

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. CONTRACT ID CODE	PAGE OF PAGES	
2. AMENDMENT/MODIFICATION NO. 0001		3. EFFECTIVE DATE 06-Jan-2004	4. REQUISITION/PURCHASE REQ. NO.		5. PROJECT NO.(If applicable)	
6. ISSUED BY USACE SACRAMENTO DISTRICT ATTN: CONTRACTING DIVISION 1325 J STREET SACRAMENTO CA 95814-2922		CODE W91238	7. ADMINISTERED BY (If other than item 6) <b>See Item 6</b>		CODE	
8. NAME AND ADDRESS OF CONTRACTOR (No., Street, County, State and Zip Code)				X	9A. AMENDMENT OF SOLICITATION NO. W91238-04-Q-0035	
				X	9B. DATED (SEE ITEM 11) 29-Dec-2003	
					10A. MOD. OF CONTRACT/ORDER NO.	
					10B. DATED (SEE ITEM 13)	
CODE		FACILITY CODE		11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS		
<input checked="" type="checkbox"/> The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offer <input checked="" type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offer must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing Items 8 and 15, and returning _____ copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.						
12. ACCOUNTING AND APPROPRIATION DATA (If required)						
13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS. IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.						
A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.						
B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(B).						
C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:						
D. OTHER (Specify type of modification and authority)						
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input type="checkbox"/> is required to sign this document and return _____ copies to the issuing office.						
14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) a) Project: Coastal Salt Marsh Pre-Remedial Action Sampling, Hamilton Army Airfield, Novato, California. b) Reason for Amendment: This amendment incorporates the attached Scope of Work and ADR Electronic Data Deliverable File Specifications for subject project. c) Date for Receipt of Proposals: The date for receipt of proposals is hereby extended from 9 January 2004, at 1300 hours to 13 January 2004, 1300 hours. d) The point of contact for this action is Rachel Rosas at 916/557-7716 or Rachel.A.Rosas@usace.army.mil. All other terms and conditions related to this Request for Quotation remains unchanged.						
Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.						
15A. NAME AND TITLE OF SIGNER (Type or print)			16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) RACHEL A ROSAS / CONTRACT SPECIALIST TEL: 916-557-7716 EMAIL: Rachel.A.Rosas@usace.army.mil			
15B. CONTRACTOR/OFFEROR  (Signature of person authorized to sign)		15C. DATE SIGNED	16B. UNITED STATES OF AMERICA  BY (Signature of Contracting Officer)		16C. DATE SIGNED 06-Jan-2004	

SECTION SF 30 BLOCK 14 CONTINUATION PAGE

**SUMMARY OF CHANGES**

(End of Summary of Changes)

**Coastal Salt Marsh Pre-Remedial Action Sampling  
Hamilton Army Airfield  
Novato, California**

**Scope of Work  
Request for Quotation  
W91238-04-Q-0035**

**Coastal Salt Marsh Pre-Remedial Action Sampling  
Hamilton Army Airfield  
Novato, California**

<b>Sampling Date</b>	Weeks of January 19 and 26, 2004.
<b>QC Specifications</b>	<p>See attached Work Plan; The Contractor may propose Quantitation Limits (QL's) lower than those specified. The Government must approve all variances in the QL's. Provide QL's and supporting documentation to the Contracting Officer prior to implementation.</p> <p>If additional cleanup methods are necessary to meet required QL's they should be included in the per sample cost; however, if cleanup methods are unknown at this time, lab must notify USACE of any additional costs associated with necessary cleanup costs.</p>
<b>Deliverables</b>	Full data packages in Adobe Acrobat format, original completed Chain of Custody (COC), and EDDs in the USACE, Sacramento District ADR format (attached). The EDD must not be submitted until all errors resulting from comparison with the ADR library, provided by USACE, are eliminated or explained sufficiently in a narrative.
<b>Turnaround Time (TAT)</b>	30 calendar days from sample receipt by the laboratory for ALL deliverables; TAT will be closely monitored by the Project Chemist and MUST BE MET.
<b>Period of Performance</b>	From date of award to April 30, 2004
<b>Lab Certification</b>	The laboratory must be certified by the State of California and validated by the U.S. Army Corps of Engineers or successfully audited by National Environmental Laboratory Accreditation Conference (NELAC) auditors.

**Payment  
Method**

Invoices shall be submitted per sample delivery group (SDG) following receipt of all deliverables by USACE for that SDG. The Government shall pay the Contractor upon submission of proper invoices for supplies delivered and accepted or services rendered and accepted for the portion of work actually performed under this contract. Each invoice will be accompanied by a full accounting of each Line Item billed, the actual quantity being billed and supporting documentation to support the actual quantities. Invoices will be submitted to:

USAED, Finance Center  
ATTN: CEFC-AO-P  
5720 Integrity Drive  
Millington, Tennessee 38054-5005

An additional copy of the invoice shall be provided to:

USAED, Sacramento  
ATTN: CESP-K-ED-E (Pamela Amie)  
1325 J Street  
Sacramento, California 95814-2922

One copy for contract administration and tracking purposes only to:

USAED, Sacramento  
ATTN: CESP-K-CT (Rachel Rosas)  
1325 J Street  
Sacramento, California 95814-2922

**Technical Point of Contact** All questions of a technical nature shall be directed to:

Ms. Pamela Amie  
USAED, Sacramento (CESPK-ED-E)  
1325 J Street  
Sacramento, California 95814-2922

916/557-7811 (telephone)  
[Pamela.O.Amie@usace.army.mil](mailto:Pamela.O.Amie@usace.army.mil) (email)

**Contractual Points of Contact** All contractual issues shall be directed to:

Ms. Rachel Rosas  
USAED, Sacramento (CESPK-CT)  
1325 J Street  
Sacramento, California 95814-2922

(916) 557-7716 (telephone)  
[Rachel.A.Rosas@usace.army.mil](mailto:Rachel.A.Rosas@usace.army.mil)

**Technical Direction**

The Contractor shall take no direction from any Government employee other than the Contracting Officer that changes the Price, Schedule, or other terms and conditions of this contract. No substitution of work can be made without modifying the contract. Changes authorized by the Contracting Officer will be in the form of a written modification, signed by the contracting Officer, and received by the Contractor prior to acting upon those changes. The contractor will comply with the changes clause of this contract by notifying the Contracting Officer when the contractor believes direction has been given from persons other than the Contracting Officer. Any direction given by any Government employee outside their authority must be reported to the Contracting Officer. Any direction given by any Government employee outside their authority must be reported to the Contracting Officer.

**Special Notes:** Costs for sample containers (jars and bottles), shipment of containers to the site, and sample disposal must included in the above unit prices. MS/MSDs will be designated on the COC by USACE personnel - 1 per method. MS/MSDs will not be charged as a separate sample. The cost of these must be included in the unit price for the environmental samples listed in the table.

## **ADR Electronic Data Deliverable File Specifications**

The EDD consists of three separate, comma-delimited ASCII text files or Excel CSV files (two, if instrument calibration information is not required by the project). Each file corresponds to a database table. The tables are identified as the Analytical Results Table (A1), Laboratory Instrument Table (A2), and Sample Analysis Table (A3). The naming convention of each file uses the Laboratory Reporting Batch ID (SDG) followed by the table identifier (A1, A2, or A3), and then a “.txt” or “.csv” extension. For example, the EDD file names for a laboratory reporting batch identified as SDG001 that includes instrument calibration data would be as follows.

SDG001A1.txt or SDG001A1.csv  
SDG001A2.txt or SDG001A2.csv (A2 file is optional)  
SDG001A3.txt or SDG001A3.csv

### **Analytical Results Table (A1 File)**

The Analytical Results table contains results and related information on an analyte level for field samples and associated quality control samples (excluding calibrations and tunes). A result record must exist for each analyte reported in a method (specified in the project library) for every field sample and laboratory method blank analyzed by that method. Laboratory control samples and matrix spikes must have a result record for every spiked analyte and surrogate (if applicable) specified in the project library. Table A1 lists the field names and descriptions for the Analytical Results Table (A1). The project library is a reference table that both the EDD error checker and validation applications use when processing the EDD. The project library is populated with information from the project QAPP.

### **Laboratory Instrument Table (A2 File)**

The Laboratory Instrument table contains results and related information on an analyte level for instrument initial calibration standards, initial calibration verification standards, continuing calibration standards, and GC/MS tunes. A record must exist for each target analyte reported in a method (specified in the project library), for every calibration type (QCType) associated to samples reported in the EDD. Initial calibrations, initial calibration verifications, and associated samples are linked to each other using a unique Run Batch ID for every distinct initial calibration within a method. Continuing calibrations and associated samples are linked to each other using a unique Analysis Batch ID for every distinct continuing calibration within a method. GC/MS tunes are linked to initial and continuing calibrations (and hence samples) using the Run Batch and Analysis Batch IDs respectively. Depending on the level of validation required by the data user, the Laboratory Instrument table may not be requested in the deliverable. Table A2 lists field names and descriptions for the Laboratory Instrument Table (A2).

### **Sample Analysis Table (A3 File)**

The Sample Analysis table contains information related to sample and QC analyses (excluding calibrations and tunes), analytical methods, batch IDs, and sample preparation on a sample basis. A record exists for each sample/method/matrix/analysis type combination. Analysis Type equates to re-

analyses, re-extracts, and dilutions. Standard values exist for the Analysis Type field. Table A3 lists field names and descriptions for the Sample Analysis Table (A3).

## EDD Field Elements

The EDD Field Elements listed in Tables A1, A2, and A3 define the type of information required in the fields of each file. These include the field name, field sequence, field name description, field type, and field length for each table. Field elements in the EDD are sequenced according to the order they appear in Tables A1, A2, and A3. For example, in the Analytical Result table (the A1 file), the field “ClientSampleID” will always be the first piece of information to start a new line of data (or database record), followed by the fields “LabAnalysisRefMethodID”, “AnalysisType”, and so on.

The name, description, data type, character length, and standard value requirements for each field are listed in Tables A1, A2, and A3. Field standard values are listed in Table B. Table C lists standard values for methods and analytes. Certain fields in each file require information depending on a combination of sample, matrix, method, analyte type, and calibration or QC type records. These are required fields. Tables D1, D2, and D3 indicate the required fields for each table according to the instrument category (method), matrix, analyte type, sample, and QC or calibration type record.

When creating an EDD as a text file, use the ASCII character set in a file of lines terminated by a carriage return and line feed. No characters are allowed after the carriage return and line feed. Enclose each data field in double quotes (") and separate each field by commas (comma delimited). Data fields with no information (null) may be represented by two consecutive commas. For example, in the Sample Analysis table, since the “Collected”, “ShippingBatchID”, and “Temperature” fields do not apply to laboratory generated QA/QC samples, the record for a Laboratory Control Sample by Method 8270C would be entered as follows. Note that the first two fields (“ProjectNumber” and “ProjectName”) are omitted in this example.

...“LCSW100598”,,”AQ”,,”LCSW100598”,,”LCS”,,”8270C”,... (and so on)

Do not pad fields with leading or trailing spaces if a field is populated with less than the maximum allowed number of characters. In the above example, although the “MatrixID” field can accommodate up to 10 characters, only 2 characters were entered in this field.

**Table A1**  
**Field Descriptions for the Analytical Results Table (Table A1)**  
 Contains laboratory test results and related information for field and QC samples (excluding calibrations) on an analyte level.

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
ClientSampleID	Client's identifier for a sample If a sample is analyzed as a duplicate, matrix spike, or matrix spike duplicate, append suffixes DUP, MS and MSD respectively to the Client Sample ID (i.e., MW01DUP, MW01MS, and MW01MSD). For the Method Blanks, LCS, and LCSD enter the same value as the unique LaboratorySampleID. Do not append suffixes for dilutions, reanalyses, or reextracts. For example, MW01 <u>DL</u> and MW01 <u>RE</u> are not allowed.	Text	25	
LabAnalysisRefMethodID	Laboratory reference method (i.e., 8260B, 8270C, 6010B, etc). The Lab Analysis Ref Method ID is specified in the project library or QAPP.	Text	25	
AnalysisType	Defines the analysis type (i.e., Dilution, Reanalysis, etc.). This field is critical for distinguishing results from the same compound when multiple analyses are submitted for the same sample and method (i.e. dilutions, reextracts, etc).	Text	10	See Table B
LabSampleID	Laboratory tracking number for field samples and lab generated QC samples such as method blank, LCS, and LCSD Append suffixes DUP, MS and MSD, without an intervening hyphen or space, for the sample duplicate, matrix spike, and matrix spike dup respectively (i.e., 9810001DUP, 9810001MS, and 9810001MSD). Suffixes may be applied to the LabSampleID to designate dilutions, reanalyses, etc. The LabSampleID must be unique for each Method Blank, LCS, and LCSD. Each Method Batch must contain records for a matrix spike for inorganic methods and a matrix spike and matrix spike duplicate for organic methods. Parent sample records must exist for each MS and MS/MSD. If an MS or MS/MSD is shared between two EDDs, records for the MS or MS/MSD and its parent sample must exist in the Analytical Results table for both EDDs.	Text	25	
LabID	Identification of the laboratory performing the analyses	Text	7	See Table B
ClientAnalyteID	CAS # or unique identification If a CAS # is not available, use a unique identifier provided by the Contractor. For TICs from GC/MS analyses, enter retention time in decimal minutes as the Client Analyte ID. The Client Analyte ID for a particular target analyte is specified in the project library or QAPP. Each sample analysis (i.e. dilutions and reanalyses) must report the full target analyte list including surrogates if applicable. For the LCS, LCSD, MS, and MSD, only report the spike compounds for all methods, and surrogates for organic methods. For organics, surrogates must be reported for each analysis submitted (i.e. reanalyses and dilutions).	Text	12	
AnalyteName	Chemical name for the analyte (i.e., Benzene, Lead) The Analyte Name is specified in the project library or QAPP.	Text	60	
Result	Result value for the analyte Entries must be numeric even though this is a text field. For nondetects of target analytes and spikes, do not enter "ND" or leave this field blank. If an analyte or spike was not detected, enter the reporting limit value corrected for dilution and percent moisture as applicable.	Text	10	
ResultUnits	Units for Result (i.e., mg/Kg, ug/L, etc.) The result units to be reported for each target analyte and matrix in a given method are specified in the project library or QAPP.	Text	10	

**Table A1**  
**Field Descriptions for the Analytical Results Table (Table A1)**  
 Contains laboratory test results and related information for field and QC samples (excluding calibrations) on an analyte level.

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
LabQualifiers	A string of single letter result qualifiers assigned by the lab based on client-defined rules and values The "U" Lab Qualifier must be entered for all non detects. Other pertinent lab qualifiers may be entered with the "U" qualifier. Order is insignificant.	Text	7	See Table B
DetectionLimit	The detection limit value for the analyte being measured	Text	10	
DetectionLimitType	Specifies the type of detection limit (i.e., MDL, IDL, etc.)	Text	10	See Table B
RetentionTime	The time expressed in decimal minutes between injection and detection for GC/MS TICs only.	Text	5	
AnalyteType	Defines the type of result such as surrogate, spike, internal standard, and target compound.	Text	30	See Table B
PercentRecovery	The percent recovery value of a spike or surrogate compound Enter the recovery value as a numeric character. If the spike or surrogate was not recovered because of dilution, enter "DIL". If a spike or surrogate was not recovered because of matrix interference, enter "INT". If a spike or surrogate was not recovered because it was not added to the sample, enter "NS".	Text	5	See Table B
RelativePercentDifference	The relative percent difference (RPD) of two QC results such as MS/MSD, LCS/LCSD, and sample duplicates. Report RPD in the Sample Duplicate, LCSD, and MSD records only.	Number	3	
ReportingLimit	Reporting limit value for the measured analyte Factor in the dilution factor and percent moisture correction, if applicable. The Reporting Limit for each analyte and matrix in a given method is specified in the project library or QAPP.	Text	10	
ReportingLimitType	Specifies the type of reporting limit (i.e., CRQL, PQL, SQL, RDL, etc). The Reporting Limit Type for each method and matrix is specified in the project library or QAPP	Text	10	
ReportableResult	This field indicates whether or not the laboratory chooses an individual analyte result as reportable. Enter "YES" if the result is reportable. Enter "NO" if the result is not reportable. This field applies to target analytes only. If only one analysis is submitted for a particular sample and method, enter "YES" for all target compounds (Analyte Type = TRG) and all TICs (Analyte Type = TIC, for GC/MS only). If two or more analyses are submitted for a particular sample and method (i.e. initial analysis, reanalysis and/or dilutions), enter "YES" from only <u>one</u> of the analyses for each target compound. For example: a sample was run a second time at dilution because benzene exceeded the calibration range in the initial, undiluted analysis. All target analytes are reported in each analysis. For the initial analysis, (Analysis Type = RES), enter "NO" for benzene and enter "YES" for all other compounds. For the diluted analysis (Analysis Type = DL), enter "YES" for benzene and enter "NO" for all other compounds. For TICs (Analyte Type = TIC), if more than one analysis is submitted for a particular sample and method, choose only one of the analyses where Reportable Result = YES for <u>all</u> TICs. For example, a sample was run a second time because one or more target compounds exceeded the calibration range in the undiluted analysis. Choose a particular analysis and enter "YES" for all TICs. In the other analysis enter "NO" for all TICs.	Text	3	See Appendix B

**Table A2**  
**Field Descriptions for the Laboratory Instrument Table (Table A2)**  
 Contains information related to tuning and calibration of laboratory instruments on an analyte basis

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
InstrumentID	Laboratory instrument identification	Text	15	
QCType	Type of instrument QC (i.e., InstrumentPerformanceCheck or type of calibration standard)	Text	10	See Appendix B
Analyzed	Analysis date/time for BFB, DFTPP, initial calibration verification standards, calibration verification standards, and continuing calibration standards. For the <u>initial calibration</u> , enter date and time of the <u>last</u> standard analyzed. Also, see comments about initial calibrations in the AlternateLabAnalysisID field name description.	Date/Time	*	
AlternateLabAnalysisID	Common laboratory identification used for standards (i.e., VOA STD50, CCAL100, BFB50, etc.). For initial calibration, enter ICAL. Information from the initial calibration is entered as one record for each analyte that summarizes the results of the initial calibration (i.e. %RSD, correlation coefficient, and avg RF). Records are <u>not</u> entered for each individual standard within the initial calibration.	Text	12	
LabAnalysisID	Unique identification of the raw data electronic file associated with the calibration standard or tune (i.e., 9812101MS.DV). Leave this field blank for the initial calibration. See comments about initial calibrations in the AlternateLabAnalysisID field description. This field is only applicable where an electronic instrument file is created as part of the analysis.	Text	15	
LabAnalysisRefMethodID	Laboratory reference method (i.e., 8260B, 8270C, 6010B, etc.). The Lab Analysis Ref Method ID is specified in the project library or QAPP.	Text	25	
ClientAnalyteID	CAS # or unique. If CAS # is not available, use a unique identifier provided by the Contractor. Records for each calibration must report the full target analyte list including surrogates as applicable. The target analyte list is specified for each method in the project library or QAPP.	Text	12	
AnalyteName	Chemical name for the analyte (i.e., Benzene, Lead). The Analyte Name for each method is specified in the project library or QAPP	Text	60	
RunBatch	Unique identifier for a batch of analyses performed on one instrument under the control of one initial calibration and initial calibration verification. The Run Batch ID links both the initial calibration and initial calibration verification to subsequently analyzed and associated continuing calibrations, field samples, and QC analyses. For GC/MS methods, the RunBatch ID also links a BFB or DFTPP tune and the initial calibration and initial calibration verification standards to associated samples and method QC analyses. Even though methods 6010B and 6020 are treated as individual metals methods, all the metals reported under one initial calibration can use the same Run Batch ID. A new and unique Run Batch ID must used with every new initial calibration.	Text	12	

**Table A2**  
**Field Descriptions for the Laboratory Instrument Table (Table A2)**  
 Contains information related to tuning and calibration of laboratory instruments on an analyte basis

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
AnalysisBatch	Unique laboratory identifier for a batch of analyses performed on one instrument and under the control of a continuing calibration or continuing calibration verification. The Analysis Batch ID links the continuing calibration or calibration verification to subsequently analyzed and associated field sample and QC analyses. For GC/MS methods, the Analysis Batch ID also links the BFB or DFTPP tune and the continuing calibrations to associated samples and method QC analyses. Even though methods 6010B and 6020 are treated as individual metals methods, all the metals reported under one continuing calibration can use the same Analysis Batch ID. A new and unique Analysis Batch ID must be used with every new continuing calibration or continuing calibration verification. For GC methods, only report opening standards, do not include closing standards (unless the closing standard functions as the opening standard for a subsequent set of analyses, in which case a new and unique Analysis Batch ID is assigned). When dual or confirmation columns/detectors are used, enter results from the primary column/detector only (this is similar to CLP Pesticide reporting).	Text	12	
LabReportingBatch	Unique laboratory identifier for a batch of samples including associated calibrations and method QC, reported as a group by the lab ( i.e. lab work order #, log-in #, or SDG). Links all instrument calibrations, samples, and method QC reported as a group or SDG.	Text	12	
PercentRelativeStandard Deviation	The standard deviation as a percentage of the mean used to evaluate initial calibration linearity. Organic methods may use either %RSD or Correlation Coefficient. If applicable, enter the %RSD. Do not enter if the Correlation Coefficient is used.	Number	Single	
CorrelationCoefficient	The correlation coefficient resulting from linear regression of the initial calibration. For metals by ICAP, enter '1.0' if a two-point initial calibration was analyzed. Organic methods may use either %RSD or Correlation Coefficient. If applicable, enter the Correlation Coefficient. Do not enter if the %RSD is used	Number	Single	
RelativeResponseFactor	This field applies to GC/MS only. Enter the relative response factor for continuing calibration analyte records. Enter the average relative response factor for initial calibration analyte records. Refer to comments about initial calibration records in the field description for AlternateLabAnalysisID.	Number	Single	
PercentDifference (or Percent Recovery)	For organic methods, this field is the difference between 2 measured values expressed as a percentage. If %RSD is reported, enter the % difference between the average response factor of the initial calibration (IC) and the response factor of the initial calibration verification (ICV) or continuing calibration (CCV). If correlation coefficient is used, enter the % difference between the true value and the measured value. The PercentDifference is expressed as a negative or positive value. Do not express PercentDifference as an absolute value. Use a negative value if the CCV or ICV response factor is less than the IC average response factor or, in the case of correlation coefficient, the CCV or ICV measured value is less than the true value. Use a positive value if the CCV or ICV response factor is greater than the IC average response factor, or in the case of correlation coefficient, the CCV or ICV measured value is greater than the true value. For inorganic methods, this field is the recovery of an analyte expressed as a percentage of the true amount (i.e., %R for a metal in the continuing calibration or initial calibration verification by Method 6010B).	Number	Single	

**Table A2**  
**Field Descriptions for the Laboratory Instrument Table (Table A2)**  
 Contains information related to tuning and calibration of laboratory instruments on an analyte basis

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
PeakID01	Identifies individual ions for GC/MS tuning compounds (i.e., BFB, DFTPP). For BFB, m/z = 50; For DFTPP, m/z = 51	Number	Integer	
PercentRatio01	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID01	Number	Single	
PeakID02	Identifies individual ions for GC/MS tuning compounds (i.e., BFB, DFTPP). For BFB, m/z = 75; For DFTPP, m/z = 68	Number	Integer	
PercentRatio02	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID02.	Number	Single	
PeakID03	Identifies individual ions for GC/MS tuning compounds (i.e., BFB, DFTPP). For BFB, m/z = 95; For DFTPP, m/z = 69	Number	Integer	
PercentRatio03	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID03.	Number	Single	
PeakID04	Identifies individual ions for GC/MS tuning compounds (i.e., BFB, DFTPP). For BFB, m/z = 96 For DFTPP, m/z = 70	Number	Integer	
PercentRatio04	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID04.	Number	Single	
PeakID05	Identifies individual ions for GC/MS tuning compounds (i.e., BFB, DFTPP). For BFB, m/z = 173; For DFTPP, m/z = 127	Number	Integer	
PercentRatio05	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID05.	Number	Single	
PeakID06	Identifies individual ions for GC/MS tuning compounds (i.e., BFB, DFTPP). For BFB, m/z = 174; For DFTPP, m/z = 197	Number	Integer	
PercentRatio06	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID06.	Number	Single	
PeakID07	Identifies individual ions for GC/MS tuning compounds (i.e., BFB, DFTPP). For BFB, m/z = 175; For DFTPP, m/z = 198	Number	Integer	
PercentRatio07	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID07.	Number	Single	
PeakID08	Identifies individual ions for GC/MS tuning compounds (i.e., BFB, DFTPP). For BFB, m/z = 176; For DFTPP, m/z = 199	Number	Integer	
PercentRatio08	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID08.	Number	Single	
PeakID09	Identifies individual ions for GC/MS tuning compounds (i.e., BFB, DFTPP). For BFB, m/z = 177; For DFTPP, m/z = 275	Number	Integer	
PercentRatio09	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID09.	Number	Single	
PeakID10	Identifies individual ions for GC/MS tuning compounds (i.e., DFTPP). For DFTPP, m/z = 365	Number	Integer	
PercentRatio10	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID10.	Number	Single	
PeakID11	Identifies individual ions for GC/MS tuning compounds (i.e.,	Number	Integer	

**Table A2**  
**Field Descriptions for the Laboratory Instrument Table (Table A2)**  
 Contains information related to tuning and calibration of laboratory instruments on an analyte basis

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
	DFTPP). For DFTPP, m/z = 441			
PercentRatio11	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID11.	Number	Single	
PeakID12	Identifies individual ions for GC/MS tuning compounds (i.e., DFTPP). For DFTPP, m/z = 442	Number	Integer	
PercentRatio12	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID12.	Number	Single	
PeakID13	Identifies individual ions for GC/MS tuning compounds (i.e., DFTPP). For DFTPP, m/z = 443	Number	Integer	
PercentRatio13	Ion abundance ratios of the GC/MS tuning compounds reported as a percentage. Linked to an individual PeakID13.	Number	Single	

\* Date/time format is: MM/DD/YYYY hh:mm where MM = month, DD = day, YYYY = four digits of the year, hh = hour in 24 hour format, and mm = minutes.

## Table A3

### Field Description for the Sample Analysis (Table A3)

Contains information related to laboratory sample and QC analyses (excluding calibrations and tunes), analytical methods, batching information, and sample preparation

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
ProjectNumber	Project number assigned by the client	Text	30	
ProjectName	Project name assigned by the client	Text	90	
ClientSampleID	Client's identifier for a sample If a sample is analyzed as a duplicate, matrix spike, or matrix spike duplicate, append suffixes DUP, MS and MSD respectively to the Client Sample ID (i.e., MW01DUP, MW01MS, and MW01MSD). For the Method Blanks, LCS, and LCSD enter the unique LaboratorySampleID. Do not append suffixes for dilutions, reanalyses, or reextracts. For example, MW01DL and MW01RE are not allowed.	Text	25	
Collected	Date/Time the sample of sample collection Leave this field blank for Method Blank, LCS, and LCSD. For Trip Blanks, enter the collection date of associated samples.	Date/Time	*	
MatrixID	Sample matrix (i.e., AQ, SO, etc.)	Text	10	See Appendix B
LabSampleID	Laboratory tracking number for field samples and lab generated QC samples such as method blank, LCS, and LCSD Append suffixes DUP, MS and MSD, without an intervening hyphen or space, for the sample duplicate, matrix spike, and matrix spike dup respectively (i.e., 9810001DUP, 9810001MS, and 9810001MSD). Suffixes may be applied to the LabSampleID to designate dilutions, reanalyses, etc. The LabSampleID must be unique for each Method Blank, LCS, and LCSD. Each Method Batch must contain records for a matrix spike for inorganic methods and a matrix spike and matrix spike duplicate for organic methods. Parent sample records must exist for each MS and MS/MSD. If an MS or MS/MSD is shared between two EDDs, records for the MS or MS/MSD and its parent sample must exist in the Sample Analysis table for both EDDs.	Text	25	
QCType	This record identifies the type of quality control sample QC (i.e., Duplicate, LCS, Method Blank, MS, or MSD) For regular samples, leave this field blank.	Text	10	See Appendix B
ShippingBatchID	Unique identifier assigned to a cooler or shipping container used to transport client or field samples. Links all samples to a cooler or shipping container. No entry for method blanks, LCS, and LCSD.	Text	25	
Temperature	Temperature (in centigrade degrees) of the sample as received.	Number	Single	
LabAnalysisRefMethodID	Laboratory reference method (i.e., 8260B, 8270C, 6010B, etc.). The Lab Analysis Ref Method ID is specified in the project library or QAPP.	Text	25	
PreparationType	Preparation Method Number (i.e, 3010A, 3510C, 3550C, 5030B, etc.) For methods that do not have a specific preparation method number, use "Gen Prep".	Text	25	See Appendix B
AnalysisType	Defines the analysis type (i.e., Dilution, Reanalysis, etc.). This field is critical for distinguishing samples when multiple analyses are submitted for the same sample and method (i.e. dilutions, reextracts, etc). Enter "RES" for initial sample records.	Text	10	See Appendix B
Prepared	Preparation date/time	Date/Time	*	
Analyzed	Date and time of analysis	Date/Time	*	
LabID	Identification of the laboratory performing the analysis	Text	7	See Appendix B

## Table A3

### Field Description for the Sample Analysis (Table A3)

Contains information related to laboratory sample and QC analyses (excluding calibrations and tunes), analytical methods, batching information, and sample preparation

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
QCLevel	Level of analytical laboratory QC associated with the analysis (i.e., Certificate of Analysis)	Text	6	See Appendix B
ResultBasis	Wet or dry weight	Text	3	See Appendix B
TotalOrDissolved	This field indicates if the results related to this sample and method are expressed as total or dissolved. This field is applicable to samples analyzed for metals.	Text	3	See Appendix B
Dilution	Overall dilution of the sample aliquot. A value of one corresponds to nominal method conditions. Insert value of one for blanks, LCS, and LCSD. Dilution must be expressed as a whole number.	Number	Single	
HandlingType	Type of leaching procedure (i.e., SPLP, TCLP, WET).	Text	10	See Appendix B
HandlingBatch	Unique laboratory identifier for a batch of samples prepared together for a leaching procedure (i.e., SPLP, TCLP, or WET preparation). Links samples with leaching blanks.	Text	12	
LeachateDate	Leachate date (i.e., date for SPLP, TCLP, or WET preparation)	Date /Time	*	
PercentMoisture	Percent of sample composed of water. Enter for soil and sediment samples only.	Number	Single	
MethodBatch	Unique laboratory identifier for a batch of samples of similar matrices analyzed by one method and treated as a group for field QC purposes. Links the matrix spike and/or matrix spike duplicate or laboratory duplicates to associated samples. Note, the MethodBatch association may coincide with the PreparationBatch association. The MethodBatch is specifically used to link the MS, MS/MSD, or DUP to associated samples.	Text	12	
PreparationBatch	Unique laboratory identifier for a batch of sample aliquots prepared together for analysis by one method. Links samples with method blanks and laboratory control samples. Note, the PreparationBatch association may coincide with the MethodBatch association. The PreparationBatch is specifically used to link the Method Blank and LCS to associated samples.	Text	12	
RunBatch	Unique identifier for a batch of analyses performed on one instrument under the control of one initial calibration and initial calibration verification. Links both the initial calibration and initial calibration verification to subsequently analyzed and associated continuing calibrations, field samples, and QC analyses. For GC/MS methods, the "RunBatch" also links a BFB or DFTPP tune and the initial calibration and initial calibration verification standards to associated samples and method QC analyses. Even though methods 6010B and 6020 are treated as individual metals methods, all sample/metal method records reported under one initial calibration can use the same Run Batch ID. A different and unique Run Batch ID must be used with every new initial calibration. The identifier entered in this field links a particular sample/method/analysis type record to a set of associated initial calibration and initial calibration verification records from Table A2.	Text	12	

## Table A3

### Field Description for the Sample Analysis (Table A3)

Contains information related to laboratory sample and QC analyses (excluding calibrations and tunes), analytical methods, batching information, and sample preparation

Field Name	Field Name Description	Field Type	Field Length	Standard Value List
AnalysisBatch	Unique laboratory identifier for a batch of analyses performed on one instrument and under the control of a continuing calibration or continuing calibration verification. Links the continuing calibration or calibration verification to subsequent, associated field sample and QC analyses. For GC/MS methods the "AnalysisBatch" also links the BFB or DFTPP tune <u>and</u> the continuing calibrations to associated samples and method QC analyses. Even though methods 6010B and 6020 are treated as individual metals methods, all sample/metal method records reported under one continuing calibration can use the same Analysis Batch ID. A different and unique Analysis Batch ID must be created with every new continuing calibration or continuing calibration verification. The identifier entered in this field links a particular sample/method/analysis type record to a set of associated continuing calibration records from Table A2.	Text	12	
LabReportingBatch	Unique laboratory identifier for a batch of samples including associated calibrations and method QC, reported as a group by the lab ( i.e. lab work order #, log-in #, or SDG). Links all instrument calibrations, samples, and method QC reported as a group or SDG.	Text	12	
LabReceipt	Date the sample was received in the lab	Date/Time	*	
LabReported	Date the hardcopy data were reported by the lab	Date/Time	*	

\* Date/time format is: MM/DD/YYYY hh:mm where MM = month, DD = day, YYYY = four digits of the year, hh = hour in 24 hour format, and mm = minutes.

## Table B Standard Value List (SVL)

Field Name	Standard Value	Standard Value Description
AnalysisType**	DL	Dilution of the original sample
	DL2	Second dilution of the original sample
	DL3	Third dilution of the original sample
	DL4	Fourth dilution of the original sample
	RE	Reanalysis/reextraction of sample
	RE2	Second reanalysis/reextraction of sample
	RE3	Third reanalysis/reextraction of sample
	RE4	Fourth reanalysis/reextraction of the original sample
	RES	The initial or original sample.
AnalyteName	Refer to QAPP and Project Library	Refer to QAPP and Project Library
AnalyteType	IS	Internal standard as defined per CLP usage
	SPK	Spiked analyte
	SURR	Surrogate as defined as per CLP usage
	TIC	Tentatively identified compound for GC/MS analysis
	TRG	Target compound
DetectionLimitType	CRDL	Contract required detection limit
	IDL	Instrument detection limit
	MDA	Minimum detectable activity
	MDL	Method detection limit
HandlingType	WET	Wet leaching procedure
	SPLP	Synthetic Precipitation Leaching Procedure
	TCLP	Toxicity Characteristic Leaching Procedure
LabQualifiers*	*	INORG: Duplicate analysis was not within control limits
	*	ORG: Surrogate values outside of contract required QC limits
	+	INORG: Correlation coefficient for the method of standard additions (MSA) was less than 0.995
	A	ORG: Tentatively identified compound (TIC) was a suspected aldol-condensation product
	B	INORG: Value less than contract required detection limit but greater than or equal to instrument detection limit
	B	ORG: Compound is found in the associated blank as well as in the sample
	C	ORG: Analyte presence confirmed by GC/MS
	D	Result from an analysis at a secondary dilution factor
	E	INORG: Reported value was estimated because of the presence of interference
	E	ORG: Concentrations exceed the calibration range of the instrument
	H	Analysis performed outside method or client-specified holding time requirement
	J	Estimated value
	M	INORG: Duplicate injection precision was not met
	N	INORG: Spiked sample recovery was not within control limits
	N	ORG: Presumptive evidence of a compound
	P	ORG: Difference between results from two GC columns unacceptable (>25% Difference)
S	Reported value was determined by the method of standard additions (MSA)	
U	Compound was analyzed for but not detected. Analyte result was below the ReportingLimitType.	
W	INORG: Post digestion spike was out of control limits	
X	Reserved for a lab-defined data qualifier	
Y	Reserved for a lab-defined data qualifier	
Z	Reserved for a lab-defined data qualifier	
LabID		List of contract laboratories. To be established by each contractor.
MatrixID	AIR	Air
	AQ	Water
	ASH	Ash
	BIOTA	Biological matter
	FILTER	Filter
	LIQUID	Non-aqueous liquid
	OIL	Oil
	SED	Sediment

## Table B Standard Value List (SVL)

Field Name	Standard Value	Standard Value Description	
MatrixID (continued)	SLUDGE	Sludge	
	SO	Soil	
	SOLID	Non-soil/sediment solid	
	TISSUE	Tissue	
	WASTE	Waste	
PreparationType*	3005A	Acid Digestion of Waters for Total Recoverable or Dissolved Metals by FLAA or ICP	
	3010A	Acid of Aqueous Samples and Extracts for Total Metals by FLAA or ICP	
	3015	Microwave Assisted Acid Digestion of Aqueous Samples and Extracts	
	3020A	Acid Digestion of Aqueous Samples and Extracts for Total Metals by GFAA	
	3031	Acid Digestion of Oils for Metals Analysis by AA or ICP	
	3050B	Acid Digestion of Sediments, Sludges, and Soils	
	3051	Microwave Assisted Acid Digestion of Sediments, Sludges, Soils and Oils	
	3052	Microwave Assisted Acid Digestion of Siliceous and Organically Based Matrices	
	3060A	Alkaline Digestion for Hexavalent Chromium	
	3510C	Separatory Funnel Liquid-Liquid Extraction	
	3520C	Continuous Liquid-Liquid Extraction	
	3535	Solid Phase Extraction	
	3540C	Soxhlet Extraction	
	3541	Automated Soxhlet Extraction	
	3545	Pressurized Fluid Extraction	
	3550B	Ultrasonic Extraction	
	3560	Supercritical Fluid Extraction of Total Recoverable Petroleum Hydrocarbons	
	5030B	Purge and Trap for Aqueous Samples	
	5035	Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples	
	7470A	Acid digestion of waters for Mercury analysis	
	7471A	Acid digestion of soils and solids for Mercury analysis	
	Gen Prep	Generic preparation type when a preparation method ID does not exist (used mostly for general chemistry methods)	
	QCLevel	COA	Certificate of Analysis (accuracy and precision, no calibration)
		COACAL	Certificate of Analysis (accuracy and precision including calibration)
QCType	MB	Analytical control consisting of all reagents and standards that is carried through the entire procedure (Method Blank)	
	CV	(Calibration Verification) Analytical standard run at a specified frequency to verify the calibration of the analytical system	
	CCV	(Continuing Calibration Verification) Analytical standard run every 12 hours to verify the calibration of the GC/MS system	
	DUP	A second aliquot of a sample that is treated the same as the original aliquot to determine the precision of the method	
	EB	Field equipment rinseate	
	FB	(Field blank) Analyte-free water or solvent brought to the field in sealed containers and transported to lab with sample containers	
	FD	Duplicate sample taken from a field sample	
	IC	(Initial Calibration) Analysis of analytical standards for a series of different specified concentrations	
	ICV	(Initial Calibration Verification) Analytical standard run at a specified frequency to verify the accuracy of the initial calibration of the analytical system	
	IPC	(Instrument Performance Check) Analysis of DFTPP or BFB to evaluate the performance of the GC/MS system	
	LCS	(Laboratory Control Sample) A control sample of known composition	
	LCSD	(Laboratory Control Sample Duplicate) A duplicate control sample of known composition	
	MS	(Matrix Spike) Aliquot of a matrix spiked with known quantities and subjected to the entire analytical procedure to measure recovery	
	MSD	(Matrix Spike Duplicate) A second aliquot of the same matrix as the matrix spike that is spiked in order to determine the precision of the method	
	PB	(Preparation Blank) Analytical control containing distilled, deionized water and reagents, and subjected to entire analytical procedure	
SB	(Storage Blank) Aliquot of analyte-free water or solvent stored with the samples as a check on contamination from the storage process		
TB	(Trip Blank) Analyte free water transported with sample bottles prior to and after sample collection		

## Table B Standard Value List (SVL)

Field Name	Standard Value	Standard Value Description
ReportingLimitType	CRDL	Contract required detection limit
	CRQL	Contract required quantitation limit
	PQL	Practical quantitation limit
	SQL	Sample quantitation limit
	RDL	Reportable detection limit
ResultBasis	DRY	Result was calculated on a dry weight basis
	WET	Result was calculated on a wet weight basis
ResultUnits*	ug/L	Micrograms per liter
	mg/L	Milligrams per liter
	ug/Kg	Micrograms per kilogram
	mg/Kg	Milligrams per kilogram
	pg/L	Picograms per liter
	ng/Kg	Nanograms per kilogram
TotalOrDissolved	DIS	Dissolved
	TOT	Total

\*additional values are acceptable by adding these to the standard value table

\*\*The Analysis Type field can accept other standard values. Review the technical notes included with the CD containing version 2.0 of ADR. Additional valid values have been added to accommodate Total vs. Dissolved for metals and to accommodate identifying analyses on leachates for Table A1 records.

## **ADR Standard Values for Methods and Analytes**

The EDD error checker uses a project library, which contains information specific to a particular project, usually specified in a QAPP. The project library is the reference used by the error checker. It controls the field values, such as method names, analyte names and other information that can be entered in an EDD. Before a method name can be added to a project library it must first exist in the application's standard value table. In this way, the application has flexibility to accommodate different method and analyte names required by a contractor or used by a laboratory. Table C lists all the methods built into the ADR standard value table. Additional methods can be added to this table if necessary. If a particular method specified in the QAPP or used by the laboratory is not listed in this table, it must be added to the standard value table before that method can be built into a project library. Methods added to a project library become standard values for the LabReferenceMethodID field (method field) in any EDD processed through the error checker when selecting that project library as reference.

### **Standard Values for Analytes**

A CAS number and analyte name must also exist in the standard value table before they can be added to a method in a project library. The ADR standard value table contains records for a few thousand compound names and their CAS numbers. Additional CAS number and analyte name records can be added if necessary. Analyte names and CAS numbers added to a method within a project library become standard values for the Analyte Name and Client Analyte ID (CAS number) fields (for a particular method) in any EDD processed through the error checker when selecting that project library as reference. The application allows different analyte names (synonyms) for a given CAS number, but only one particular analyte name (specified by the QAPP) is entered for a CAS number in the project library.

**Table C Standard Values for Analytical Methods**

(additional methods or variations on method names can be added to the standard value table)

Method	Description
524.2	Volatile Organic Compounds by GC/MS in Drinking Water
6010B	Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Ag	Silver by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Al	Aluminum by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-As	Arsenic by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-B	Boron by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Ba	Barium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Be	Beryllium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Ca	Calcium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Cd	Cadmium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Co	Cobalt by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Cr	Chromium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Cu	Copper by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Fe	Iron by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-K	Potassium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Li	Lithium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Mg	Magnesium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Mn	Manganese by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Mo	Molybdenum by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Na	Sodium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Ni	Nickel by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-P	Phosphorus by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Pb	Lead by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Sb	Antimony by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Se	Selenium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Sn	Tin by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Sr	Strontium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-TCLP	TCLP Metals by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Tl	Thallium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-V	Vanadium by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6010B-Zn	Zinc by Inductively Coupled Plasma-Atomic Emission Spectroscopy
6020	Metal by Inductively Coupled Plasma/Mass Spectrometry
7041	Antimony by Graphite Furnace Atomic Absorption
7060A	Arsenic by Graphite Furnace Atomic Absorption
7081	Barium by Graphite Furnace Atomic Absorption
7091	Beryllium by Graphite Furnace Atomic Absorption
7131A	Cadmium by Graphite Furnace Atomic Absorption
7191	Chromium by Graphite Furnace Atomic Absorption
7201	Cobalt by Graphite Furnace Atomic Absorption
7211	Copper by Graphite Furnace Atomic Absorption
7381	Iron by Graphite Furnace Atomic Absorption
7421	Lead by Graphite Furnace Atomic Absorption

## Table C Standard Values for Analytical Methods

(additional methods or variations on method names can be added to the standard value table)

Method	Description
7461	Manganese by Graphite Furnace Atomic Absorption
7470A	Mercury by Graphite Furnace Atomic Absorption
7471A	Mercury by Graphite Furnace Atomic Absorption
7481	Molybdenum by Graphite Furnace Atomic Absorption
7521	Nickel by Graphite Furnace Atomic Absorption
7740	Selenium by Graphite Furnace Atomic Absorption
7761	Silver by Graphite Furnace Atomic Absorption
7841	Thallium by Graphite Furnace Atomic Absorption
7911	Vanadium by Graphite Furnace Atomic Absorption
7951	Zinc by Graphite Furnace Atomic Absorption
8011	1,2-Dibromoethane and 1,2-Dibromo-3-chloropropane by Microextraction and GC
8015B	Non-halogenated organics by GC using FID
8015B DRO	Diesel Range Organics by GC using FID
8015B Extractable TPH	Extractable Petroleum Hydrocarbons as Gasoline
8015B GRO	Gasoline Range Organics by GC using FID
8015B Purgeable TPH	Purgeable Petroleum Hydrocarbons as Diesel and Motor Oil
8021B	Aromatic and Halogenated Volatiles by GC using PID/ECD
8081A	Organochlorine Pesticides by GC using ECD
8082	Polychlorinated Biphenyls (PCBs) by GC using ECD or ELCD
8082 PCB Congeners	Polychlorinated Biphenyl Congeners by GC using ECD or ELCD
8141A	Organophosphorus Compounds by GC
8151A	Chlorinated Herbicides by GC using Methylation or Pentafluorobenzoylation
8260B	Volatile Organic Compounds by GC/MS
8270C	Semi-Volatile Organic Compounds by GC/MS
8280A	Polychlorinated Dibenzo-p--Dioxins and Polychlorinated Dibenzofurans
8290	Polychlorinated Dibenzodioxins and Polychlorinated Dibenzofurans
8310	Polynuclear Aromatic Hydrocarbons by HPLC
8330	Nitroaromatics and Nitramines (Explosives) by HPLC
9040	pH Electrometric Measurement
9045	Soil and Waste pH
9056	Determination of Inorganic Anions by Ion Chromatography
300.0	Determination of Inorganic Anions by Ion Chromatography
353.2	Determination of Total Nitrate-Nitrite by Colorimetry
160.1	Total Dissolved Solids
310.1	Alkalinity
415.1	Total Organic Carbon by combustion or oxidation
DHS Luft/7420	Organic lead
410.4	Chemical Oxygen Demand by Colorimetry
SM 3500-Fe D#4	Determination of Iron by Colorimetry
SM 4500-CO2 D	Carbon Dioxide
351.2	Total Kjeldahl Nitrogen
7196A	Hexavalent Chromium (Colorimetric)

**Table D1 (1 of 2)**

**Required Fields in the Analytical Results Table for GC/MS, GC, and HPLC Methods**

Field	GC/MS Methods			GC and HPLC Methods		
	Regular Sample*	MS/MSD	Method Blank, LCS/LCSD	Regular Sample*	MS/MSD	Method Blank, LCS/LCSD
ClientSampleID	X	X	X	X	X	X
LabAnalysisRefMethodID	X	X	X	X	X	X
AnalysisType	X	X	X	X	X	X
LabSampleID	X	X	X	X	X	X
LabID	X	X	X	X	X	X
ClientAnalyteID	X	X	X	X	X	X
AnalyteName	X	X	X	X	X	X
Result	X	X	X	X	X	X
ResultUnits	X	X	X	X	X	X
LabQualifiers	Q	Q	Q	Q	Q	Q
Detection Limit	X	X	X	X	X	X
DetectionLimitType	X	X	X	X	X	X
RetentionTime	T		T			
AnalyteType	X	X	X	X	X	X
PercentRecovery	S	R	R	S	R	R
RelativePercentDifference		D	D		D	D
ReportingLimit	X	X	X	X	X	X
ReportingLimitType	X	X	X	X	X	X
ReportableResult	X	X	X	X	X	X

Key

- X Required Field
- D Required field for spiked compounds in the LCSD and MSD only
- Q Required field if laboratory has qualified result
- R Required field if AnalyteType = "SPK" or "SURRE"
- S Required field for surrogate compounds only
- T Required field for tentatively identified compounds by GC/MS only
- \* Also includes Equipment Blanks, Field Blanks, and Trip Blanks

**Table D1 (2 of 2)**  
**Required Fields in the Analytical Results Table for ICAP, AA, and IC Methods**

Field	ICAP and AA Methods			IC and Wet Chemistry Methods		
	Regular Sample*	Sample Duplicate, MS/MSD	Method Blank, LCS/LCSD	Regular Sample*	Sample Duplicate MS/MSD	Method Blank, LCS/LCSD
ClientSampleID	X	X	X	X	X	X
LabAnalysisRefMethodID	X	X	X	X	X	X
AnalysisType	X	X	X	X	X	X
LabSampleID	X	X	X	X	X	X
LabID	X	X	X	X	X	X
ClientAnalyteID	X	X	X	X	X	X
AnalyteName	X	X	X	X	X	X
Result	X	X	X	X	X	X
ResultUnits	X	X	X	X	X	X
LabQualifiers	Q	Q	Q	Q	Q	Q
Detection Limit	X	X	X	X	X	X
DetectionLimitType	X	X	X	X	X	X
RetentionTime						
AnalyteType	X	X	X	X	X	X
PercentRecovery		S	S		S	S
RelativePercentDifference		R	R		R	R
ReportingLimit	X	X	X	X	X	X
ReportingLimitType	X	X	X	X	X	X
ReportableResult	X	X	X	X	X	X

Key

- X Required field
- Q Required field if laboratory has qualified result
- R Required field for spiked compounds in LCSD or MSD, or target compounds in the Sample Duplicate only
- S Required field if AnalyteType = "SPK"
- \* Also includes Trip Blanks, Equipment Blanks, and Field Blanks

## Table D2

### Required Fields in the Laboratory Instrument Table

Field	GC/MS Tunes		Initial Calibration				Initial Calibration Verification				Calibration Verification, Continuing Calibration
	VOA	SVOA	GC/MS	GC HPLC	ICP/AA	IC*	GC/MS	GC HPLC	ICP/AA	IC*	ALL METHODS
InstrumentID	X	X	X	X	X	X	X	X	X	X	X
QCType	X	X	X	X	X	X	X	X	X	X	X
Analyzed	X	X	X	X	X	X	X	X	X	X	X
AlternateLabAnalysisID	X	X	X	X	X	X	X	X	X	X	X
LabAnalysisID	X	X					X	X	X	X	X
LabAnalysisRefMethodID	X	X	X	X	X	X	X	X	X	X	X
ClientAnalyteID	X	X	X	X	X	X	X	X	X	X	X
AnalyteName	X	X	X	X	X	X	X	X	X	X	X
RunBatch	X	X	X	X	X	X	X	X	X	X	X
AnalysisBatch	C	C									X
LabReportingBatch	X	X	X	X	X	X	X	X	X	X	X
PercentRelativeStandardDeviation			X	X							
CorrelationCoefficient			B	B	X	X					
RelativeResponseFactor			X				X				M
PercentDifference							X	X	X	X	X
PeakID01	X	X									
PercentRatio01	X	X									
PeakID02	X	X									
PercentRatio02	X	X									
PeakID03	X	X									
PercentRatio03	X	X									
PeakID04	X	X									
PercentRatio04	X	X									
PeakID05	X	X									
PercentRatio05	X	X									
PeakID06	X	X									
PercentRatio06	X	X									
PeakID07	X	X									
PercentRatio07	X	X									
PeakID08	X	X									
PercentRatio08	X	X									
PeakID09	X	X									
PercentRatio09	X	X									
PeakID10		X									
PercentRatio10		X									
PeakID11		X									
PercentRatio11		X									
PeakID12		X									
PercentRatio12		X									
PeakID13		X									
PercentRatio13		X									

**Key**

- X Required field (some fields are not applicable to some General (Wet) Chemistry tests)
- B Required field if reporting best fit
- C Required field if BFB or DFTPP associated with a continuing calibration only
- M Required field for GC/MS continuing calibration only

\*IC Includes Ion Chromatography and Classical or Wet Chemistry methods. Methods such as pH, Conductivity, and others do not use traditional calibration procedures, therefore some fields marked as a required field under the "IC" column do not apply for these methods.

**Table D3**  
**Required Fields in the Sample Analysis Table**

Field	GC, GC/MS, HPLC Methods		ICAP and AA Methods		IC and Wet Chemistry Methods	
	Method Blanks, LCS/LCSD	Regular Samples*, Sample Duplicate, MS/MSD	Method Blanks, LCS/LCSD	Regular Samples*, Sample Duplicate, MS/MSD	Method Blanks, LCS/LCSD	Regular Samples*, Sample Duplicate, MS/MSD
ClientSampleID	X	X	X	X	X	X
Collected		X		X		X
MatrixID	X	X	X	X	X	X
LabSampleID	X	X	X	X	X	X
QCType	X	Q	X	Q	X	X
ShippingBatchID		X		X		X
Temperature		X				X
LabAnalysisRefMethodID	X	X	X	X	X	X
PreparationType	X	X	X	X	X	X
AnalysisType	X	X	X	X	X	X
Prepared	A	A	X	X	N	N
Analyzed	X	X	X	X	X	X
LabID	X	X	X	X	X	X
QCLevel	X	X	X	X	X	X
ResultsBasis		S		S		S
TotalOrDissolved			W	W		
Dilution	X	X	X	X	X	X
HandlingType	L	L	L	L	L	L
HandlingBatch	L	L	L	L	L	L
LeachateDate	L	L	L	L	L	L
Percent Moisture		S		S		S
MethodBatch	X	X	X	X	X	X
PreparationBatch	X	X	X	X	X	X
RunBatch	C	C	C	C	C	C
AnalysisBatch	C	C	C	C	C	C
LabReportingBatch	X	X	X	X	X	X
LabReceipt		X		X		X
LabReported	X	X	X	X	X	X

**Key**

- X Required field
- A Required field for samples prepared by methanol extraction
- C Required field if Instrument Calibration Table (A2) is included in EDD
- L Required field if analysis performed on SPLP, TCLP, or WET extracts
- N Required field only for samples that require preparation before analysis
- Q Required field for Sample Duplicate, MS, and MSD only
- S Required field if "MatrixID" = "SO" or "SED"
- W Required field for aqueous samples only
- \* Includes Trip Blanks, Equipment Blanks, and Field Blanks