
Florida DEP ADaPT User Manual

Developed by:

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1.0

Introduction

1.1 INTRODUCTION

This document is provided as a user's manual for implementing the Automated Data Processing Tool (ADaPT) for the State of Florida, Department of Environmental Protection (DEP). ADaPT is a computer application that processes two types of electronic data deliverables (EDDs) based on field elements defined by the Florida DEP. These include the Laboratory Data Deliverable and the Laboratory Receipt Deliverable. ADaPT performs an error check for correctness, and completeness on both the Laboratory Data Deliverable and Laboratory Receipt Deliverable. ADaPT also performs a data review on the Laboratory Data Deliverable that measures integrity of sample results against associated laboratory quality control, holding times, and method detection limits.

Electronic Data Deliverables

Appendix A lists the Florida ADaPT file specifications for each type of EDD. The Laboratory Data Deliverable contains sample result information that also includes quality control batch links and accuracy and precision results for surrogates, laboratory control samples, and matrix spike parameters. The Laboratory Receipt Deliverable contains sample information contained in the chain-of-custody. Both types of EDDs are constructed as a comma-delimited text files or Microsoft Excel .csv files and imported into the application for processing.

The Project Library

ADaPT uses a project specific library as the reference for EDD error checking and data review. The project library contains all analytes and their data review criteria such as reporting limits, blank contamination rules, holding times, and accuracy and precision criteria for each method and sample matrix within the scope of a particular project. A project library is created for each different project. In this way, ADaPT has the flexibility to assess EDDs according to a particular project's requirements. ADaPT includes a Master Library containing a comprehensive list of nearly all possible methods and target analytes based on the State of Florida DEP standard values for method and analyte names. The Master library serves as a template for creating project libraries. ADaPT includes a utility for creating project libraries to minimize typing.

EDD Error and Technical Consistency Check

The ADaPT EDD error check module examines the both the Florida ADaPT Deliverable and Laboratory Receipt Deliverable for correct standard values, missing information in required fields, date/time format, logical date/time values, and duplicate records. The Florida ADaPT Deliverable is also checked for target analyte completeness, consistent Lab Qualifiers according to the DEP laboratory qualification scheme, and correct reporting limits. The error checker also examines this EDD to make sure various laboratory QC samples are included depending on the analytical method reported. After checking the EDD for errors ADaPT creates an error log that can be viewed on screen or as a report. Each error is described in detail and if applicable the record number where the error occurs is identified. ADaPT also includes a technical consistency utility that performs the following cross and reversal checks: nutrients, total vs. dissolved, charge balance calculation, major ions vs. conductivity, TDS vs. conductivity, and

analyzed TDS vs. calculated TDS. Technical consistency results can be viewed on screen or as reports. On screen view and reports can be filtered to show all results, anomalies only, or only cases where calculations could not be performed because of missing constituents. Both EDD error checking and technical consistency checks are processes to be performed by the laboratory generating the data. ADaPT can and should be used by the laboratory to check the two types of EDDs and correct them as necessary before delivery to the client.

Automated Data Review

Automated Data Review evaluates the Florida ADaPT Laboratory Data Deliverable and applies data review qualifiers to sample results based on laboratory quality control results reported in EDD and project specific data review criteria specified in a project library. Sample result records in the EDD are updated with applicable data review qualifiers and reason codes, which provide a coded explanation for any data review qualification. Appendix F summarizes the ADaPT data review logic. ADaPT provides a variety of post data review qualification and outlier reports summarizing the results of the automated data review.

User Responsibilities

ADAPT was developed as a tool to aid data users in evaluating the quality of analytical chemistry results. The application was designed to perform routine data quality accuracy and precision checks traditionally performed through a manual data review. As inherent with all automated processes, the accuracy and integrity of information imported into the application is of vital importance. In working with analytical laboratories, the data user should design an overall Quality Assurance program to routinely verify the accuracy of electronically reported data versus traditional hardcopy data. The frequency of this check will depend on the capability and performance of the laboratory. This program does not include the evaluation of raw data and therefore full data validation (i.e., EPA Level 4) review must be performed manually.

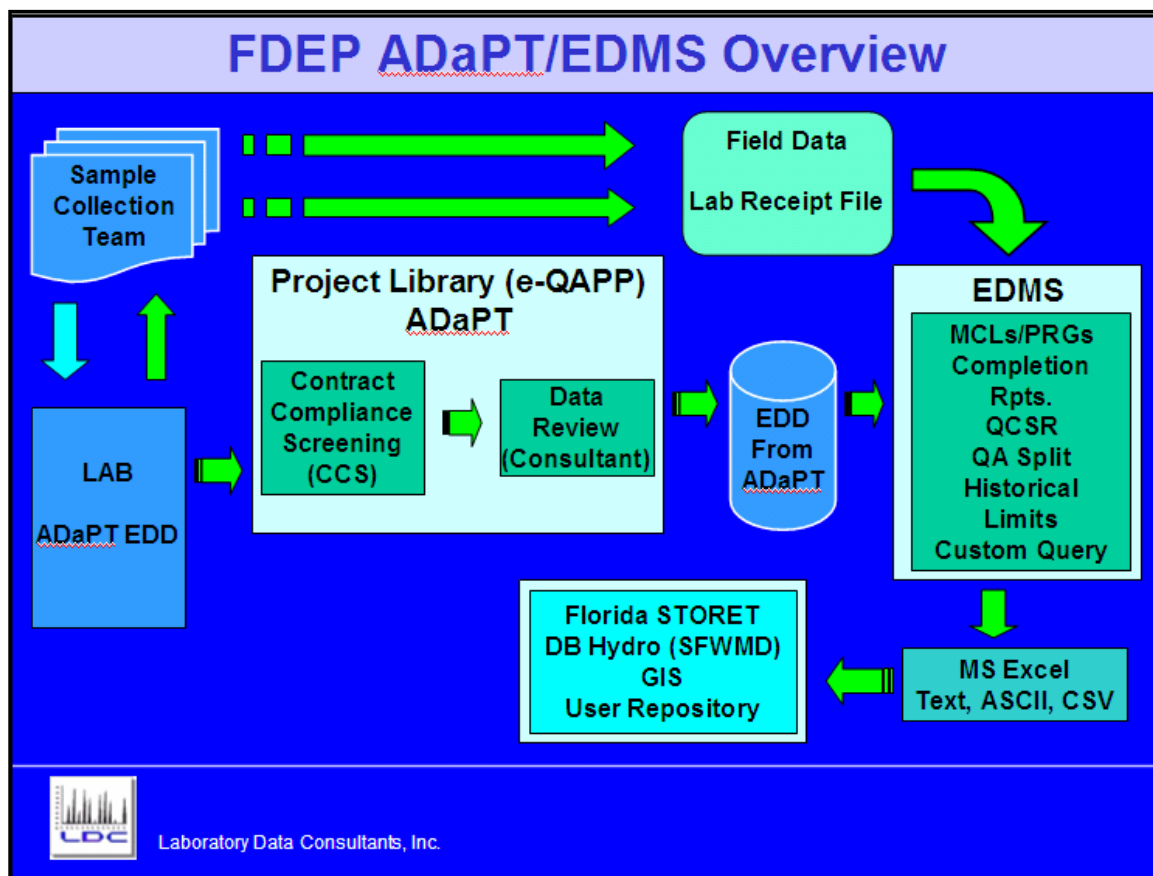
The ADAPT User Manual

The ADAPT User Manual contains several sections and appendices. The remaining pages in this section briefly introduce the different functional parts of ADAPT. Section 2 explains how to create and modify project libraries. Section 3 explains how to upload EDDs and run the EDD error check. Section 4 covers the automated review process. Section 5 explains how to upload Laboratory Receipt Deliverables and run the Lab Receipt Deliverables error check. Section 6 includes several database utilities and the on-line manual. The appendices provide information on EDD file specifications, standard value and required field restrictions for EDDs, and the validation criteria built into the Master Library.

1.2 ADAPT Flow Chart

Figure 1-1 is a flow chart illustrating how ADAPT and EDMS fit into the data review process.

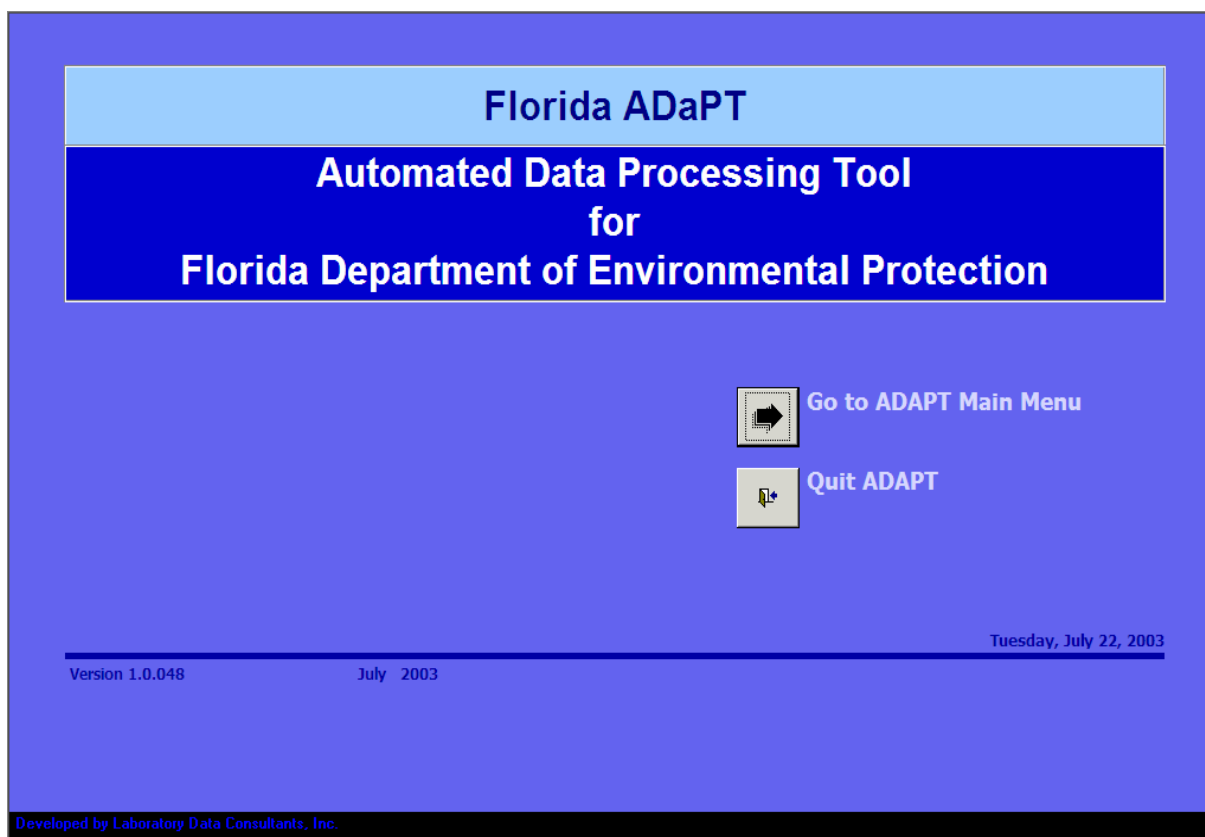
Figure 1-1
ADAPT Flow Chart



1.3 MAIN MENUS

The following is a snapshot of the opening screen of the application.

**Figure 1-2
ADAPT Opening Screen**



Click on the **Go to ADAPT Main Menu** button to enter the Main Menu screens. The Main Menu screens provide access to five functional modules. The following pages in this section briefly introduce you to each module. Subsequent sections in this manual provide detailed discussion. The five modules include the following.

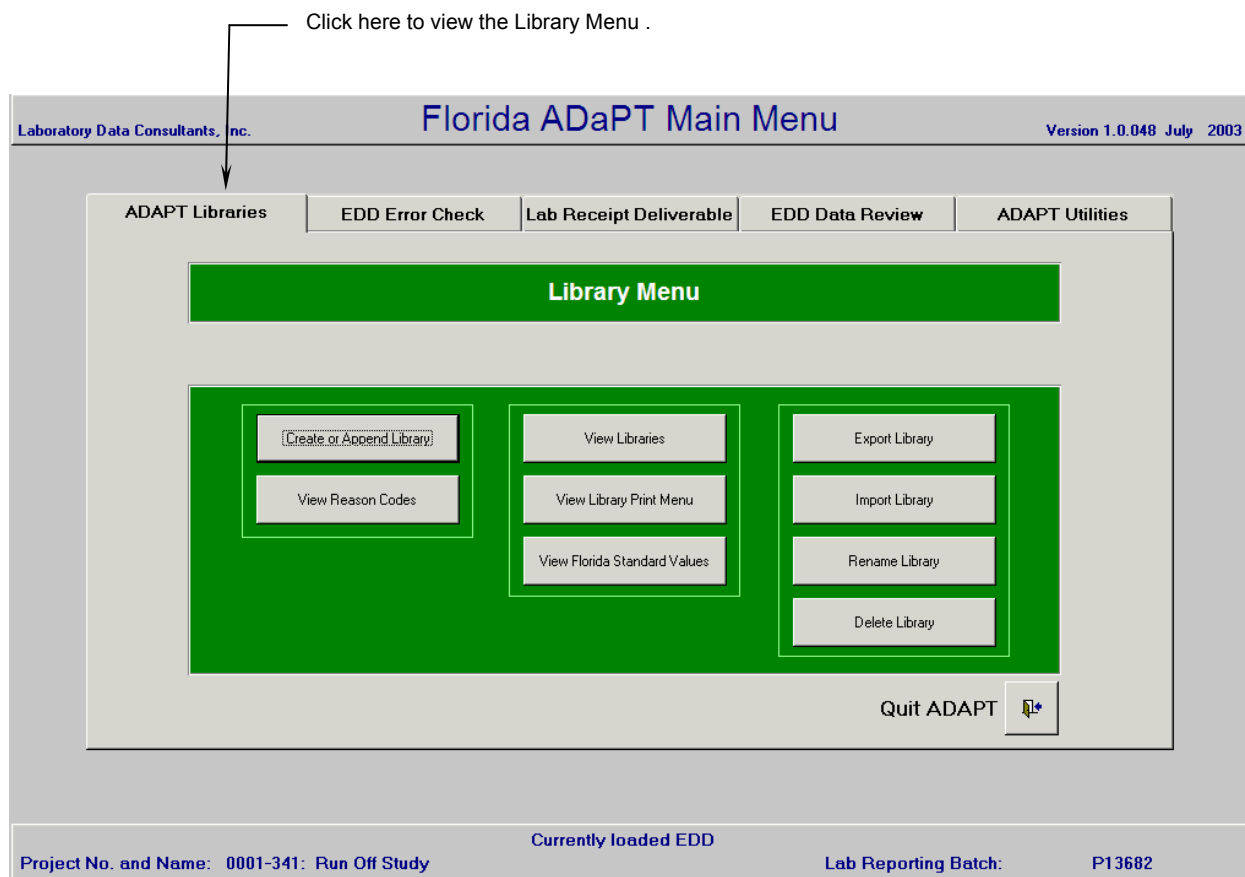
- **ADAPT Libraries Menu**
- **EDD Error Check Menu**
- **Lab Receipt Deliverable Menu**
- **EDD Data Review Menu**
- **ADAPT Utilities Menu**

1.3.1 Adapt Libraries Main Menu

The ADAPT libraries main menu gives you access to the following functions:

- **Create new project specific libraries**
- **View and modify the information in project libraries**
- **Import/Export libraries**
- **Delete libraries**
- **Rename libraries**
- **Print project library criteria such as QC limits, target compound lists, reporting limits, etc.**
- **View Standard Values in the database**

Figure 1-3
ADAPT Libraries Main Menu



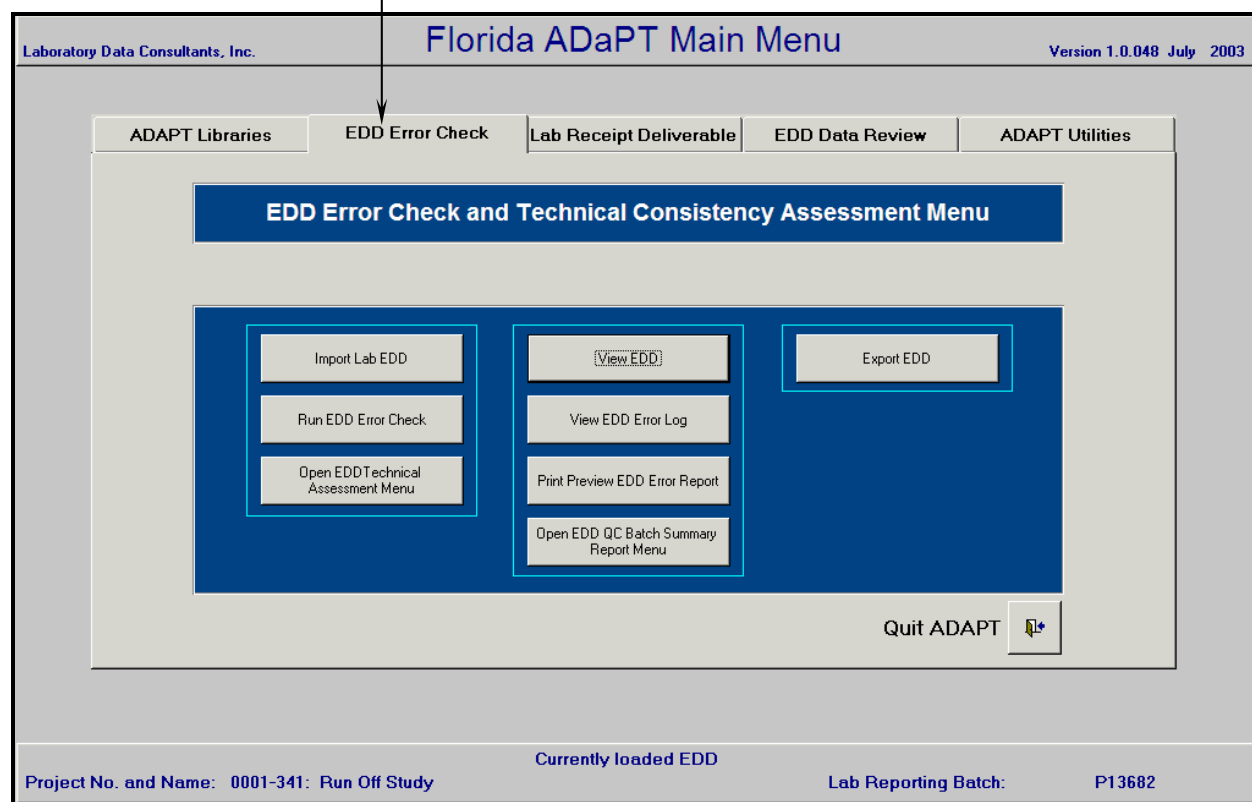
1.3.2 Edd Error Check Main Menu

The EDD Error Check menu gives you access to the following functions:

- **Import EDD files**
- **Run EDD Error Check**
- **Run EDD Technical Assessment Checks**
- **View and print the EDD Error Log**
- **View and correct errors in the EDD tables**
- **Save error corrections and export “clean” EDD files**

Figure 1-4
EDD Error Check Main Menu

Click here to view the **EDD Error Check** Menu.



The project number and project name for the currently uploaded EDD file are displayed here

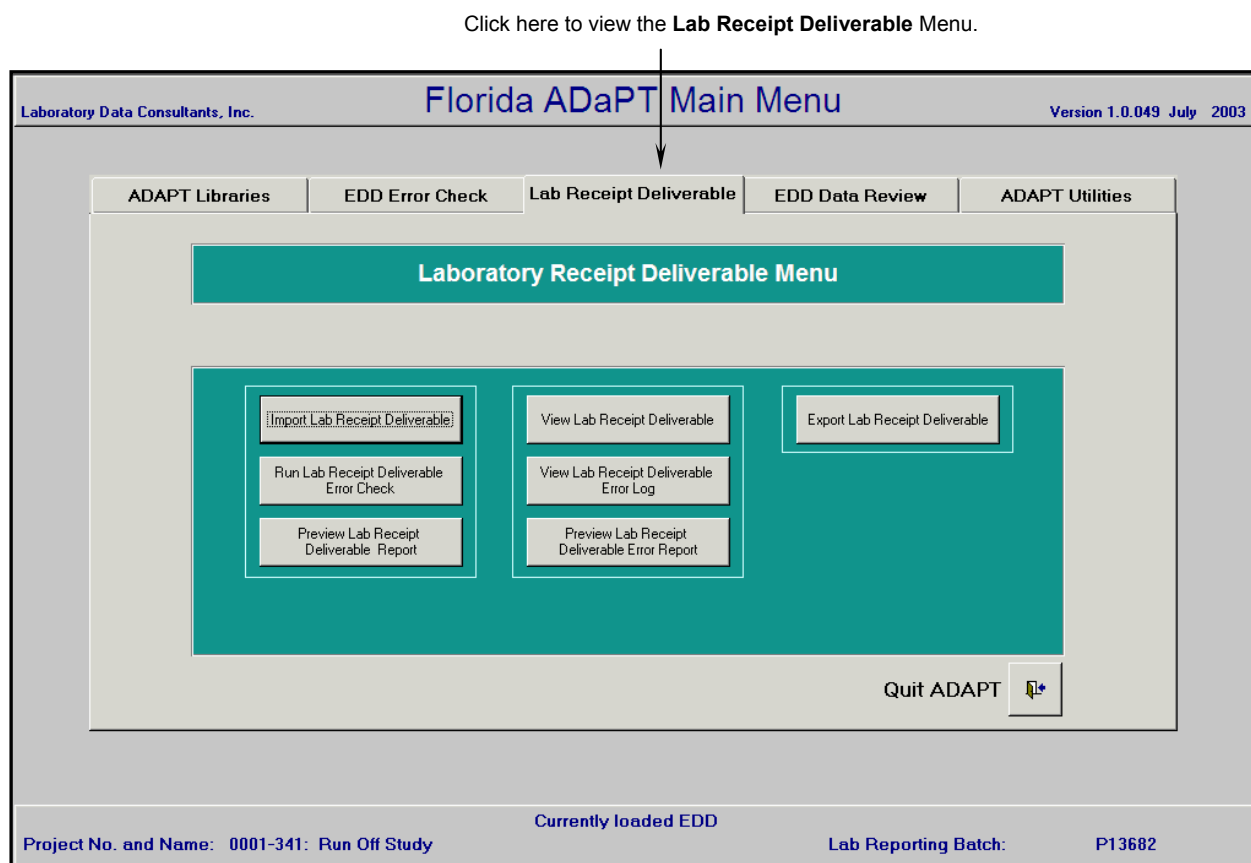
The Lab Reporting Batch for the currently uploaded EDD file is displayed here.

1.3.3 Lab Receipt Deliverable Main Menu

The Lab Receipt Deliverable Main Menu gives you access to the following functions:

- **Import Lab Receipt Deliverable Files**
- **Run Lab Receipt Deliverable Error Check**
- **View and print the Lab Receipt Deliverable Error Log**
- **View and correct errors in the Lab Receipt Deliverable tables**
- **Save error corrections and export “clean” Lab Receipt Deliverable files**

Figure 1-5
Lab Receipt Deliverable Main Menu

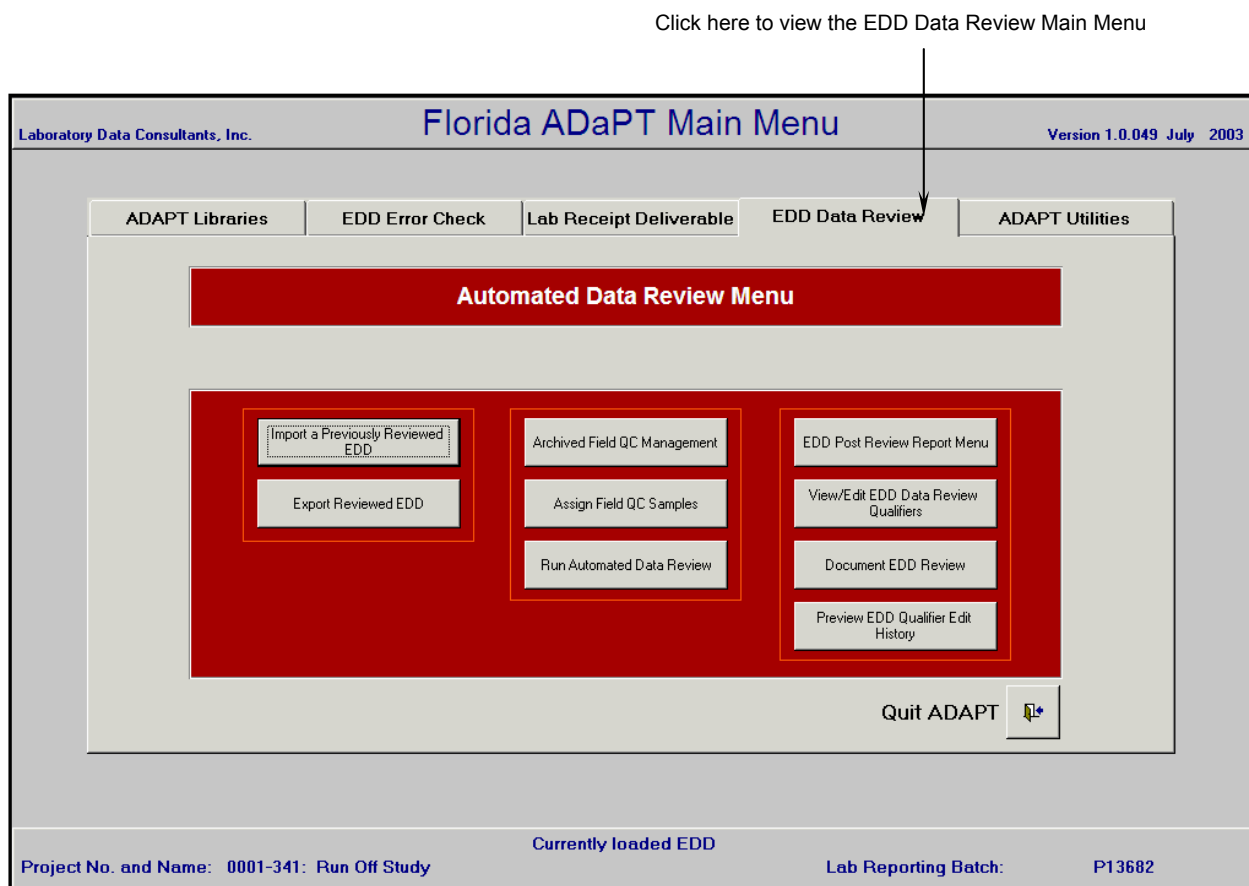


1.3.4 Automated Data Review Process Main Menu

The Data Review menu gives you access to the following functions:

- Select Field QC samples and assign Field QC/Sample associations
- Run the data review process
- View data review results
- Document EDD review and changes to data review qualifiers
- View EDD edit history
- Import/Export reviewed EDDs

Figure 1-6
EDD Data Review Main Menu

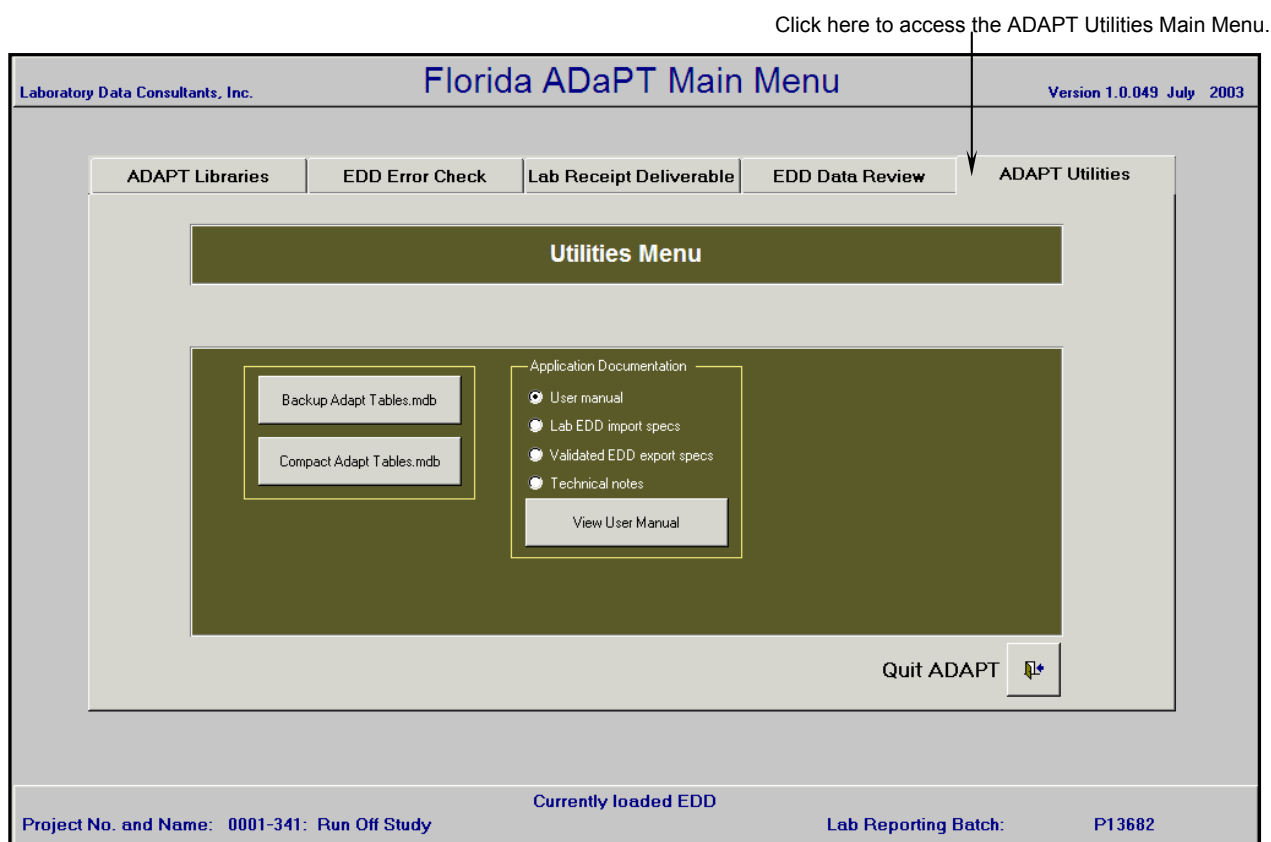


1.3.5 Utilities Main Menu

The utilities menu gives you access to the following functions:

- **View and Print the ADAPT User Manual**
- **Backup the ADAPTtable.mdb file**
- **Compact the ADAPTtable.mdb file**

Figure 1-7
ADAPT Utilities Main Menu



Appendix A

Florida ADaPT Laboratory Deliverable Specifications

Data Element Name	Data Type	Description	Required	SVL	Error Check
Client_Sample_ID	Text(35)	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. For Lab QC samples such as blanks and LCS enter the LabSampleID in this field	Yes	No	- Not null - Length ≤ 35 - Correct naming convention for Lab Duplicates, MS, and MSD samples
Lab_Analysis_Ref_Method_ID	Text(80)	The laboratory reference method ID. Standard values for methods are specified by Florida DEP and SFWMD.	Yes	Yes	- Not null - Length ≤ 80 - SVL check against project library
Lab_Sample_ID	Text(50)	Laboratory tracking number for field samples and laboratory generated QC samples	Yes	No	- Not null - Length ≤ 50
LabID	Text(7)	Identification of the laboratory performing the analysis. Use DOH certification number if possible	Yes	Yes	- Not null - Length ≤ 7 - SVL check against ADaPT standard value list
Client_Analyte_ID	Text(30)	Unique identifier for an analyte name. This is typically the CAS number, NELAC number, or Florida specified ID number	Yes	Yes	- Not null - Length ≤ 30 - SVL check against ClientAnalyteIDs entered in the project library - Completeness (in the project target analyte list for the method and matrix or reported as a spike or surrogate for the method and matrix as applicable)
Analyte_Name	Text(60)	The chemical name for the analyte. Values for Analyte Names are specified by Florida DEP and SFWMD.	Yes	Yes	- Not null - Length ≤ 60 - SVL check against Analyte Names entered in the project library for a method and matrix - Spikes reported in EDD for LCS and MS/MSD match project library for method and matrix - For organics, correct surrogates are reported according to the method requirements as established in the project library
Result	Number(10)	Reported result for the analyte	Yes	No	- Not null - Length ≤ 10 - Numeric except for microbiologicals, which may be text; and REDOX, which may be negative - Result = MDL if Lab_Qualifiers contains "U"

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Data Element Name	Data Type	Description	Required	SVL	Error Check
Error	Text	The two sigma error for radiochemistry results. Do not enter the "+" or "-" character in this field	Conditional	No	- Not null for radiochemistry result, spike, and tracer or carrier records - Numeric - Length ≤ 10
Result_Units	Text(10)	Units for the result	Yes	Yes	- Not null - Length ≤ 10 - SVL check against the units entered in project library for the method, matrix, and analyte
Lab_Qualifiers	Text(7)	A string of single letter result qualifiers assigned by the laboratory. Always use the "U" qualifier for non-detects. Other qualifiers may apply. Order is insignificant.	Conditional	Yes	- Not null according to conditions listed at the end of this table - Length ≤ 7 - SVL check against ADaPT standard values for lab qualifiers - Consistency check (see list at end of this table)
Detection_Limit	Number(10)	Method detection limit for the measure analyte	Yes	No	- Not null for target analytes - Length ≤ 10 - Numeric - Less than or equal to the Reporting Limit - Not zero or negative
Analyte_Type	Text(7)	Defines the type of result such as surrogate, spike, or target compound.	Yes	Yes	- Not null - Length ≤ 7 - SVL check against the ADaPT standard values for Analyte_Type
Dilution	Number(10)	Overall dilution of the sample aliquot. A value of one (1) corresponds to nominal method conditions. Insert value of one (1) for method blanks, LCS, and LCSD.	Yes	No	- Not null - Length ≤ 10 - Numeric
Percent_Moisture	Number(10)	Percent of sample composed of water. Enter value for soil and sediments sample only.	Conditional	No	- Not null if matrix = soil or sediment - Length ≤ 10 - Numeric
Percent_Recovery	Text(5)	Percent recovery value of a spiked or surrogate compound. If sample dilution yields no or very low recovery enter "DIL". If sample matrix interference yields no recovery, enter "INT". If the spike or surrogate was not added to the sample enter "NS"	Conditional	No	- Not null if AnalyteType = "SURR", "SPK", or "TRACER" - Length ≤ 5 - Numeric or "DIL", "INT", or "NS"
Relative_Percent_Difference	Number(5)	Relative percent difference between two QC results	Conditional	No	- Not null if AnalyteType = "SPK" <u>and</u> QCType = "LCSD" or "MSD"; or Not null if QCType = "DUP" - Length ≤ 5 - Numeric

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Florida ADaPT Laboratory Deliverable Specifications

Data Element Name	Data Type	Description	Required	SVL	Error Check
Reporting_Limit	Text(10)	Practical quantitation limit for the measured analyte. Also used as the reporting limit	Conditional	No	- Not null if AnalyteType = "TRG" or "SPK" - Length ≤ 10 - Numeric - Not zero or negative
Project_Number	Text(30)	Number assigned by the client to associate a sample to a project, purchase order, or requisition	Yes	Yes	- Length ≤ 30 - SVL check against ADaPT standard values for Project Number if entered
Project_Name	Text(90)	Project name assigned by the client	Yes	Yes	- Length ≤ 90 - Check against ADaPT standard values for Project Name if entered
End_Date_Collected	Date/Time	The date and time of sample collection. Format as: MM/DD/YYYY hh:mm where MM = two digit month, DD = two digit date, YYYY = four digit year, hh = two digit hour, and mm = two digit minutes	Conditional	No	- Not null if QCType = "N", "DUP", "MS", or "MSD" - Valid date/time value - Correctly formatted as MM/DD/YYYY hh:mm - Logical (does not supersede sample preparation and/or sample analysis date/time value)
Matrix_ID	Text(20)	The sample matrix for the reported analyte. The standard values for Matrix_ID are specified by the State of Florida	Yes	Yes	- Not null - Length ≤ 20 - SVL check against ADaPT standard values for MatrixID
QC_Type	Text(7)	Identifies the type of sample (i.e.: method blank, LCS, LCSD, laboratory duplicate, MS, MSD, or normal field sample. For normal field samples enter "N")	Yes	Yes	- Not null - Length ≤ 7 - SVL check against ADaPT standard values for QC_Type
Shipping_Batch_ID	Text(25)	Unique identifier assigned to a cooler or shipping container or, group of coolers or shipping containers that links samples together. The Shipping_Batch_ID is provided by the client on the chain of custody.	Conditional	No	- Required if QC_Type = N, DUP, MS, or MSD - Length ≤ 25
Temperature	Number(10)	Temperature in degrees C of the sample as received by the lab	No	No	- Numeric, if reported - Length ≤ 10 if reported
Preparation_Type	Text(25)	The method used to prepare the sample. For methods that do not have a preparation method as part of the analysis enter "No Prep"	Yes	Yes	- Not null - Length ≤ 25 - SVL check against ADaPT standard values for Preparation_Type
Analysis_Type	Text(10)	Indicates the type of analysis (i.e. dilutions, re-analyses or re-extracts). This field provides distinction among records when multiple analyses are submitted for the same sample and method. Enter RES for the initial analysis.	Yes	Yes	- Not null - Length ≤ 10 - SVL check against ADaPT standard values for Analysis_Type

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Florida ADaPT Laboratory Deliverable Specifications

Data Element Name	Data Type	Description	Required	SVL	Error Check
Reportable_Result	Text(3)	Indication of whether or not the laboratory chooses and individual analyte result as reportable. Enter "YES" if the result is reportable. Enter "NO" if the result not.	Conditional	Yes	- Not null if AnalyteType = "TRG" - Length ≤ 3 if reported - Value = "YES" or "NO" - Duplicate "YES" for a given ClientSampleID, Method, Matrix, ClientAnalyteID, and TotalOrDissolved value
Date_Prepared	Date/Time	The date and time of sample preparation or extraction. Format as: MM/DD/YYYY hh:mm where MM = two digit month, DD = two digit date, YYYY = four digit year, hh = two digit hour, and mm = two digit minutes	Yes	No	- Not null - Valid date/time value - Correctly formatted as MM/DD/YYYY hh:mm - Logical (Date_Prepared does not precede Date_Collected and supersede Date_Analyzed)
Date_Analyzed	Date/Time	The date and time of sample analysis. Format as: MM/DD/YYYY hh:mm where MM = two digit month, DD = two digit date, YYYY = four digit year, hh = two digit hour, and mm = two digit minutes	Yes	No	- Not null - Valid date/time value - Correctly formatted as MM/DD/YYYY hh:mm - Logical (Date_Analyzed does not precede Date_Collected and Date_Analyzed)
Total_Or_Dissolved	Text(3)	Indicates if the result is reported on a total or dissolved sample fraction. Report only for aqueous results	Yes	Yes	- Not null - Reported as "TOT" or "DIS" for water matrices and "N/A" for non-water matrices - Length ≤ 3
Prep_Batch_ID	Text(13)	Unique laboratory identifier for a batch of samples of similar matrix prepared together for analysis by one method and treated as a group for method blank, LCS, and LCSD association. The Prep_Batch-ID links method blanks and laboratory control samples (LCS/LCSD) to associated samples.	Yes	No	- Not null - Length ≤ 13 - Each distinct Prep_Batch_ID for a method and matrix has records for the same method and matrix where QCType = MB and LCS - Each distinct Prep_Batch_ID for a method and matrix for each MB and LCS contains one or more sample records with the same method, matrix, and Prep_Batch_ID.

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Florida ADaPT Laboratory Deliverable Specifications

Data Element Name	Data Type	Description	Required	SVL	Error Check
Method_Batch_ID	Text(13)	Unique laboratory identifier for a batch of samples of similar matrix analyzed by one method and treated as a group for laboratory duplicate, matrix spike, and matrix spike duplicate association. The Method_Batch_ID links laboratory duplicates, matrix spikes, and matrix spike duplicates to associated samples.	Yes	No	• Not null • Length ≤ 13 • For non-metal inorganic methods, each distinct Method_Batch_ID for a method and matrix has records reported where QCType = MS and DUP • For metals each distinct Method_Batch_ID for a method and matrix has records reported where QCType = MS and MSD or QCType = MS and DUP • For organic methods each distinct Method_Batch_ID for a method and matrix has records where QCType = MS and MSD • Each Method_Batch_ID for a method and matrix has sample records with the same method, matrix and Method_Batch_ID
Preservation_Intact	Text(3)	Indicates if the sample was preserved properly based on measurement at the time of sample receipt at the laboratory. This applies to each bottle collected	Yes	Yes	• Not null • Length ≤ 3 • Reported as “Yes” or “No” • Preservation_Intact = “No” if Lab_Qualifiers contains “Y”
QC_Spike_Added	Number(5)	Value of spike or surrogate compound entered as a numeric character	Conditional	No	• Length ≤ 5 if reported • Required for SFWMD
Result_Comments	Text(255)	Free-form text where data provider relates information they consider relevant to the sample that is not included in the above fields.	Conditional	No	• Not null for certain constraints • Length ≤ 255
Lab_Reporting_Batch_ID	Text(13)	Laboratory identifier for a group of samples and laboratory QC all reported within one EDD or batch. The Lab_Reporting_Batch_ID is equivalent to the sample delivery group, lab work number, login ID, etc.	Yes	No	• Not null • Length ≤ 13 • The same value is reported in all records within the EDD