



Lead in School Lab Guidance Manual

**Information Support Services
Information Management Bureau
Central Services Division**

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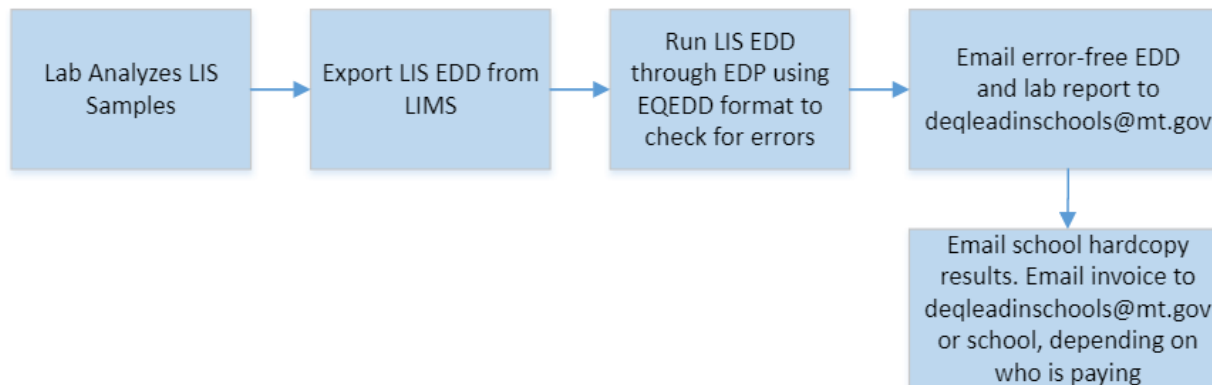
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| Document History | | | |
|-------------------------|----------------------|-------------------|---|
| Revision # | Revision Date | Revised By | Notes |
| 1.0 | 4/12/2021 | Jolene McQuillan | Initial document for LIS lab guidance |
| 1.1 | 11/9/2021 | Jolene McQuillan | Updated DEQ website link |
| 2.0 | 1/6/2021 | Jolene McQuillan | Removed section 4.0 on EQulS Enterprise |
| | | | |
| | | | |

1.0 Lead in School Laboratory Overview

The purpose of this guidance manual is to provide labs instructions on submitting data directly to DEQ for the Lead Reduction in Schools Drinking Water Rule (LIS). The overall dataflow for LIS is as follows:



Many labs already submit electronic data deliverables (EDDs) to DEQ in one of our EQUS EDD formats (MT-eWQX and MT-WMRD). The LIS dataflow is unique in that a new EDD format will be required, EQEDD. In the future, DEQ will be requiring labs to submit data directly into the Montana EQUS database using a web application called EQUS Enterprise. For the time being, that workflow is not ready to be implemented and the information about Enterprise has been removed from v1 of this document.

If labs have questions specific to the EDD and the EDD submittal process, please contact DEQ's Sample Data Management Coordinator, Jolene McQuillan, at jmcquillan@mt.gov. If labs have questions that are specific to a LIS sample submittal or COC, please contact the DEQ Lead in School Team at deqleadinschools@mt.gov.

2.0 LIS EDD Format

The LIS program is using the EQiS EQEDD Format. There are multiple worksheets within this EDD, but labs are only responsible for populating and submitting the LabSample_v1 and TestResults_v1 worksheets. A blank LIS EQEDD (EQEDD with just the two required worksheets included) and an example LIS EQEDD are available for download from DEQ’s Lead in School website:

<https://deq.mt.gov/water/Programs/dw>

(Lead in Schools → Guidance and Forms → Laboratory Guidance)

The following tables include descriptions of the fields in the two required EDD worksheets. Some of the fields are required by the EDD format and some additional fields are requested by DEQ. The final EDD should be in an Excel format ready for upload to EQiS Enterprise.

| Table 2-1: LabSample_v1 Fields | | | | |
|--------------------------------|------------|------------------|------------------|------------------------------|
| Column Name | Data Type | Required by EDD? | Required by DEQ? | Description |
| sys_sample_code | Text(40) | Yes | Yes | From Sample ID on COC |
| sample_name | Text(50) | | | |
| sample_matrix_code | Text(10) | Yes | Yes | Lookup value = DW |
| sample_type_code | Text(20) | Yes | Yes | Lookup value = N |
| sample_source | Text(10) | Yes | Yes | Lookup value = Field |
| parent_sample_code | Text(40) | | | |
| sample_delivery_group | Text(20) | | | |
| sample_date | DateTime | Yes | Yes | From Sample Date/Time on COC |
| sys_loc_code | Text(20) | | | |
| start_depth | Numeric | | | |
| end_depth | Numeric | | | |
| depth_unit | Text(15) | | | |
| chain_of_custody | Text(40) | | | |
| sent_to_lab_date | DateTime | | | |
| sample_receipt_date | DateTime | | | |
| sampler | Text(50) | | | |
| sampling_company_code | Text(40) | Yes | Yes | Lookup value = School |
| sampling_reason | Text(30) | | | |
| sampling_method | Text(40) | | | |
| task_code | Text(40) | | | |
| collection_quarter | Text(6) | | | |
| composite_yn | Text(1) | Yes | Yes | Lookup value = N |
| composite_desc | Text(255) | | | |
| sample_class | Text(10) | | | |
| custom_field_1 | Text(255) | | | |
| custom_field_2 | Text(255) | | | |
| custom_field_3 | Text(255) | | | |
| comment | Text(2000) | | | |

| Table 2-2 TestResults_v1 Description | | | | |
|--------------------------------------|------------|------------------|------------------|---|
| Column Name | Data Type | Required by EDD? | Required by DEQ? | Description |
| sys_sample_code | Text(40) | Yes | Yes | From Sample ID on COC |
| lab_anl_method_name | Text(20) | Yes | Yes | Lookup value for lead in DW: 200.8, 200.9, 3113-B, D3559(D) |
| analysis_date | DateTime | Yes | Yes | Date and time of lab analysis |
| total_or_dissolved | Text(10) | Yes | Yes | Lookup value = Total or Dissolved |
| column_number | Text(2) | | Yes | Lookup value = NA |
| test_type | Text(10) | Yes | Yes | Lookup value = INITIAL |
| lab_matrix_code | Text(10) | Yes | Yes | Lookup value = DW |
| analysis_location | Text(2) | Yes | Yes | Lookup value = LB |
| basis | Text(10) | Yes | Yes | Lookup value = NA |
| container_id | Text(30) | | | |
| dilution_factor | Numeric | Yes | Yes | Defaults to '1.0'. Can leave null unless you want to specify different value. |
| prep_method | Text(20) | | | |
| prep_date | DateTime | | | |
| leachate_method | Text(15) | | | |
| leachate_date | DateTime | | | |
| lab_name_code | Text(40) | Yes | Yes | Lookup value for lab name (see Appendix A or available in EDP) |
| qc_level | Text(10) | Yes | Yes | Lookup value = QUANT |
| lab_sample_id | Text(40) | Yes | Yes | Lab's unique Sample ID |
| percent_moisture | Text(5) | | | |
| subsample_amount | Text(14) | | | |
| subsample_amount_unit | Text(15) | | | |
| analyst_name | Text(50) | | | |
| instrument_id | Text(60) | | | |
| comment | Text(2000) | | | |
| preservative | Text(20) | | | |
| final_volume | Numeric | | | |
| final_volume_unit | Text(15) | | | |
| cas_rn | Text(15) | Yes | Yes | Lookup value = 7439-92-1 |
| chemical_name | Text(255) | Yes | Yes | Lookup value = Lead |
| result_value | Numeric | Conditional | Conditional | Result_value is required when detect_flag = 'Y'. Leave null for non-detects. |
| result_error_delta | Text(20) | | | |
| result_type_code | Text(10) | Yes | Yes | Lookup value = TRG |
| reportable_result | Text(10) | Yes | Yes | Lookup value = Yes |
| detect_flag | Text(2) | Yes | Yes | Use 'Y' for detected analytes or 'N' for non-detects. Use 'Y' for estimated values between the LRL and MDL. |

| Table 2-2 TestResults_v1 Description | | | | |
|--------------------------------------|------------|------------------|------------------|---|
| Column Name | Data Type | Required by EDD? | Required by DEQ? | Description |
| lab_qualifiers | Text(20) | | | Populate with valid qualifiers assigned by lab |
| validator_qualifiers | Text(20) | | | |
| interpreted_qualifiers | Text(20) | | | |
| organic_yn | Text(1) | | | |
| method_detection_limit | Text(20) | | Yes | Lab's Method Detection Limit |
| reporting_detection_limit | Numeric | Conditional | Yes | Lab's Lower Reporting Limit |
| quantitation_limit | Text(20) | | | |
| result_unit | Text(15) | | Conditional | Lookup value for unit if result_value is populated. |
| detection_limit_unit | Text(15) | Conditional | Yes | Lookup value for detection limit unit |
| tic_retention_time | Text(8) | | | |
| result_comment | Text(2000) | | | |
| custom_field_2 | Text(255) | | | |
| custom_field_3 | Text(255) | | | |
| custom_field_4 | Text(255) | | | |
| lab_sdg | Text(20) | | | |
| validated_yn | Text(1) | | | |
| stat_type | Text(20) | | | |
| value_type | Text(10) | | | |
| uncertainty | Text(10) | | | |
| minimum_detectable_conc | Text(19) | | | |
| critical_value | Text(19) | | | |
| counting_error | Text(19) | | | |

3.0 EQUIS Data Processor

The EQUIS Data Processor (EDP) is a standalone application that must be used by data providers to check their EDD files prior to submission to the Montana EQUIS database. The EDP performs a series of formatting checks on the EDD and then identifies any records that have errors. The EDP checks data for the following:

- Required Fields
- Field Length
- Data Types
- Valid Reference Values
- Duplicate Rows
- Range Checking
- Record Parent-Child Relationships

If errors are detected, the application allows the data provider to correct the errors directly in EDP. After all errors have been corrected, the EDP must be re-run to ensure that no errors remain. EDD files that pass through the EDP error-free should also result in an error-free import into the Montana EQUIS database. The EDP does not compare the data in the EDD to the data in the database, so it is possible to receive an error when submitting to Montana EQUIS if the data in your EDD conflicts with data in the database.

Information on downloading, installing, and using the EDP application can be found within the EDP Guidance Manual available from the Montana DEQ EDP and EQEDD download webpage:

<https://earthsoft.com/products/edp/edp-format-for-mtdeq-eqedd/>.

4.0 Submitting Data

When an EDD has been ran through EDP and is error-free, it can be submitted to DEQ. The current process to submit Lead in School data is email the LIS EDD and hardcopy lab report to deqleadinschools@mt.gov. The Lead in School Team will review the EDD and load it into the Montana EQiS database. If there are any questions or errors, someone will be in contact with the lab. The hardcopy lab report should also be emailed to the school. The invoice should be emailed to either deqleadinschools@mt.gov or the school, depending on who the COC indicates is paying for the samples.

Appendix A: Lab Name Valid Values

The table below contains valid values for the lab_name_code field in the TestResults_v1 EDD worksheet. If your lab is not listed, please email DEQ's Sample Data Management Coordinator, Jolene McQuillan, at jmcquillan@mt.gov.

| Lab Name Code | Lab Name |
|----------------|--|
| ALPINE | Alpine Analytical |
| ANATEK | Anatek Labs |
| BRIDGER | Bridger Analytical Labs |
| ENERGY | Energy Laboratories |
| ENERGY-BIL | Energy Laboratories - Billings Lab |
| ENERGY-HLN | Energy Laboratories - Helena Lab |
| EUROFINS-EATON | Eurofins Eaton Analytical, Inc. |
| IML-LAB | Intermountain Laboratories |
| MELAB | Montana Environmental Laboratory |
| STATELAB | Dept of Public Health and Human Services Environmental Lab |