Extraction
Halogenated & Aromatic Volatiles	SW8021B	GC
Purge & Trap For Aqueous Samples	SW5030B	Extraction
Total Petroleum Hydrocarbons (GRO)	SW8015B	GC/FID
Volatile Organic Compounds	SW8260B	GC/MS

SOLID AND CHEMICAL EXTRACTABLE AND SEMI-VOLATILE ORGANIC CHEMICALS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Polychlorinated Biphenyls	SW8082	GC
Semivolatile Organic Compounds	SW8270D	GC/MS
Total Petroleum Hydrocarbons (DRO)	SW8015B	GC/FID
Ultrasonic	SW3550C	Extraction

SOLID AND CHEMICAL INORGANIC NONMETALS

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Ammonia	SM20th4500-NH3 B	Distillation
Ammonia	SM20th4500-NH3 C	Titrimetric
Carbon, Total Organic (TOC)	Walkley-Black	Colorimetric
Chromium, Hexavalent	ASTM D1687(A)	Digestion
Chromium, Hexavalent	SW3060A	Extraction
Cyanide, Total	SW9013	Titrimetric
Cyanide, Total	SW9014	Distillation
Cyanide, Total & Amenable	SW9010B	Digestion
Nitrogen, Total Kjeldahl (TKN)	SM20th4500-Norg B	Distillation
Nitrogen, Total Kjeldahl (TKN)	SM20th4500-NH3 B	Titrimetric
Nitrogen, Total Kjeldahl (TKN)	SM20th4500-NH3 C	Gravimetric
Oil & Grease	SW9071B	Electrode
pH (Hydrogen Ion)	SW9040C	Electrode
pH (Hydrogen Ion)	SW9045D	Digestion
Phosphorus, Total	SM20th4500-P B.5	Spectrophotometric
Phosphorus, Total	SM20th4500-P E	Gravimetric
Solids, Total, Fixed, & Volatile	SM20th2540 G	Gravimetric
Solids, Volatile	EPA160.4	

SOLID AND CHEMICAL MICROBIOLOGY

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Coliform, Fecal (MPN)	SM20th9221 E	Multiple Tube

SOLID AND CHEMICAL TRACE METALS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Aluminum	SW6010B	ICP
Antimony	SW6010B	ICP
Arsenic	SW6010B	ICP
Barium	SW6010B	ICP
Beryllium	SW6010B	ICP
Cadmium	SW6010B	ICP
Calcium	SW6010B	ICP
Chromium	SW6010B	ICP
Cobalt	SW6010B	ICP
Copper	SW6010B	ICP
Iron	SW6010B	ICP
Lead	SW6010B	ICP

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Magnesium	SW6010B	ICP
Manganese	SW6010B	ICP
Mercury	SW7471A	CVAA
Metals, Total	SW3050B	Digestion
Molybdenum	SW6010B	ICP
Nickel	SW6010B	ICP
Potassium	SW6010B	ICP
Selenium	SW6010B	ICP
Silver	SW6010B	ICP
Sodium	SW6010B	ICP
Strontium	SW6010B	ICP
Thallium	SW6010B	ICP
Tin	SW6010B	ICP
Titanium	SW6010B	ICP
Vanadium	SW6010B	ICP
Zinc	SW6010B	ICP

SOLID AND CHEMICAL VOLATILE ORGANIC CHEMICALS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Closed System Purge & Trap	SW5035	Extraction
Halogenated & Aromatic Volatiles	SW8021B	GC
Total Petroleum Hydrocarbons (GRO)	SW8015B	GC/FID

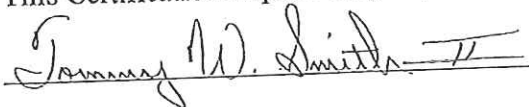
WHOLE EFFLUENT TOXICITY

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Acute- Invertebrate	EPA821-R-02-012 2002.0	Acute
Acute- Invertebrate	EPA821-R-02-012 2021.0	Acute
Acute- Vertebrate	EPA821-R-02-012 2000.0	Acute
Chronic- Invertebrate	EPA821-R-02-013 1002.0	Chronic
Chronic- Vertebrate	EPA821-R-02-013 1000.0	Chronic

This laboratory may test **ONLY** for those environmental parameters listed above for compliance reporting purposes. All testing must be by the test method cited in the current application for certification.

This Certification Expires May 31, 2012.

Certificate No 006



Issued on January 01, 2012

Tommy W. Smith II  
Quality Assurance Officer



Attachment I

WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF WATER AND WASTE MANAGEMENT

Annual Certified Parameter List

for

ALS LABORATORY GROUP, ENVIRONMENTAL DIVISION - HOLLAND MICHIGAN  
HOLLAND, MICHIGAN

PARAMETERS CERTIFIED

NONPOTABLE WATER INORGANIC NONMETALS

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Acidity	SM18th2310 B (4a)	Titrimetric
Alkalinity	SM18th2320 B	Titrimetric
Conductance, Specific	EPA120.1	Probe
Demand, Biochemical(BOD)	SM18th5210 B	Probe
Demand, Chemical Oxygen (COD)	EPA410.4	Spectrophotometric
Oil & Grease	EPA1664A	Gravimetric
Solids, Suspended	SM18th2540 D	Gravimetric
Sulfate	EPA300.0	IC
pH (Field Test)	SM18th4500-H <sup>+</sup> B	Probe

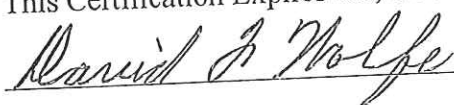
NONPOTABLE WATER TRACE METALS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Aluminum	EPA200.8 Rev 5.4-1994	ICP-MS
Iron	EPA200.8 Rev 5.4-1994	ICP-MS
Manganese	EPA200.8 Rev 5.4-1994	ICP-MS

This laboratory may test **ONLY** for those environmental parameters listed above for compliance reporting purposes. All testing must be by the test method cited in the current application for certification.

This Certification Expires On, **31 August 2012**.

Certificate No. **355**.



Issued On, 30 June 2011.

David F Wolfe, PhD  
Quality Assurance Officer

Attachment I

WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF WATER AND WASTE MANAGEMENT

Annual Certified Parameter List

for

ALS LABORATORY GROUP, ENVIRONMENTAL DIVISION - HOLLAND MICHIGAN  
HOLLAND, MICHIGAN

PARAMETERS CERTIFIED

NONPOTABLE WATER INORGANIC NONMETALS

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Chloride	EPA300.0	IC
Hardness	SM19th2340 C	Titrimetric
Solids, Dissolved	SM19th2540 C	Gravimetric
Surfactants	SM19th5540 C	Spectrometric

NONPOTABLE WATER TRACE METALS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Arsenic	EPA200.8 Rev 5.4-1994	ICP-MS
Barium	EPA200.8 Rev 5.4-1994	ICP-MS
Calcium	EPA200.8 Rev 5.4-1994	ICP-MS
Lead	EPA200.8 Rev 5.4-1994	ICP-MS
Magnesium	EPA200.8 Rev 5.4-1994	ICP-MS
Sodium	EPA200.8 Rev 5.4-1994	ICP-MS
Strontium	EPA200.8 Rev 5.4-1994	ICP-MS

NONPOTABLE WATER VOLATILES

<u>METHOD</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
BTEX	SW8260B	GC/MS
Methane	RSK-175	GC

SOLID INORGANIC NONMETALS

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Chloride	EPA300.0	IC

### SOLID TRACE METALS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Arsenic	SW6020A	ICP-MS
Barium	SW6020A	ICP-MS
Calcium	SW6020A	ICP-MS
Lead	SW6020A	ICP-MS
Magnesium	SW6020A	ICP-MS
Manganese	SW6020A	ICP-MS
Sodium	SW6020A	ICP-MS
Strontium	SW6020A	ICP-MS

### SOLID VOLATILES

<u>METHOD</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
BTEX	SW8260B	GC/MS
Methane	RSK-175	GC
Ethane	RSK-175	GC
Ethene	RSK-175	GC

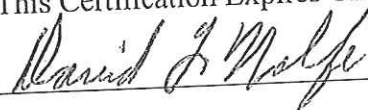
### EXTRACTION VOLATILES

<u>METHOD</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Volatiles	SW5030	Purge & Trap
Volatiles	RSK-175	Purge & Trap

This laboratory may test **ONLY** for those environmental parameters listed above for compliance reporting purposes. All testing must be by the test method cited in the current application for certification.

This Certification Expires On, **31 August 2012.**

Certificate No. **355.**



Issued On, 30 June 2011.

*Addendum 1*, Issued On, 12 December 2011.

David F Wolfe, PhD  
Quality Assurance Officer

Attachment I

WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF WATER AND WASTE MANAGEMENT

Annual Certified Parameter List

for

COLUMBIA ANALYTICAL SERVICES, INCORPORATED  
HOUSTON, TEXAS

PARAMETERS CERTIFIED

NONPOTABLE WATER EXTRACTABLE & SEMI-VOLATILE ORGANICS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
PCB Congeners	EPA1668A	HRGC/HRMS

NONPOTABLE WATER DIOXIN & DIBENZOFURAN

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Dioxins & Furans (PCDD/F)	EPA1613B	HRGC/HRMS
Dioxins & Furans (PCDD/F)	SW8290	HRGC/HRMS

SOLID & CHEMICAL EXTRACTABLE & SEMI-VOLATILE ORGANICS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
PCB Congeners	EPA1668A	HRGC/HRMS

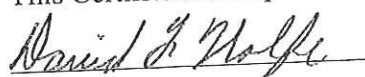
SOLID & CHEMICAL DIOXIN & DIBENZOFURAN

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Dioxins & Furans (PCDD/F)	EPA1613B	HRGC/HRMS
Dioxins & Furans (PCDD/F)	SW8290	HRGC/HRMS

This laboratory may test **ONLY** for those environmental parameters listed above for compliance reporting purposes. All testing must be by the test method cited in the current application for certification.

This Certification Expires On, **30 June 2012**.

Certificate No. **347**.

 Issued On, **30 April 2011**.

David F Wolfe, PhD  
Quality Assurance Officer

**WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
DIVISION OF WATER AND WASTE MANAGEMENT**

**Annual Certified Parameter List**

for

**ALS ENVIRONMENTAL – (FORMERLY - ALSI MIDDLETOWN, PA)  
MIDDLETOWN, PENNSYLVANIA**

**PARAMETERS CERTIFIED**

**NONPOTABLE WATER INORGANIC NONMETALS**

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Acidity	SM20th2310 B	Titrimetric
Alkalinity	SM20th2320 B	Titrimetric
Ammonia	ASTM D6919-03	IC
Bromide	EPA300.0	IC
Bromide	SW9056A	IC
Chloride	EPA300.0	IC
Chloride	SW9056A	IC
Chromium, Hexavalent	SM21th3500-Cr <sup>6+</sup> B	Spectrometric
Conductance, Specific	EPA120.1	Probe
Conductance, Specific	SM20th2510 B	Probe
Conductance, Specific	SW9050A	Probe
Cyanide, Weak Acid Dissociable	SM20th4500-CN <sup>-</sup> I	Spectrometric
Cyanide, Free	EPA335.4	Spectrometric
Fluoride	EPA300.0	IC
Fluoride	SW9056A	IC
Kjeldahl, Total Nitrogen	SM20th4500-N <sub>org</sub> B	Titrimetric
Nitrate	EPA300.0	IC
Nitrate	SW9056A	IC
Nitrate-Nitrite	EPA300.0	IC
Nitrite	EPA300.0	IC
Oil & Grease	EPA1664A	Gravimetric
Organic Carbon, Total	SM21th5310 B	Oxidation
pH(Field Test)	SM20th4500-H B	Probe
Solids, Dissolved	SM21th2540 C	Gravimetric
Solids, Settleable	SM21th2540 F	Gravimetric
Solids, Suspended	SM21th2540 D	Gravimetric
Sulfate	EPA300.0	IC
Sulfate	SW9056A	IC
Temperature(Field Test)	SM21st2550 B	Probe



## NONPOTABLE WATER TRACE METALS

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Aluminum	EPA200.7 Rev 4.4-1994	ICP
Antimony	EPA200.7 Rev 4.4-1994	ICP
Arsenic	EPA200.7 Rev 4.4-1994	ICP
Barium	EPA200.7 Rev 4.4-1994	ICP
Beryllium	EPA200.7 Rev 4.4-1994	ICP
Boron	EPA200.7 Rev 4.4-1994	ICP
Cadmium	EPA200.7 Rev 4.4-1994	ICP
Calcium	EPA200.7 Rev 4.4-1994	ICP
Cesium	EPA200.7 Rev 4.4-1994	ICP
Chromium	EPA200.7 Rev 4.4-1994	ICP
Cobalt	EPA200.7 Rev 4.4-1994	ICP
Copper	EPA200.7 Rev 4.4-1994	ICP
Iron	EPA200.7 Rev 4.4-1994	ICP
Lead	EPA200.7 Rev 4.4-1994	ICP
Lithium	EPA200.7 Rev 4.4-1994	ICP
Magnesium	EPA200.7 Rev 4.4-1994	ICP
Manganese	EPA200.7 Rev 4.4-1994	ICP
Molybdenum	EPA200.7 Rev 4.4-1994	ICP
Nickel	EPA200.7 Rev 4.4-1994	ICP
Potassium	EPA200.7 Rev 4.4-1994	ICP
Selenium	EPA200.7 Rev 4.4-1994	ICP
Silver	EPA200.7 Rev 4.4-1994	ICP
Sodium	EPA200.7 Rev 4.4-1994	ICP
Strontium	EPA200.7 Rev 4.4-1994	ICP
Thallium	EPA200.7 Rev 4.4-1994	ICP
Tin	EPA200.7 Rev 4.4-1994	ICP
Titanium	EPA200.7 Rev 4.4-1994	ICP
Vanadium	EPA200.7 Rev 4.4-1994	ICP
Zinc	EPA200.7 Rev 4.4-1994	ICP
Aluminum	EPA200.8 Rev 5.4-1994	ICP-MS
Antimony	EPA200.8 Rev 5.4-1994	ICP-MS
Arsenic	EPA200.8 Rev 5.4-1994	ICP-MS
Barium	EPA200.8 Rev 5.4-1994	ICP-MS
Beryllium	EPA200.8 Rev 5.4-1994	ICP-MS
Cadmium	EPA200.8 Rev 5.4-1994	ICP-MS
Chromium	EPA200.8 Rev 5.4-1994	ICP-MS
Cobalt	EPA200.8 Rev 5.4-1994	ICP-MS
Copper	EPA200.8 Rev 5.4-1994	ICP-MS
Lead	EPA200.8 Rev 5.4-1994	ICP-MS
Manganese	EPA200.8 Rev 5.4-1994	ICP-MS
Mercury	EPA200.8 Rev 5.4-1994	ICP-MS
Molybdenum	EPA200.8 Rev 5.4-1994	ICP-MS
Nickel	EPA200.8 Rev 5.4-1994	ICP-MS
Selenium	EPA200.8 Rev 5.4-1994	ICP-MS
Silver	EPA200.8 Rev 5.4-1994	ICP-MS
Thallium	EPA200.8 Rev 5.4-1994	ICP-MS
Vanadium	EPA200.8 Rev 5.4-1994	ICP-MS
Zinc	EPA200.8 Rev 5.4-1994	ICP-MS
Mercury	EPA245.1	CVAA
Mercury	EPA1631	CVAA/Low Level
Mercury	SW7470A	CVAA

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Aluminum	SW6010	ICP
Antimony	SW6010	ICP
Arsenic	SW6010	ICP
Barium	SW6010	ICP
Beryllium	SW6010	ICP
Boron	SW6010	ICP
Cadmium	SW6010	ICP
Calcium	SW6010	ICP
Chromium	SW6010	ICP
Cobalt	SW6010	ICP
Copper	SW6010	ICP
Iron	SW6010	ICP
Lead	SW6010	ICP
Magnesium	SW6010	ICP
Manganese	SW6010	ICP
Molybdenum	SW6010	ICP
Nickel	SW6010	ICP
Potassium	SW6010	ICP
Selenium	SW6010	ICP
Silver	SW6010	ICP
Sodium	SW6010	ICP
Strontium	SW6010	ICP
Thallium	SW6010	ICP
Tin	SW6010	ICP
Titanium	SW6010	ICP
Vanadium	SW6010	ICP
Zinc	SW6010	ICP
Aluminum	SW6020	ICP/MS
Antimony	SW6020	ICP/MS
Arsenic	SW6020	ICP/MS
Barium	SW6020	ICP/MS
Beryllium	SW6020	ICP/MS
Cadmium	SW6020	ICP/MS
Calcium	SW6020	ICP/MS
Cesium	SW6020	ICP/MS
Chromium	SW6020	ICP/MS
Cobalt	SW6020	ICP/MS
Copper	SW6020	ICP/MS
Iron	SW6020	ICP/MS
Lead	SW6020	ICP/MS
Lithium	SW6020	ICP/MS
Magnesium	SW6020	ICP/MS
Manganese	SW6020	ICP/MS
Molybdenum	SW6020	ICP/MS
Nickel	SW6020	ICP/MS
Potassium	SW6020	ICP/MS
Selenium	SW6020	ICP/MS
Silicon	SW6020	ICP/MS
Silver	SW6020	ICP/MS
Sodium	SW6020	ICP/MS
Strontium	SW6020	ICP/MS
Thallium	SW6020	ICP/MS
Tin	SW6020	ICP/MS
Titanium	SW6020	ICP/MS
Vanadium	SW6020	ICP/MS
Zinc	SW6020	ICP/MS

**NONPOTABLE WATER VOLATILE ORGANICS**

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Purgeables	EPA624	GC/MS
Total Petroleum Hydrocarbons (GRO)	SW8015B	GC/FID
Volatile Organics	SW8260	GC/MS

**NONPOTABLE WATER EXTRACTABLE & SEMI-VOLATILE ORGANICS**

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Pesticides & PCBs	EPA608	GC/ECD
Base/Neutrals & Acids	EPA625	GC/MS
Total Petroleum Hydrocarbons (DRO)	SW8015	GC/FID
Organochlorine Pesticides	SW8081	GC/ECD
Polychlorinated Biphenyls	SW8082	GC/ECD
Chlorinated Herbicides	SW8151A	GC/ECD
Semi-Volatile Organics	SW8270	GC/MS

**SOLID & CHEMICAL INORGANICS**

<u>ANALYTE</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Chloride	SW9056A	IC
Sulfate	SW9056A	IC

**SOLID & CHEMICAL TRACE METALS**

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Aluminum	SW6010C	ICP
Antimony	SW6010C	ICP
Arsenic	SW6010C	ICP
Barium	SW6010C	ICP
Beryllium	SW6010C	ICP
Boron	SW6010C	ICP
Cadmium	SW6010C	ICP
Calcium	SW6010C	ICP
Chromium	SW6010C	ICP
Cobalt	SW6010C	ICP
Copper	SW6010C	ICP
Iron	SW6010C	ICP
Lead	SW6010C	ICP
Magnesium	SW6010C	ICP
Manganese	SW6010C	ICP
Molybdenum	SW6010C	ICP
Nickel	SW6010C	ICP
Potassium	SW6010C	ICP
Selenium	SW6010C	ICP
Silver	SW6010C	ICP
Sodium	SW6010C	ICP
Strontium	SW6010C	ICP
Thallium	SW6010C	ICP
Tin	SW6010C	ICP
Titanium	SW6010C	ICP
Vanadium	SW6010C	ICP
Zinc	SW6010C	ICP

<u>METAL</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Aluminum	SW6020A	ICP-MS
Antimony	SW6020A	ICP-MS
Arsenic	SW6020A	ICP-MS
Barium	SW6020A	ICP-MS
Beryllium	SW6020A	ICP-MS
Cadmium	SW6020A	ICP-MS
Calcium	SW6020A	ICP-MS
Chromium	SW6020A	ICP-MS
Cobalt	SW6020A	ICP-MS
Copper	SW6020A	ICP-MS
Iron	SW6020A	ICP-MS
Lead	SW6020A	ICP-MS
Magnesium	SW6020A	ICP-MS
Manganese	SW6020A	ICP-MS
Mercury	SW6020A	ICP-MS
Molybdenum	SW6020A	ICP-MS
Nickel	SW6020A	ICP-MS
Potassium	SW6020A	ICP-MS
Selenium	SW6020A	ICP-MS
Silver	SW6020A	ICP-MS
Sodium	SW6020A	ICP-MS
Strontium	SW6020A	ICP-MS
Thallium	SW6020A	ICP-MS
Tin	SW6020A	ICP-MS
Titanium	SW6020A	ICP-MS
Vanadium	SW6020A	ICP-MS
Zinc	SW6020A	ICP-MS
Mercury	SW7471B	CVAA

**SOLID & CHEMICAL VOLATILE ORGANICS**

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Total Petroleum Hydrocarbons (GRO)	SW8015B	GC/FID
Volatile Organic Compounds	SW8260B	GC/MS

**SOLID & CHEMICAL EXTRACTABLE & SEMI-VOLATILE ORGANICS**

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Total Petroleum Hydrocarbons (DRO)	SW8015B	GC/FID
Organochlorine Pesticides	SW8081B	GC/ECD
Polychlorinated Biphenyls	SW8082A	GC/ECD
Chlorinated Herbicides	SW8151A	GC/ECD
Semivolatiles Organic Compounds	SW8270D	GC/MS

## EXTRACTION, DIGESTION, CLEANUP, & PREPARATORY METHODS

<u>GROUP</u>	<u>METHOD</u>	<u>TECHNOLOGY</u>
Metals digestion	SW3015	Microwave
Metals digestion	SW3050B	Acid
Metals digestion	SW3051A	Microwave
Extraction	SW3510C	Separatory Funnel (LL)
Extraction	SW3545	Pressurized Fluid (PFE)
Extraction	SW3550B	Ultrasonic (UE)
Cleanup	SW3620C	Florisil
Cleanup	SW3660B	Sulfur
Cleanup	SW3665A	Acid/Permanganate

This laboratory may test **ONLY** for those environmental parameters listed above for compliance reporting purposes. All testing must be by the test method cited in the current application for certification.

This Certification Expires On, **31 July 2012.**

Certificate No. 343.

*David F Wolfe*

Issued On, 25 May 2011.

Revision 1, Issued On, 9 June 2011.

David F Wolfe, PhD  
Quality Assurance Officer





## Professional Biography

**Rebecca Kiser**  
Laboratory Manager

### Education

B.S. - Biology  
West Virginia State College, 1996

### Professional Summary

Over 16 years of environmental laboratory experience, including over 10 years of laboratory supervision and management experience. Current responsibilities include employee and workload management, technical requirements and requests, communicates client needs to the laboratory and advises clients of work status, and reviews all final reports.

### Work Experience

ALS Environmental, South Charleston, WV  
Laboratory Manager  
01/01/12 to present

Standard Laboratories, Inc., South Charleston, WV  
Environmental Supervisor  
2010-2011

AC&S, Inc., Nitro, WV  
Assistant Laboratory Manager  
2001- 2010  
Organic Analyst  
1996 - 2001

ADDRESS 3352 128<sup>th</sup> Avenue, Holland, Michigan, USA 49424-9236 | PHONE +1 616 399 6070 | FAX +1 616 399 6185

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Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER



## Professional Biography

**Jeff Glaser**  
Laboratory Director

### Education

B.S. - Biochemistry  
Michigan State University, 1987

### Professional Summary

Over 22 years of environmental laboratory experience, including over 17 years of laboratory management experience. In-depth knowledge of analytical laboratory functions at all levels: operations management, fiscal management, HR support, project management, and sales & marketing. Driven, results-oriented, and client-focused leader with demonstrated success in exceeding client expectations for both data quality and service in a demanding and fast-paced industry. Proven track record of enhancement of laboratory performance achieved by implementing state-of-the-art analytical instrumentation, new technology developments, strategic planning, and problem solving. Business-savvy professional experienced in P&L statements, business development, benefit administration, customer service and purchasing functions.

### Work Experience

ALS Environmental, Holland, MI  
Laboratory Director  
10/25/11 to present  
Technical Director  
11/17/10 - 10/25/11

TriMatrix Laboratories, Inc. Grand Rapids, MI  
Operations Manager  
1998 - 2010  
Organics Manager  
1996 - 1998  
Laboratory Manager - Muskegon, MI Laboratory  
1994-1996

Great Lakes Environmental Laboratories, Muskegon, MI  
Laboratory Supervisor  
1992 - 1994

Anatech Analytical Laboratories, Ludington, MI  
1989 - 1992  
Organic Chemist

### Additional Achievements, Awards, Honors, and Skills

Restek Capillary Column Chromatography Seminar  
ACS Short Course, Introduction to Mass Spectral Interpretation  
Dunn and Bradstreet Workshop, Supervisory Solutions  
Not So Basic Training Workshops, Supervisory Training/ Customer Service  
DoD Quality Systems Manual Training 2006, 2009, and 2010  
DoD UFP QAPP Preparation 2010

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## Professional Biography

**Dan Delinger**  
Quality Assurance Manager

### Education

B.S. - Chemistry  
Purdue University, 1985

### Professional Summary

36 years of experience in laboratory operations including: sample preparation, sample analysis, method development, method validation, project management, sales, quality assurance, and laboratory management. Strong background in isotopic dilution techniques utilizing tandem, low-resolution, and high-resolution mass spectrometers. Current responsibilities include management of the quality control program, document archive system, and laboratory accreditations. Able to effectively communicate with all levels of personnel including client, laboratory, and regulatory staff.

### Work Experience

ALS Environmental, Holland, MI  
Quality Assurance Manager  
2002 to present

North Creek Analytical - Seattle, WA  
Technical Director  
1999 - 2002

Core Laboratories - Indianapolis, IN  
Analyst, Analytical Supervisor, Client Services, Operations, & Laboratory Manager  
1986 - 1999

RCA - Indianapolis, IN  
Associate Engineer  
1980 - 1986

### Additional Achievements, Awards, Honors, and Skills

#### Continuing Education

Dale Carnegie - Effective Communication and Human Relations  
Mass Spectral Interpretation  
Accounting for Non-Accountants  
Selling Laboratory Services  
Project Management for Scientists



## Professional Biography

**Joe Ribar**  
Operations Manager

### Education

B.S. - Biology  
Purdue University, 2002

### Professional Summary

10 years of laboratory experience that includes wastewater/groundwater monitoring, bench analysis, and project management. Current responsibilities include management of greater than \$1 million in projects annually, interacting with clients and lab personnel through effective communication, and working with sales staff to develop new and existing clients. Duties also include overseeing our laboratory and field staff of 35+ people, ensuring the work gets completed in a timely manner, and client expectations are met/exceeded.

### Work Experience

ALS Environmental, Holland, MI  
Operations Manager/Project Manager  
October 2011 - present

ALS Environmental, Holland, MI  
Project Manager, Field Services Technician  
2004 - October 2011

Severn Trent Laboratories, Valparaiso, IN  
Analytical Chemist  
2002 - 2004

### Additional Achievements, Awards, Honors, Skills and Training

Baker Communications - Exceptional Management Skills/Customer Service/ Time Management/Team Building Skills

40 Hour OSHA HAZWOPER Training



## Professional Biography

**Bill Carey**  
IT/HSE/Project Manager

### Education

B.S. - Marine Science/Biology  
University of Tampa, 1989

### Professional Summary

19 years of environmental laboratory experience including analysis (GC and GCMS), project management, IT and safety. Client focused and detail oriented.

Current responsibilities include PC, network and LIMS management. Also includes some project management of client activities, technical requirements and requests, quotations, and project needs as projects progress through the laboratory - reviews all project requirements, support documentation, and final reports. Communicates client needs to the laboratory and advises clients of work status. Responsibilities also include safety policy implementation and monitoring safety of the facility, including training.

### Work Experience

ALS Environmental, Holland, MI  
IT, Project Manager, Health & Safety, Analyst  
1992 to present

### Additional Achievements, Awards, Honors, Skills and Training

Continuing Education  
Graduate Certificate, Hazardous Waste Management, Wayne State University  
40-Hour OSHA HAZWOPER Certified  
Red Cross First Aid and CPR Certified



## Professional Biography

**Chad E. Stoike**  
Metals Supervisor

### Education

B.S. - Chemistry  
Grand Valley State University, 2001

### Professional Summary

10 years of professional laboratory experience including data management, quality assurance, bench analysis, method development, and technical troubleshooting. Current responsibilities include employee and workload management, acquisition, processing and validation of legally defensible data, ICPMS, CVAA and CVAF analysis and maintenance, and promoting strict adherence to prescribed methodologies within a safety conscious environment.

### Work Experience

ALS Environmental, Holland, MI  
Metals Department Supervisor / Senior ICPMS Analyst  
2007 to present

Quality Assurance Assistant  
2006 - 2007

Inorganic Chemist  
2002 - 2006

Organic Prep Chemist  
2001 - 2002

### Additional Achievements, Awards, Honors, Skills and Training

#### Analytical Techniques

Organic extractions including: Soxhlet, Soxtec, separatory funnel  
Wet chemistry techniques including: titrations, gravimetric analysis, distillations, solid phase extraction  
TCLP/SPLP extraction protocol  
Metals digestions: Microwave, ultra-trace, and hotblock techniques.  
Lead Fractionation (Fine & Coarse)

#### Instrumentation Experience

Agilent 7500CE ICPMS  
Cetac M6000 and M6100 Cold Vapor Atomic Absorption  
Cetac M8000 Cold Vapor Atomic Fluorescence (1631 Low-Level Mercury)  
Dionex ICS-2000 Ion Chromatograph  
Lachat QuickChem 8100

#### Continuing Education

ALS Environmental Career Quest management training  
Dale Carnegie Effective Communication and Human Relations

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## Professional Biography

Jennifer Jones-Grzan  
Wet Chemistry Department Supervisor

### Education

B.S. - Geology  
Hope College, 2001

### Professional Summary

Over 9 years of professional laboratory experience that includes analysis of environmental samples utilizing various wet chemistry techniques, method development, implementation of instrumentation, and daily management of the wet chemistry operations area. Current responsibilities include analysis of environmental samples, daily oversight of the wet chemistry operations area, scheduling staff according to work load requirements, method development and implementation, and interfacing with internal and external clients when needed.

### Work Experience

ALS Environmental, Holland, MI  
Wet Chemistry Supervisor  
2004 to present

Inorganic Analyst  
2002 - 2004

### Additional Achievements, Awards, Honors, Skills and Training

Instrumentation Experience  
Lachat Quickchem 8500  
O.I. Analytical TOC 1010  
Dionex ICS-2000  
O.I. Analytical Available CN Analyzer  
Thermo Euroglas AOX/TOX Analyzer

Continuing Education  
ALS CareerQuest Training Program for professional development

## Columbia Analytical Resumes for Key Personnel

**ERIC A. BAUCH**

YEAR 2010 TO PRESENT

*Columbia Analytical Services, Inc., 19408 Park Row, Ste. 320, Houston, TX 77084 800.434.6946*

<b>CURRENT POSITION</b>	<b>Scientist I – 2010 to Present</b>
<b>RESPONSIBILITIES</b>	<p><b>Group Leader, Extraction Laboratory, Columbia Analytical Services, Inc., Houston, Texas, 2011.</b> Oversee operations in Extraction Laboratory and SMO. Primary responsibilities include sample login, extraction, cleanup, and final concentration. Schedule daily tasks for extraction analysts. Run Methods 1668A, 1613B, 8280, 8290, TO-9A and 23. Aid in continuous improvement of existing methods and development of new methods. Perform non-routine and complex technical assignments.</p> <p><b>Documentation of Demonstration of Capabilities is available for review.</b></p>
<b>EXPERIENCE</b>	<p><b>Extractions Analyst III, Columbia Analytical Services, Houston, Texas, 2010 – 2011.</b> Performed organic extractions, extract clean-up and concentration for methods 1668A, 1613B, 8280, 8290, TO-9A and 23. Performed sample management duties including receipt, log-in and bottle order preparation.</p> <p><b>Graduate Assistant, Baylor University, Chemistry Department, Waco, Texas, 2006-2009.</b> Designed and prepared novel bis-pyridylhydrazones for usage in conversion to bis-pyridylindazoles. Developed an alkylation procedure of the modification of a series of substituted dibenzoylmethanes. General instrument maintenance (primarily GC/GC-MS.) Maintained a clean, organized working environment and laboratory notebook.</p> <p><b>Teaching Assistant, Baylor University, Chemistry Department, Waco, Texas, 2006-209.</b> Developed a system involving normally-scheduled meetings to ensure graduate/undergraduate teaching assistants were well-prepared and given valid information for pre-laboratory lectures. Designed and implemented a system using PowerPoint presentations for pre-laboratory lecture; additionally designed novel experiments to enrich student experience with a focus on proper instrument usage (primarily IR and GC.) Collaborated in introducing writing assignments with emphasis on conveyance of concepts learned.</p> <p><b>Research Assistant, Texas Lutheran University, Seguin, Texas, 2005.</b> Carried out synthesis of polyurethane elastomers using dry box (air/water free) techniques. Characterized polymer physical properties via tensile and swell-testing analysis. Designed and prepared a series of novel organo-ammonium salts for modification of polyurethane blends.</p>
<b>Education</b>	<p><b>BS, Chemistry, Texas Lutheran University, 2006.</b></p> <p><b>Post Graduate Studies, Chemistry, Baylor University, 2009</b></p>

## Columbia Analytical Resumes for Key Personnel (cont.)

**MICHAEL COSSON**


2007 TO PRESENT

*Columbia Analytical Services, Inc., 19408 Park Row, Ste. 320, Houston, TX 77084 800.434.6946*
**CURRENT POSITION**
**Project Manager, Data Reporting Supervisor – 2010 to Present**
**RESPONSIBILITIES**

Responsible for technical project management, ensuring overall data quality and compliance with customer requirements, and serving as liaison between clients and laboratory departments. Also responsible for the oversight of the processing and reporting of HRMS data (See description for Data Reporting Supervisor, below)

**Documentation of Demonstration of Capabilities is available for review**

**EXPERIENCE**
**Data Reporting Supervisor- Columbia Analytical Services, Inc., Houston, TX, 2009-Present**

Responsible for oversight of the processing and reporting of HRMS data. Troubleshoot data reporting issues, schedule daily tasks, and meet reporting production schedules. Train new staff in the reviewing and reporting criteria for HRGC/HRMS data production, LIMS and OpusQuan. Review and process HRMS chromatographic data for method and reporting compliance, assemble data packages according to project data quality objectives, assure data quality criteria meet project specifications, archive calibration data, prepare reports and case narratives, upload data into LIMS and prepare electronic data deliverables (EDDs).

**Scientist I, Columbia Analytical Services, Inc., Houston, TX, 2007 – 2009.** Review and process HRMS data for method and reporting compliance, assemble data packages according to project data quality objectives, assure data quality criteria meet project specifications, archive calibration data, prepare reports and case narratives, upload data into LIMS and prepare electronic data deliverables (EDDs).

**Analyst III, Columbia Analytical Services, Inc., Houston, TX, 2007.** Responsible for reviewing reports and meeting production goals, assembling data packages, uploading data into LIMS, reviewing and archiving data calibration folders and preparing project-specific forms or data summaries. Also responsible for training new staff in the review and reporting criteria for HRMS data production.

**Laboratory Analyst, Philip Reclamation Services, Houston, TX, 2006-2007.** Responsible for interpreting manifests, checking in samples, and performing chemical analysis of samples. Also responsible for updating waste management systems and checking for discrepancies. Served as laboratory safety committee representative.

**EDUCATION**
**BS, Biochemistry, Florida State University. Tallahassee, Florida, 2007**
**MS, Environmental Engineering, Southern Methodist University. Dallas, Texas (In Progress)**

Columbia Analytical Resumes for Key Personnel (cont.)

ARTHI KODUR



2008 TO PRESENT

Columbia Analytical Services, Inc., 19408 Park Row, Ste. 320, Houston, TX 77084 800.434.6946

<b>CURRENT POSITION</b>	<b>Project Chemist – 2011 to Present</b>
<b>RESPONSIBILITIES</b>	Assure project details are understood by technical and administrative staff and that analytical reports and EDDs comply with established project requirements. Manage GC/HRMS projects requiring a wide-range of requirements including US EPA CLP, AFCEE, ACOE, NFESC, RCRA, CWA, SDWA, EU and CAA.
<b>EXPERIENCE</b>	<p style="text-align: center;"><b>Documentation of Demonstration of Capabilities is available for review.</b></p> <p><b>Group Leader, Extraction Laboratory, Columbia Analytical Services, Inc., Houston, Texas, 2008 - 2011.</b> Oversee operations in Extraction Laboratory and SMO. Primary responsibilities include sample login, extraction, cleanup, and final concentration. Schedule daily tasks for extraction analysts. Run Methods 1668A, 1613B, 8280, 8290, TO-9A and 23. Aid in continuous improvement of existing methods and development of new methods. Perform non-routine and complex technical assignments.</p> <p><b>EH&amp;S Coordinator, Columbia Analytical Services, Houston, Texas 2010-2011.</b> Conduct Monthly meetings of safety related issues.</p> <p><b>Safety Committee Member, Columbia Analytical Services, Houston Texas 2008-Present.</b> Facilitate safety awareness though out the lab and office area.</p> <p><b>Analyst III, Columbia Analytical Services, Inc., Houston, Texas, 2007-08.</b> Run Methods 1668A, 1613B, 8280, 8290, TO-9A and 23. Perform extractions, sulfuric acid clean up, silica gel column clean up, and blow downs/transfers. Receive and log arriving samples into CAS LIMS. Prepare and ship client bottle kit orders.</p> <p><b>Science Instructor, Yancy Life, Stafford, TX, 2008.</b> Educate children from pre K-5th grade on basic science.</p> <p><b>Lab Technician, Genetic Profiles Corporation, San Diego, CA, 2005-2006.</b> Acce specimens, extraction, PCR, gel electrophoresis and gel analysis.</p> <p><b>MFS, Forensic Science, National University, San Diego, California, 2007.</b></p> <p><b>BS, Genetics, Texas A &amp; M University, College Station, Texas, 2005.</b></p>
<b>Education</b>	

Columbia Analytical Resumes for Key Personnel (cont.)

LAN LE



2008 TO PRESENT

Columbia Analytical Services, Inc., 19408 Park Row, Ste. 320, Houston, TX 77084 800.434.6946

CURRENT POSITION

Laboratory Technical Director – 2011 to Present

RESPONSIBILITIES

Manages and coordinates sample/data production, quality, staff development and training in the HRGC/HRMS laboratory. Oversees method development and provides technical oversight to the entire operation. Ensures overall performance of the laboratory for quality and profitability.

Documentation of Demonstration of Capabilities is available for review.

EXPERIENCE

**Technical Manager II, Columbia Analytical Services, Inc., Texas 2008 – 2011.** Managed and coordinated sample/data production, data quality, staff development and training in the HRGC/HRMS laboratory. Oversaw method development and provided technical oversight to the entire operation. Monitored adherence to corporate and local policies and procedures.

**GC/MS Supervisor, Southern Petroleum Labs, Houston, Texas, 1993-2008.** Supervise staff of 13 scientist and technicians, oversee data collection and validation, manage calibration and maintenance of analytical instrument systems, method development, perform training, and interface with project management personnel in support of technical solutions for clients.

**Organic Supervisor, Core Laboratories, Houston, Texas, 1991-1993.** Responsible for the Organics Laboratory including both GC/MS and GC analyses. Method interpretation and implementation. Supervised and performed both volatile and semivolatile organics determinations. Used HP-RTE data systems for data interpretation, quantitation, and reporting. Performed instrument maintenance and troubleshooting on HP 5970 GC/MS systems, autosamplers, integrators, and related analytical equipment.

**GC/MS Analyst, MBA Laboratories, Houston, Texas, 1988-1990.** Performed environmental GC/MS analyses samples in accordance with EPA protocols using an HP 5970 GC/MS with an HP-1000 RTE data system.

**Contract Chemist, Shell Development Company, Houston, Texas, 1987-1988.** Performed research in a group that developed an expert system for analyzing spectra obtained from a variety of samples, including polymers and heavy oils, which had undergone neutron irradiation.

**Contract Chemist, Exxon Research & Engineering Company, Baytown, Texas, 1989-1987.** Worked in a research group that developed an expert system for data interpretation for GC/MS hydrocarbon analyses, including naphthas and kerosene.

**Chemistry Researcher, University of Houston, Chemistry Department, Houston, Texas, 1983-1987.** Developed and authored a Reversed Phase-HPLC method on neutral surfactants. Studied varying HPLC gradients and performance factors.

**Water Chemist, City of New Orleans, New Orleans, Louisiana, 1981-1982.** Performed a variety of wet bench and GC analyses on water and wastewater samples.

EDUCATION

PhD, Chemistry, University of Houston, Houston, Texas, 1987.

BS, Chemical Engineering, Kansas State University, Manhattan, Kansas, 1981.

PUBLICATIONS

*Expert Systems for the Analytical Laboratory*, Demonchy, A.R.; Aretteig, J.R.; Le, L., and Deming, S.N., Analytical Chemistry, 60, 1355A, 1988.

## Columbia Analytical Resumes for Key Personnel (cont.)

**REBECCA PIERROT**  
 2011 TO PRESENT


Columbia Analytical Services, Inc., 19408 Park Row, Ste. 320, Houston, TX 77084 800.434.6946

<b>CURRENT POSITION</b>	Quality Assurance Program Manager – 2011 to Present
<b>RESPONSIBILITIES</b>	<p>As quality Assurance Program Manager, lead CAS/Houston's Quality Assurance/Quality Control Program. Responsible for reviewing, approving and controlling the quality systems of Columbia Analytical Services' HRMS laboratory. Facilitate the review and changes to laboratory SOPs and the QA Manual. Document training through DoCs and attestations. Manage PE samples and document adherence to standard operating procedures. Review analytical data, perform internal audits and assure compliance with external audit findings. Maintain state and federal certifications. Facilitate Quality Assurance and Ethics training. Prepare quarterly and annual quality reports to senior management. Facilitate managerial review of the Houston laboratory's Quality Assurance Program.</p>
<b>EXPERIENCE</b>	<p style="text-align: center;"><b>Documentation of Demonstration of Capabilities is available for review.</b></p> <p><b>Quality Assurance Manager, ALS Laboratory Group, Houston Texas, 2009-2010.</b> Responsible for the management and implementation of a NELAC-Accredited quality system for an international environmental laboratory. This encompasses the areas of document control, employee training and certification, review of routine QC studies, and internal auditing.</p> <p><b>QA Assistant, ALS Laboratory Group (previously e-Lab Analytical), 2005-2009.</b> Assisted in the development and implementation of a NELAC-Accredited quality system for an international environmental laboratory. Additional duties included level IV data package preparation and review, root cause analysis, employee training and method development.</p> <p><b>GC Analyst, Southern Petroleum Laboratories, Houston, Texas, 2004-2005.</b> Responsible for the preparation, analysis, and reporting, of purgeable aromatics and gas range organics using GC-PID, -FID (dual column/detector). Maintained and troubleshoot HP GC Instruments, including calibration, column and trap replacement, and auto-sampler calibration/maintenance. Relevant software includes TurboChrom for data acquisition and processing and a MS Access-based LIMS for reporting results.</p> <p><b>Power Plant Chemist – Intern, Austin Energy, Austin, Texas, 2001-2003.</b> Responsible for sample collection and analysis (pH, conductivity, and spectrophotometry), water treatment and purification (reverse osmosis and ion-exchange), environmental sample collection (routine and outfall), and various laboratory management duties including calibrations, monthly environmental reporting, chemical inventory and purchasing. Organized various training sessions focused on safety practices in the plant.</p>
<b>EDUCATION</b>	<p><b>BS, Chemistry, University of Texas, Austin, Texas, 2003.</b></p> <p><b>TNI Mentoring Session:</b> Determination of Detection and Quantitation Limits.</p> <p><b>Seminar:</b> The New TNI Laboratory Accreditation Standards, TNI, January 2010.</p> <p><b>Seminar:</b> How to Use Qualified Data, TNI, August 2009.</p> <p><b>Seminar:</b> Standard Methods: Theory and Application, TNI, August 2008.</p> <p><b>Continuing Education:</b> Management Skills for First Time Supervisors, Rockhurst University Continuing Education Center, September 2008.</p> <p><b>Continuing Education:</b> Advanced Microsoft Excel, Rockhurst University Continuing Education Center, January 2007.</p> <p><b>Continuing Education:</b> ISO/IEC 17025 and Accreditation Course, A2LA, June 2006.</p>
<b>AFFILIATIONS</b>	<p><b>The NELAC Institute (TNI) – Member, 2008 – Present</b></p> <p><b>TNI Accreditation Body Committee Member, 2009 - Present</b></p> <p><b>Texas Association of Environmental Professionals, 2010 - Present</b></p> <p><b>Laboratory Accreditation Bureau Technical Advisory Group, 2010 – Present</b></p>



**EDUCATION**

B.S. Chemistry, 1986 (graduated summa cum laude), Slippery Rock University, Pennsylvania

**POSITION OVERVIEW**

Ms. Milliken is responsible for directing and coordinating the activities of the laboratory departments including management of all personnel and capital resources available to successfully meet client and laboratory turnaround times (TAT). Ms. Milliken maintains a basic knowledge of all technical areas of the laboratory, laboratory processes, and Horizon LIMS in order to manage laboratory production of all laboratory analytical departments. Ms. Milliken has the final authority and responsibility regarding all analytical and reporting activities for all the departments including GC/MS, GC, Metals, Inorganic Prep, Organic Prep, Water Quality, and Microbiology. Ms. Milliken manages and provides daily guidance for all laboratory activities including but not limited to: serving as a liaison between analytical and other departments; monitoring turnaround time and resources; implementing QA directives and corrective actions; addressing suggestions and concerns of clients and external auditors; and approving the purchase of equipment, Ms. Milliken works hand-in-hand with the V.P. Corporate Operations, QA Manager, and IT Director.

Ms. Milliken is responsible for ensuring commitment to compliance with the standards as stated in ISO17025. She supports the activities of the production laboratory by providing technical guidance and client support in relation to troubleshooting instrument problems, methods development, results interpretation and compliance with NELAP, DoD, and other QA Program requirements; ensures the efficient operations of all laboratory instrumentation by providing the departmental supervisors technical guidance with relation to method compliance and method development; develops and maintains laboratory systems, working with the QA Manager to ensure ALSI compliance with the DoD QSM, NELAP, and other QA Program requirements.

In addition Ms. Milliken assists the IT Director in the understanding and development of automated data deliverables for ALSI clientele including direct interface with the IT Group, software vendors, and laboratory staff which are required to accomplish this task; assists analytical staff in the timely development of new methods in a cost-effective manner; responds to client inquiries as a direct response to their analytical results; contributes to the Senior Management Team by assisting and advising on policies and creating a strategy for directing growth of the laboratory and provides assistance to the Sales and Marketing team on technical presentations to be presented to potential and existing customer base. Ms. Milliken also provides technical review of QAPPs and SOWs submitted for request for proposals. She provides oversight to the Sample Management group following a demonstration of proficiency in all aspects of Horizon LIMS and Field Scheduling activities.

Ms. Milliken supports the laboratory by maintaining the knowledge of and responsible for investigating all regulations and technical requirements for both Federal and State environmental programs and communicating updates and revisions to all personnel affected by these changes.

**PROFESSIONAL EXPERIENCE****Analytical Laboratory Services, Inc, Middletown, PA****Wet Chemistry Group Leader (1999 – 2005)**

Ms. Milliken supervised the water quality/wet chemistry department which operates on three (3) shifts, five (5) days a week. Ms. Milliken maintained a general working knowledge of all test methods performed in these sections including the TOC/TOX and asbestos sections where she was responsible for departmental data review and interpretation and implementation of EPA analytical methods for analysis of soils, solid waste, drinking water and wastewater. Ms. Milliken was also responsible for following the QA/QC program, which included the development of standard operating procedures (SOPs) and the analysis of MDLs for all analytical procedures. Ms. Milliken also provided orientation and training of new employees on new methods, instrumentation training, cross training, etc.

## Anna G. Milliken

## Technical Laboratory Manager

Rev. 08/2011

### *Gannett Fleming Environmental Laboratory, Camp Hill, PA Wet Chemistry Supervisor (1997 – 1999)*

Ms. Milliken was responsible for supervising the wet chemistry department. She was responsible for the training and supervision of chemists and technicians. She was responsible for analytical testing on various matrices using SW-846, EPA, and Standard Method protocols. She was responsible for the scheduling, analysis, and completion of all samples received for the wet chemistry department.

### *Wright Laboratory Services, Inc., Middletown, PA 1993 – 1995; Quality Assurance Coordinator*

Ms. Milliken was responsible for maintaining the laboratory's Quality Assurance Plan and ensured all protocol set forth in the plan was followed. Ms. Milliken was responsible for maintaining current certifications/accreditations and pursuing interest in other programs. Ms. Milliken assisted in preparing data validation packages including USACE and CLP-type data deliverables. During this time, Ms. Milliken acted as a client contact and technical representative for several government and landfill clients.

### *1988 – 1993; Water Quality Supervisor*

Ms. Milliken was responsible for supervising and training all employees in the Water Quality, Microbiology, and TOC/TOX departments. She was also responsible for approving all data produced in these departments. During this time, Ms. Milliken was significant in the expansion of the Water Quality Department from two (2) employees working one (1) shift to eight (8) employees working three (3) shifts. Ms. Milliken researched and developed new methodologies and assisted in the purchasing of new instrumentation. She also successfully completed the Water Supply and Water Pollution Performance Evaluation Studies, and implemented a radon testing program.

### *1986 – 1988; Water Quality Chemist*

Ms. Milliken acted as a Water Quality Chemist performing various wet chemistry methods using EPA, SW-846, and APHA methodologies.

### **TRAINING, CERTIFICATIONS, ACCREDITATIONS**

- Pennsylvania Department of Environmental Protection, Certification for Analysis of Radon Using Charcoal Canisters
- ALSI Flammables and Explosives Safety Training (2001)
- ALSI Hazard Communications Training (2001)
- ALSI Safe Handling and Storage of Compressed Gases (2002)
- ALSI Chemical Hygiene Plan (2002)
- ALSI Horizon LIMS Training (2003)
- Advanced Systems Inc. – Course 011 – Root Cause Analysis (2007)
- ALSI Fire Extinguisher Training (2008)
- EHD Group – Pennsylvania Labor & Industry Annual Safety Committee Training (2008)
- ALSI Ethics Training Session (2009)
- ALSI Safety Training Session (2009)
- ALSI Ethics and Data Integrity Training (2010)
- ALS Ethics and Data Integrity Training (2011)
- ALS Hazcom Training (2011)

**EDUCATION**

B.A. Chemistry (Mathematics), 1980, Cheyney University,  
Teaching Certificate in Secondary Science, 1984, Cheyney University/Immaculate College

**POSITION OVERVIEW**

As Quality Assurance Manager, Ms. MacMinn is responsible for maintaining current laboratory certifications and accreditations obtained from the American Association for Laboratory Accreditation Program, National Environmental Laboratory Accreditation Program, and various state agencies including the Pennsylvania Department of Environmental Protection, the State of Maryland Department of the Environment, the State of Connecticut Department of Public Health, Delaware Health and Social Services, the Commonwealth of Virginia Department of General Services, the State of New York Department of Health, the State of New Jersey Department of Environmental Protection, the State of Georgia Department of Natural Resources, and the State of West Virginia. Ms. MacMinn was a key player in obtaining primary NELAP accreditation in Pennsylvania for the SDWA, CWA, RCRA programs and secondary NELAP accreditation in the states of New Jersey and New York. The NELAP program is based on ISO/IEC Guide 25 – 1990, "General Requirements for the Competence of Calibration and Testing Laboratories" and ISO/IEC Guide 58, "Calibration and Testing Laboratory Accreditation Systems—General Requirements for Operation and Recognition". Ms. MacMinn also received validation from the Navy Facilities Engineering Services Center (Department of the Navy) to perform analytical testing for the Navy program and transitioned laboratory from the original USACE HTRW validation program to ALSI's compliance to the latest DOD QSM and NELAC participation. In order to maintain these certifications and accreditations, Ms. MacMinn continually interacts with regulatory personnel and participates in numerous audits which not only tests the technical abilities in the laboratories but also the overall operation and service of the laboratory.

As manager of the laboratory's quality system, responsibilities include overseeing quality assurance aspects of the data, conducts internal performance and system audits on the entire technical operation annually, approves and modifies the laboratories' Standard Operating Procedures, maintains document control, and updates the laboratory Quality Assurance Manual as required. Ms. MacMinn also orchestrates the PT Program which includes proficiency evaluation samples for wastewater, drinking water, solid and hazardous waste samples, and soil samples; and runs a single blind PE sample program.

Some other tasks include conducting an annual quality review with upper management; initiates and maintains employee training records; maintains a subcontractor approval program; organizes and performs orientation for new employees detailing laboratory QA/QC requirements; and assists the marketing group with required quality control documentation for proposal and bid submissions.

**PROFESSIONAL EXPERIENCE****Phillip Analytical Services, Reading, PA (FKA/SSM/Laboratories, Inc.)**

*Technical Director/Quality Assurance Manager (1995 – 2000)*

As Technical Director/Quality Assurance Manager, Ms. MacMinn served as a major source of technical information and expertise on analytical methods in the laboratory. Ms. MacMinn was responsible for assisting clients and the Client Services Department in the interpretations of regulatory and analytical requirements to meet required protocols. She provided experience in the implementation of methodologies for the analytical staff of the laboratory. Ms. MacMinn developed and implemented the laboratory's Quality Assurance Program, coordinated the laboratory's certifications, accreditations, internal audits, analytical performance evaluations, employee training and safety programs. In addition, Ms. MacMinn initiated and maintained the quality assurance manual, qualification manual and standard operating procedures for the laboratory. During her tenure at Phillip's, Ms. MacMinn instituted a data validation program for evaluating all environmental analyses according to criteria set forth in USEPA CLP (Contract Laboratory Program), SW-846,

## Helen M. MacMinn

## Quality Assurance Manager

Rev. 08/2011

40 CFR, NIOSH, OSHA, and NELAC for the analysis of drinking water, wastewater, solid and hazardous waste and air emissions. Ms. MacMinn became familiar with GLP and ISO Guide 25 and 17025 for Environmental Laboratory Services.

### **Thermo Analytical, Pottstown, PA**

*Quality Assurance/Quality Control Manager/Senior Analytical Chemist (1988-1995)*

Ms. MacMinn was responsible for quality assurance/quality control including managing the Quality Assurance Program, the validation of analytical chemistry data, certification and accreditation programs, internal audits, maintenance of control charts, upgrading the QA/QC Manual and personnel training.

### **Roy F. Weston, Inc., Lionville, PA**

*Associate Project Scientist (1987-1988)*

Ms. MacMinn was responsible for QA/QC involving data validation, certifications, accreditations, performance evaluation studies, internal audits and maintenance of control charts.

### **Foote Mineral, Exton, PA**

*Chemist/Quality Assurance (1986-1987)*

Ms. MacMinn was responsible for the quality control testing of chemical and mineral products by wet chemistry analysis including atomic absorption determinations. Ms. MacMinn also engaged in environmental analysis of wastewater including dissolved oxygen, suspended solids, nitrogen and phosphate analysis.

### **Herderson Senior High School, West Chester, PA**

*Teacher (1984-1986)*

Ms. MacMinn taught Advanced Seminar Chemistry and Introduction to Physical Chemistry.

### **Scott Paper Company, Chester, PA**

*Chemist/Packaging Engineer (1980-1983)*

Ms. MacMinn was responsible for quality standards and compliance related to corrugated cases, poly/paper wrappers and adhesive materials. Ms. MacMinn developed specifications changes and ensured test and equipment reliability and validation; initiated waste monitoring programs and served as technical consultant to production personnel on problems related to packaging/adhesive issues as they applied to high-speed equipment. Ms. MacMinn supervised a modern adhesive batch make-up facility and coordinated vendor activities with production including developmental work on new projects.

## TRAINING

- Problem Solving
- Troubleshooting
- Technical Writing
- Time Management
- Multiple Project Management
- Good Laboratory Practices (GLP)
- USEPA Contract Laboratory Program Organic Validation Certification (1994)
- American Red Cross Adult CPR/Standard First Aid (2001) (2008)
- ALSI Hazard Communications Training (2001)
- Advanced Systems, Inc. – *Measurement Uncertainty for Testing Laboratories* – 8 hours (2001)
- ALSI Fire Extinguisher Training (2002)
- SkillPath *Managers and Supervisors Conference* (2002)
- Red Cross Adult CPR Refresher (2002)
- NYAAEL “*Environmental Laboratory Data Issues*” (2002)
- ASQ “*Certified Quality Management Refresher*” – 30 hours (2003)

## Helen M. MacMinn

## Quality Assurance Manager

Rev. 08/2011

- INELA "Internal Audits, Management Reviews, and Corrective Actions" (2004)
- The NELAC Institute – Recognition of Outstanding Contribution to the *Establishment of a NELAP* (2004)
- American Red Cross – First Aid Basics, Adult/Infant/Child CPR, Preventing Disease Transmission, AED Essentials (2005)
- NY/PAAAEL Certificate of Attendance – 5 hours – *Water Security* (2005)
- NY/PAAEL Certificate of Attendance – 3 hours – *EPA Quality Update* (2005)
- Advanced Systems, Inc. – *Preventing Improper Laboratory Practice* (2005)
- NY/PAAAEL – 3 hours – *MUR Updates Microbiology* (2006)
- American Red Cross – CPR/AED Adult (2006)
- ALSI *SOP Validation Training* (2006)
- NJWEA Recognition of Participation at the May 2007 NJWEA Annual Conference (2007)
- CareerTrack – *Managing Emotions Under Pressure* – 0.6 CEUs (2007)
- The NELAC Institute – *Data Review and Validation* (2007)
- Advanced Systems Inc. – *Root Cause Analysis* (2007)
- Engle-Hambright & Davies, Inc. – PA Labor & Industry Annual Safety Committee Training (2008)
- PA Rural Water Association – General Update to Ch. 109 Water Supplier Training PADEP #5062 (Sep. 2010)
- NY/PAAAEL – The New TNI Lab Accreditation Standards (Jul 2010)
- NY/PAAAEL – Monday Session II – Data Validation Inside the Black Box (Jul 2010)
- ALS Ethics and Data Integrity Training (2011)
- ALS Hazcom Training (2011)

### PUBLICATIONS

Helen MacMinn and B. Chris Weathington, "Double Blind/Single Blind Performance Evaluation Samples and Their Treatment,"—presented at the American Chemical Society/Quality Assurance Symposium, 1990.



**EDUCATION**

B.S. Biology 1999, Clarion University of Pennsylvania, Clarion, PA

**POSITION OVERVIEW**

Mr. Hall was appointed as the GC Group Leader where he is responsible for providing technical and operational support to the GC section. Mr. Hall is responsible for the training and supervision of the GC chemists/technicians to maximize productivity and ensure appropriate testing procedures are used in compliance with testing methods and SOP requirements. The GC Section currently performs the analytical determination of organo-phosphorus pesticides, PCBs, herbicides, carbamates, and diesel range organics. His responsibilities include validation, interpretation and implementation of methods used in the analysis of various matrices; i.e., solids, soil, surface water, groundwater, and wastewater. Methods performed in the GC section are drinking water methods in support of the SDWA such as 504, 505, 507, 508A, 515, 547, 549 using the GC/ECD, GC/FID, GC/NPD. These methods are run according to the guidelines referenced in *Methods for the Determination of Organic Compounds in Drinking Water*; SW-846 methods 8015, 8081, 8082, 8141, 8151; and 40 CFR methods 600, 601, 602, 606, and 608. Mr. Hall was key to researching and developing the procedures to perform SW-846 Method 8330 on waters and soils to support DOD requirements on specific sites. Mr. Hall also recently researched and developed the new NJ EPH method required by the NJDEP for specific remediation sites in NJ.

Specific duties in relation to the operations of the GC lab include instrument maintenance, data validation, and maintaining sample throughput. He schedules samples for analysis, oversees data accuracy, and is responsible for the departmental approval of results. Mr. Hall coordinates the GC analytical schedules with the Prep Supervisor regarding the required sample preparations previous to analysis in meeting stipulated turnaround times. Mr. Hall will coordinate with Project Managers to effectively communicate, plan, and prioritize workload to meet client requirements and deadlines. He will also communicate department issues and provide status reports to the Laboratory Operations Manager.

**PROFESSIONAL EXPERIENCE****Analytical Laboratory Services, Inc., Middletown, PA**

*GC Chemist (2002 – 2005)*

Mr. Hall was responsible for analytical testing on various matrices using the various GCs. Mr. Hall completed Demonstration of Capability (DOCs) on various methods and matrices including: SW-846 8082 PCBs; Organic Acids by GC; EPA 608 Pesticides; EPA 547 Glyphosate Prep; EPA 600 PCBs in Oil; SW-846 8015 DRO; EPA 552 Haloacetic Acids Prep; EPA 505 Pesticides; SW-846 8081 Pesticides; EPA 507 Pesticides; EPA 525 SVOCs Prep; EPA 504 EDB DBCP; SW-846 8141 Pesticides; EPA 622; EPA 508A Pesticides; SW-846 8330 Explosives Extraction; EPA 515.3 Herbicides; EPA 549 Endothall; and EPA 552.2 HAAs. He was responsible for the scheduling, analysis and completion of all samples received for these instruments and prep extractions. He interpreted test results and entered test results into the Laboratory Information Management System (LIMS) database for approval.

*Sample Prep Technician (2000 – 2002)*

Mr. Hall began his career at ALSI working in the Sample Prep Group where he made sample preparations of solid samples, drinking waters and wastewaters through distillations, digestions, extractions and concentrations according to the established SOPs provided. In each batch preparation he used a variety of matrices for quality control, depending on the protocol of each individual project submitted to the laboratory. Mr. Hall was responsible for processing the sample prep and forwarding the samples to the specified laboratory for testing.

**TRAINING**

- ALSI Flammables and Explosives, Safety Training (2001)
- ALSI Methylene Chloride Informational Meeting (2001)



**Justin J. Hall**

**GC Group Supervisor**  
Rev. 08/2011

- ALSI Fire Extinguisher Training (2001)
- American Red Cross Adult CPR/Standard First Aid (2001)
- ALSI Respirator Fit Training (2001)
- ALSI Hazardous Communications Training (2001)
- ALSI Safe Handling and Storage of Compressed Gas (2002)
- ALSI Chemical Hygiene Plan (2002)
- American Red Cross Adult CPR Refresher (2002)
- ALSI Fire Extinguisher Training (2002)
- ALSI Horizon LIMS Training Certification (2003)
- ALSI NELAC "Standards and Traceability" and "Control of Records" Training (2004)
- Advanced Systems Inc. – Preventing Improper Laboratory Practice (2005)
- Advanced Systems Inc. – Root Cause Analysis Course 011 (2007)
- US Army ERDC-CRREL – Method 8330B and Multi-Increment Sampling Workshop (Aug 2007)
- Dionex – HPLC: Ultimate 3000/Summit Operation, M & T (2008)
- ALSI Ethics and Data Integrity Training Summary (2010)
- ALS Ethics and Data Integrity Training (2011)
- ALS Hazcom Training (2011)

# Christopher P. Kahler

## GC/MS Volatiles Supervisor

Rev. 08/2011

### EDUCATION

Earned 90 Credits towards B.S., Chemistry, Lebanon Valley College, Lebanon, PA

### POSITION OVERVIEW

Mr. Kahler has been a professional chemist for 13 years. In March 2007, Mr. Kahler was appointed GC/MS Group Leader for the GC/MS Volatiles Laboratory at ALSI. Mr. Kahler is responsible for the performance of environmental testing of water, soils, solids for volatiles organic compounds using Gas Chromatography/Mass Spectrometry instrumentation according to the criteria set forth in various EPA and SW-846 methods. In assuring high quality data, Mr. Kahler reviews all technical information originating from his department. He trains his analysts and maintains all documentation to assure proper training and competency. Mr. Kahler is responsible for maintaining the HP ChemServer Administrator for the GC, GC/MS and HPLC departments which includes full knowledge of the HP DOS ChemStation, HP ChemServer, and PC stations. In conjunction with his computer responsibilities, Mr. Kahler maintains and runs the ThruPut Envision Software which produces CLP forms which are required for data deliverables packages. As part of mass spectral interpretation, Mr. Kahler is responsible for data review of QC and samples. He performs compound identification which is done by comparing retention times and mass spectra for each analyte found in the samples to those found through the analysis of a known standard. Mr. Kahler reviews nonstandard analytes in the samples by utilizing the NBS library search capabilities in the Target3 Software.

As a chemist, Mr. Kahler is responsible for analyzing a variety of samples to determine volatile and semivolatile organic compounds using direct injection and purge/trap methods of GC/MS and analyzing solids, soil, surface water, groundwater, and wastewater using EPA methods such as 524, 525, 624, 625, and SW-846 methods such as 8260 and 8270. Mr. Kahler uses the HP ChemServer software to conduct GC/MS data validation and enter results into the Horizon LIMS. As part of the QA/QC practices in this department, Mr. Kahler maintains quality control reports and logbooks on a daily, monthly, and yearly basis. Mr. Kahler also took the lead in developing EPA Methods 527 and 529 for the upcoming EPA UCMR2 regulations for PWSs across the nation.

### PROFESSIONAL EXPERIENCE

#### **Analytical Laboratory Services, Inc., Middletown, PA** *GC/MS Chemist (1998-2007)*

Mr. Kahler became a GC/MS Chemist in 1998 where he was responsible for analytical testing of GC/MS volatiles and prompt turnaround time of client's samples. Mr. Kahler traced samples from the time the sample was entered into the LIMS to when it was analyzed, reviewed, and approved. In addition, Mr. Kahler was responsible for ordering and preparing the standards used by the GC/MS volatiles group; backing up data from the Chemserver to archive tapes for future reference; ran samples of various matrices such as liquid, soil, solids (low-level and medium (MeOH-preserved) using methods 8260B, 624, 524.2, and 5035. Use of software included Target Chemserver, Enviroquant; HP-RTE, Word, Excel, Write, WordPerfect. Mr. Kahler was also responsible for developing methods for 525.2 - Semivolatiles by GC/MS in drinking water and method 527 and 529 for the new UCMR2 List 1 contaminant regulations for PWSs.

#### **Analytical Laboratory Services, Inc., Middletown, PA** *GC Chemist (1996-1998)*

Mr. Kahler became a GC Chemist in 1996 where he was responsible for running GC and HPLC instrumentation and tests. Some of the tests he was responsible for included 8021, 502.2, 601,602, GRO and HPLC 531.1.

#### **Analytical Laboratory Services, Inc., Middletown, PA** *Prep Technician (1994-1996)*

Mr. Kahler began his career at ALSI as a prep technician performing organic and inorganic prep methods to support the GC/MS, GC, and Metals laboratories.



**TRAINING**

- ALSI Standards of Business Ethics and Conduct (2000)
- ALSI Hazard Communications Training (2001)
- ALSI Fire Extinguisher Training (2002)
- ALSI Safe Handling and Storage of Compressed Gas (2002)
- Red Cross Adult CPR Refresher (2002)
- ALSI Chemical Hygiene Plan (2002)
- PaAAEL, "Optimizing GC/MS Parameters" (2002)
- ALSI Horizon LIMS Training (2003)
- Advanced Systems Inc - Preventing Improper Laboratory Practice, (2005)
- Thermo Xcaliber Training (2005)
- Excelling as a First-Time Manager or Supervisor, (.5 CEUs), SkillPath Seminars (2007)
- ALSI Hazcom, Lab Standards, Ventilation, Flammable and Combustible Liquids, Eye Protection, PPE, Compressed Gasses Training (2007)
- MDL Systems – One-Day GC/MS Volatiles Training Course (2007)
- Advanced Systems Inc. – Root Cause Analysis (2007)
- Entech Air Academy—Air Analysis Training (2008)
- ALSI Ethics and Data Integrity Training Summary (2010)
- ALS Ethics and Data Integrity Training (2011)
- ALS Hazcom Training (2011)

**EDUCATION**

B.S. Ed. Biology; Teaching Certificate for Chemistry/Biology, 1989  
Shippensburg University of Pennsylvania  
B.S. Chemistry, 1997  
Shippensburg University of Pennsylvania

**POSITION OVERVIEW**

Mr. Lopez has 18 years of laboratory experience in the areas of water quality chemistry, GC and GC-MS organic chemistry. Alan currently serves as the Group Leader for Semivolatiles by Gas Chromatography/Mass Spectrometry and supervises three (3) chemists. Mr. Lopez reports to the Laboratory Operations Manager and also acts as the backup to the Laboratory Operations Manager. Mr. Lopez is responsible for instituting new analytical methods, maintaining current standard operating procedures (SOPs), instrument maintenance and calibration, training of chemists, preparation of standards, extractions, preparing samples for analysis, GC/MS data interpretation, validation and reporting of results into the Horizon LIMS.

Alan has full knowledge of the HP DOS ChemStation, HP ChemServer, and PC stations and maintains and runs the ThruPut Envision Software which produces CLP forms which are required for data deliverables packages. Alan serves as ALSI's Mass Spectral Interpretation Specialist where he is responsible for data review of QC and samples. He performs compound identification, which is done by comparing retention times and mass spectra for each analyte found in the samples to those found through the analysis of a known standard. Alan reviews nonstandard analytes in the samples by utilizing the NBS library search capabilities in the Target3 Software. As part of the QA/QC practices performed in this department, Mr. Lopez is responsible for maintaining quality control reports and logbooks on a daily, monthly, and yearly basis.

**PROFESSIONAL EXPERIENCE****Analytical Laboratory Services, Inc., Middletown, PA****GC Group Leader (1997 – 2005)**

Mr. Lopez was responsible for the training and supervision of the chemists/technicians that work in the GC Section, which included the analytical determination of volatile organics, pesticides, PCBs, herbicides, petroleum hydrocarbons, and various other semivolatiles organic compounds by gas chromatographic and HPLC metals. His responsibilities included validation, interpretation and implementation of methods used in the analysis of various matrices; i.e., solids, soil, surface water, groundwater, and wastewater. Specific duties in relation to the operations of the GC lab included instrument maintenance, data validation, and maintaining sample throughput. He scheduled samples for analysis, oversees data accuracy, and is responsible for the departmental approval of results. Mr. Lopez coordinated the GC analytical schedules with the Prep Supervisor regarding the required sample preparations previous to analysis in meeting stipulated turnaround times. Mr. Lopez was responsible for the implementation of numerous new methods, i.e. EPA 552 (Haloacetic Acids), SW-846 8141 (Organophosphate Compounds).

**GC Chemist (1995 – 1997)**

Prior to his current leadership position in the GC laboratory, Mr. Lopez performed as a Chemist in GC for approximately two (2) years. He was responsible for running the following tests: 502.2, 504.1, 505, 506, 507, 508, 515.1, 531.1, 8015 (DRO), 8021, 8061, 8081, 8082, 8151, 601/602, 606, and 608. During this time, Mr. Lopez learned specific method requirements, developing in-house standard operating procedures, and instrument maintenance.

**Alan Lopez***Water Quality Chemist (1993 – 1995)*

Before moving to the GC Section, Mr. Lopez was a Water Quality Technician using the Lachat to perform tests on water, wastewater, and liquids; such as phenols, cyanide, nitrate-nitrogen, and phosphate. He also performed titrations and performed ISE methods.

*Aqua Treatment Services, Mechanicsburg, PA**Lab Technician (1991 – 1993)*

Before coming to Analytical Laboratory Services, Inc. (ALSI), Mr. Lopez acted as Lab Technician for a water quality lab performing tests such as microbiology, nitrates, fluorides, titrations, and ISE methods. He also gained experience in the field of science using his teaching certificate to teach high school students biology and chemistry courses for approximately two (2) years.

**TRAINING**

- Envision Training, Thru-Put Systems, Inc. (1995)
- ALSI Emergency Response Training (1996)
- ALSI Accident Procedure Training (1996)
- ALSI Hazardous Communications Training (1997, 2001)
- ALSI Hazardous Waste Disposal Training (1997)
- ALSI Personal Protective Equipment Training (1997)
- ALSI Chemical Hygiene Program (1997)
- ALSI Flammables and Explosives, Safety Training (2001)
- ALSI Fire Extinguisher Training (2001)
- ALSI Hazardous Communications Training (2001)
- ALSI Fire Extinguisher Training (2002)
- ALSI Horizon LIMS Training Certification (2003)
- ALSI Ethics Protocol (2009)
- ALSI Safety Training (2009)
- ALSI Ethics and Data Integrity Training (2010)
- ALS Ethics and Data Integrity Training (2011)
- ALS Hazcom Training (2011)

**EDUCATION**

B.S. Chemistry 1993, University of Pittsburgh, Pittsburgh, PA  
B.S. Business Communications 1988, Clarion University, Clarion, PA  
A.S. High Tech Communications 1986, Community College of Beaver County, Monaca, PA

**POSITION OVERVIEW**

Ms. Miller joined ALS in 2007 as the Group Leader for the Metals laboratory and brings 11 years of environmental experience with 8 years of supervisory experience. Ms. Miller is supervisor for metal analyses performed utilizing inductively coupled plasma (ICP), inductively coupled plasma/mass spectroscopy (ICP-MS), and cold vapor technique on various environmental matrices including soil, solid waste, water, drinking water, air, etc. Instrumentation used in the metals laboratory include the Spectro-D Inductively Coupled Plasma (ICP); TJA IRIS with 300-place Autosampler ; Varian VGA-76 Mercury Analyzer; PS 200 Leeman Labs Automated Mercury Analyzer; and the Perkin Elmer ELAN 6000 ICP-MS.

Ms. Miller determines the daily activities and analyses to be performed in the metals department in meeting turnaround times related to analytical results and data package requirements. Ms. Miller reviews all technical information generated by the department and updates standard operating procedures (SOPs) as well as ensures that analysts perform analyses according to the proper quality control requirements including documentation of blanks, spikes, and duplicate analyses to ensure precision and accuracy. Ms. Miller is responsible for orientation and training of new employees on new methods, instrumentation training, cross training, and assures running Method Detection Limit (MDL) Studies on an annual basis.

Ms. Miller was responsible for learning how to use the Perkin Elmer 6000 ICP-MS, generate the standard operating procedures, and produce analytical results using methods 6020/200.8. Ms. Miller is also responsible for analyzing proficiency samples for water supply, wastewater studies, state certifications, and accreditation programs. Ms. Miller was also responsible for researching and developing the low-level methods for Mercury using SW-846 1631 and EPA 245.7 which are requirements of NPDES WW permits.

**PROFESSIONAL EXPERIENCE**

**Phase Separation Science, Inc., Baltimore, MD**  
*Senior Metals Coordinator (1998-2007)*

As Senior Metals Coordinator, Ms. Miller's responsibilities included operating, troubleshooting and maintaining two ICP-MS instruments simultaneously. She worked in a very fast paced environment where the standard turnaround time was five business days and much of the work involved rush and emergency turnaround times. In addition to operating the instruments, Ms. Miller was responsible for ensuring adherence to appropriate methods and for ensuring all quality control requirements are met. Ms. Miller managed all audits for the metals department and prepared the department for the NELAP certification. Other duties included writing SOPs, department ordering/inventory, and budgeting.

*Safety Manager (1998-2007)*

Ms. Miller was also the Safety Manager which included establishing and implementing training protocol for PSS's laboratory safety requirements. Monthly meetings were held to reinforce safety standards and to address any employee concerns.

**Prism Laboratories, Inc., Charlotte, NC**  
*Metals Analyst (1995-1998)*

As Metals Analyst, Ms. Miller was responsible for operating, troubleshooting and maintain several different instruments. She was responsible for adhering to appropriate methods and for writing SOPs for several methods and instruments.



**TRAINING**

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- ALSI Hazard Communications Training (2007)
- ALSI Occupational Exposure to Hazardous Chemicals 29 CFR 1910.1450 (2007)
- Agilent Technologies – On-Site ICP-MS Training Course – 3 days (2007)
- ALSI Fire Extinguisher Training (2007)
- ALSI New Safety Orientation and Training (2007)
- ALSI CHP Orientation Training (2007)
- ALSI Chemical Hygiene Plan Training (2007)
- ALSI Horizon LIMS Training (2007)
- Advanced Systems Inc. – Root Cause Analysis (2007)
- ALSI Fire Extinguisher Training (2008)
- ALSI SOP Training (2009)
- ALSI Ethics Protocol (2009)
- ALSI Safety Training (2009)
- ALSI Ethics and Data Integrity Training (2010)
- ALS Ethics and Data Integrity Training (2011)
- ALS Hazcom Training (2011)

## Jason W. Badman

## Wet Chemistry Supervisor

Rev 08/2011

### EDUCATION

B.S. Biology 1998, Lebanon Valley College, Annville, PA

### POSITION OVERVIEW

Mr. Badman is appointed as Wet Chemistry Group Leader which operates on three (3) shifts, five (5) days a week. Mr. Badman has worked in the Wet Chemistry Department since 2003 and from 2000-2003 worked in the Sample Receiving Department as sample custodian and group leader. Mr. Badman maintains a general working knowledge of all test methods performed in the wet chemistry section which performs classical water quality analyses such as colorimetric, titrimetric and gravimetric analyses. He is responsible for processing samples and scheduling work through the department, resource leveling to meet production requirements, and managing the sample backlog towards a goal of 100% on-time delivery. He is responsible for departmental data review and interpretation and implementation of EPA analytical methods for analysis of soils, solid waste, drinking water and wastewater according to methodology requirements. Mr. Badman is responsible to ensure that his department is in compliance with the health, safety, and QA/QC programs. He is responsible for the development of new standard operating procedures (SOPs), revising current SOPs, and the maintenance and analysis of MDLs for all analytical procedures. Mr. Badman provides orientation and training of new employees on new methods, demonstration of capability (DOCs), instrumentation training, cross training, etc. Mr. Badman directly reports to the Laboratory Manager and Technical Manager for overall operations of the Wet Chemistry Department and works closely with the Prep Supervisor in scheduling analyses dependent upon the prep section in order to meet client-required turnaround times.

### PROFESSIONAL EXPERIENCE

#### *Analytical Laboratory Services, Inc., Middletown, PA* *Wet Chemistry Chemist (2003 – 2005)*

Mr. Badman was responsible for analytical testing on various matrices using the ion chromatograph. Methods performed include: EPA 300/9056 for anions, nitrate/nitrite, bromide, chloride, sulfate, fluoride; EPA 300.1 for bromate, chlorite, bromide; and EPA 314 for Perchlorate. He was responsible for the scheduling, analysis and completion of all samples received for this instrument. He interpreted test results and entered test results into the Laboratory Information Management System (LIMS) database for approval.

#### *Sample Receiving Custodian (1999-2003)*

As Sample Receiving Supervisor, Mr. Badman was responsible for learning and training his employees on the standard operating procedures associated with the Sample Receiving Department such as turbidity use in sample receiving, trip and field blank preparations, sample receipt/sample handling, chain-of-custody procedures, subcontracting procedures, and bottle preparation protocol, etc. Mr. Badman was responsible for verification all incoming samples with their chain-of-custody and bottle label, checks the pH of aqueous samples for proper preservation, and places samples in the proper storage areas. If there are discrepancies, Mr. Badman reported them directly to the Project Coordinator related to the client account. If there are no discrepancies, Mr. Badman entered all COC information into the Laboratory Information Management System (LIMS) with special care given to the tests that require a short holding time.

Mr. Badman also coordinated bottle preparation which included specific bottles with the proper preservation, sampling supplies, such as COC, coolers, ice requirements, trip and field blank preparation, for sampling projects. Mr. Badman maintained a chemical and supply log-in book where the sample custodians will log-in all chemicals and supplies received for the individual laboratory sections; maintained the samples disposal list; i.e., properly disposing of samples after analysis. Mr. Badman was also responsible for preparing samples for subcontracting to other laboratories designated by a proposal, client request, upon approval from a lab manager or project coordinator.

## Jason W. Badman

## Wet Chemistry Supervisor

Rev 08/2011

### *Lebanon Valley College Biology Department*

#### *Laboratory Assistant (1998)*

Mr. Badman was responsible for aiding the professors in preparing classes with laboratory materials. Mr. Badman also aided the professor in laboratory teaching. Mr. Badman learned to use various instruments and equipment ranging from simple titration to devices such as a NMR. During his four (4) college years, Mr. Badman also worked as a Circulation and Interlibrary Loan Assistant where he would assist patrons in finding materials and information and performed the daily functions associated with the Interlibrary Loan Department.

### **TRAINING**

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- ALSI Flammables and Explosives Safety Training (2001)
- American Red Cross Adult CPR/Standard First Aid (2001)
- ALSI Hazard Communications Training (2001)
- ALSI Fire Extinguisher Training (2002)
- ALSI Horizon LIMS Training (2003)
- Advanced Systems Inc. – Preventing Improper Laboratory Practice (2005)
- ALSI SOP Validation Training (2006)
- PaAAEL – Wet Chemistry Hands-on Workshop – 5.5 hours (2006)
- Advanced Systems Inc. Root Cause Analysis (2007)
- ALSI Fire Extinguisher Training (2008)
- Alloway Lab Support Services – Basic Laboratory Calculations (2009)
- ALSI SOP Training (2009)
- ALSI Ethics Protocol (2009)
- ALSI Safety Training (2009)
- ALSI Ethics and Data Integrity Training (2010)
- ALS Ethics and Data Integrity Training (2011)
- ALS Hazcom Training (2011)

**EDUCATION**

B.S., Biology, 1988, Indiana University of Pennsylvania, Indiana, PA  
M.B.A., 2002, Lebanon Valley College, Lebanon, PA

**POSITION OVERVIEW**

Mr. Wewer supervises the sample prep personnel covering three (3) shifts, six (6) days a week, to insure the timely and accurate completion of sample preparations. His duties include interpretation and bench level implementation of EPA analytical methods appropriate for the analysis of solid waste, drinking water, and wastewater. He provides input on the feasibility and the data deliverables schedule for various projects as proposed in statements of work and quality assurance plans. Mr. Wewer has a working knowledge of inorganic sample preparations which include digestions of liquids and solids by hot plate and microwave methods for the determination of metals content and organic sample preparations which include solids, wastewater, and drinking water by soxhlet, continuous liquid-liquid, sonic disruption, solid phase extraction, and separatory funnel techniques. Mr. Wewer increased sample throughput by modifying solvent concentrating and leachate filtering techniques. He is responsible for various other preps including distillations for phenol, cyanide, and ammonia; TPH analyses; and leachate analyses such as SPLP, TCLP, ASTM, and EP toxicity. Mr. Wewer has written many of the SOPs for the preps performed in his laboratories and is responsible for revising and updating them, as required. He invests his time in training of personnel in safety, prep procedures, prep methods, new method development, and documentation to insure the quality of work performed within the organic and inorganic prep laboratories. Mr. Wewer developed and implemented an interdepartmental cross-training program and assisted in developing a computer-generated QC blank system.

**PROFESSIONAL EXPERIENCE*****Analytical Laboratory Services, Inc., Middletown, PA******Lab Technician (1991 – 1995)***

Upon employment at ALSI, Mr. Wewer worked exclusively in the prep lab as a Technician learning both inorganic and organic extractions. After gaining a thorough knowledge of the procedures performed in this section, he was promoted to Sample Prep Supervisor. Mr. Wewer maintains a rigorous schedule because many of the analytical methods performed throughout the laboratory are dependent upon the prep procedures performed in the Prep Section. Many of the procedures demand a timely turnaround for the projects accomplished.

***Other Experience***

Prior to ALSI, Mr. Wewer served as a Biological Manufacturing Technician performing various techniques involved in the isolation and purification of influenza virus, formulation of vaccine by filtration, dialysis, liquid chromatography, and resin exchanges. He also served as a Wildlife Technician monitoring small mammal and bird species for mortality and blood concentration of diazinon, a known and used pesticide.

**TRAINING**

- Biometry, Shippensburg University, (1992)
- Solid Phase Extraction Seminar (1993)
- ERTCO, Calibration and Verification of Temperature Indicating Instruments (1995)
- AOAC International, Supercritical Fluid Extraction Workshop (1995)
- SkillPath Seminars, Coaching and Teambuilding Skills for Managers and Supervisors (1995)
- ALSI Accident Procedure Training (1996)
- ALSI Chemical Hygiene Program (1997)
- ALSI Hazardous Waste Disposal Training (1997)
- ALSI Hazardous Communications Training (1997)

## James Wewer

## Organic Prep Supervisor

Rev 08/2011

- Management Problems of the Technical Person in a Leadership Role (1998)
- ALSI Hazard Communications Training (2001)
- ALSI Flammables and Explosives Training (2001)
- ALSI Fire Extinguisher Training (2001, 2002)
- ALSI Methylene Chloride Informational Meeting (2001)
- ALSI Qualitative Respirator Fit Test (2002)
- ALSI Safe Handling and Storage of Compressed Gases (2002)
- American Society for Quality (ASQ), Certified Quality Manager (2003)
- ASQ, QCE 116, Certified Quality Manager Refresher (2003)
- Horizon LIMS Training (2003)
- Advanced Systems Inc. – Preventing Improper Laboratory Practice (2005)
- ALSI SOP Validation Training (2006)
- Advanced Systems Inc. – Root Cause Analysis (2007)
- ALSI ES Response to Audit Deficiency Training (2008)
- ALSI SOP Training (2009)
- ALSI Ethics Protocol (2009)
- ALSI Safety Training (2009)
- ALSI Ethics and Data Integrity Training (2010)
- ALS Ethics and Data Integrity Training (2011)
- ALS Hazcom Training (2011)