

AQS Basics

Loading data

Help

Getting Your Data In

Online Updates

Batch Loads (Stage, Load, Post)



Help



Helpdesk User Support



EPA Helpdesk

- 866-411-4372 or epacallcenter@epa.gov
- Levels of support
 - Level 1: password resets for AQSProd; opens a problem ticket
 - Level 2: AQS-specific issues → Pamela and Donnie
 - Level 3: server issues → NCC
 - Level 4: software and data issues → AQS Team
- Exchange Network (EN) Helpdesk
 - 888-890-1995 or helpdesk@epa.cdx.net
 - Supports:
 - Node (production) password resets / general Node support

When in doubt, call the EPA Helpdesk



AQS Team

AQSTeam@epa.gov

- Robert Coats, team lead
- Bill Frietsche (QA & audits)
- Way Poteat
- Chris Chapman
- Nick Mangus (Data Mart)
- Michael Hamlin (user registration)
- Angie Shatas



AQS Regional Contacts

1: Wendy McDougall

(617) 918-8323

2: Henry Feingersh

(212) 637-3382

3: Pauline DeVose

(215) 814-2186

4: Darren Palmer

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7: James Regehr

(913) 551-5063

8: Joe Delwiche

(303) 312-6448

9: Fletcher Clover

(415) 972-3991

10: Jan Noel

(206) 553-1691

AQS Documentation

- Manuals and Guides

<http://www.epa.gov/ttn/airs/airsaqs/manuals/>

- Design Value Report (SO₂) *
- Submit Automation User Guide *
- Data Dictionary *
- Data Coding Manual
- AQS Input Transaction Formats ***
- Exceptional Event Tutorial
- Fundamentals & User Guide **
- Data Retrieval Manual **
- Codes and Descriptions *
- Memos and Software Release Notes *

<http://www.epa.gov/ttn/airs/airsaqs/memos/>



* New items

** Near term updates/overhaul

*** Longer term overhaul

From the Application

- “Help” From the Menu
 - Topics
 - Short-Cut Keys
 - Display Error
- Field-Level Help

Help

Help

<u>K</u> ey	Ctrl+F1
<u>D</u> isplay Error	Shift+F1
<u>A</u> bout	

Horizontal Method	012	GPS CARRIER PHASE STATIC RELATIVE POSITION
Horizontal Accuracy (Meters)	3.04	Source Map Scale (Non-GPS) 24000
Vertical Measure (Meters)	Description of the accuracy as a range of the latitude/longitude reported in meters. Only the least accurate measurement needs to be recorded whether is latitude or longitude.	
Vertical Method	000	UNKNOWN
Street Address	HEALTH DEPT, 300 E MAIN STREET	

Enter a valid Dominant Source code that identifies the primary source of the pollutant being monitored.

Record: 1/? ... List of Valu... <OSC>



Getting Your Data In: Online Updates of Data



What *can* you update online?

What *should* you?

- Data owned by your Screening Group
- Site/Monitor metadata
 - Monitor Begin and End dates
- Exceptional Event definitions
- Exceptional Event & other concurrences (RO only)
- Data -- update online if you can narrow it down
 - Raw Measurements/Precision & Accuracy Data
 - Comments



Where Do I Start?

The screenshot shows a window titled "Select Session Access (Information Management Group) Tribal Mode" with a sub-dialogue box titled "Select a Screening Group". The sub-dialogue contains a table with the following data:

Name	Type
QAOTEST	OTHER

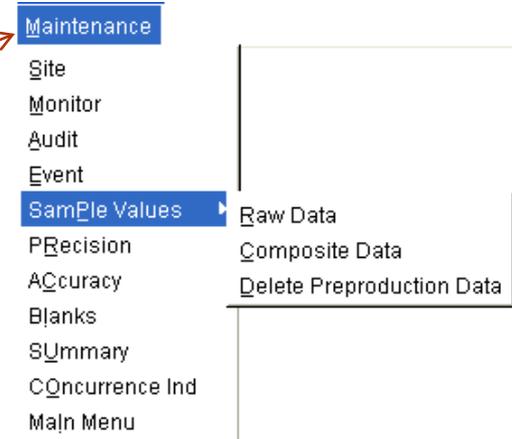
An orange callout box with the following text is overlaid on the screenshot:

Session access
You can only see data from monitors YOU OWN
You can change any data that YOU OWN

Below the table, there is an "OK" button and some text: "You have accessed AQSPROD. Raw data for 1993 to present" and "LOOK FOR ANSWERS TO 'Frequently Asked Questions' AT: <http://www.epa.gov/air/tail/stat/aqsprod/aqsprod.htm>. IF YOU NEED ASSISTANCE, PLEASE CALL THE EPA CALL CENTER AT 1-866-411-4EPA (1-866-411-4372) Hours: 6:00am- 6:30pm Eastern."

How to update data online?

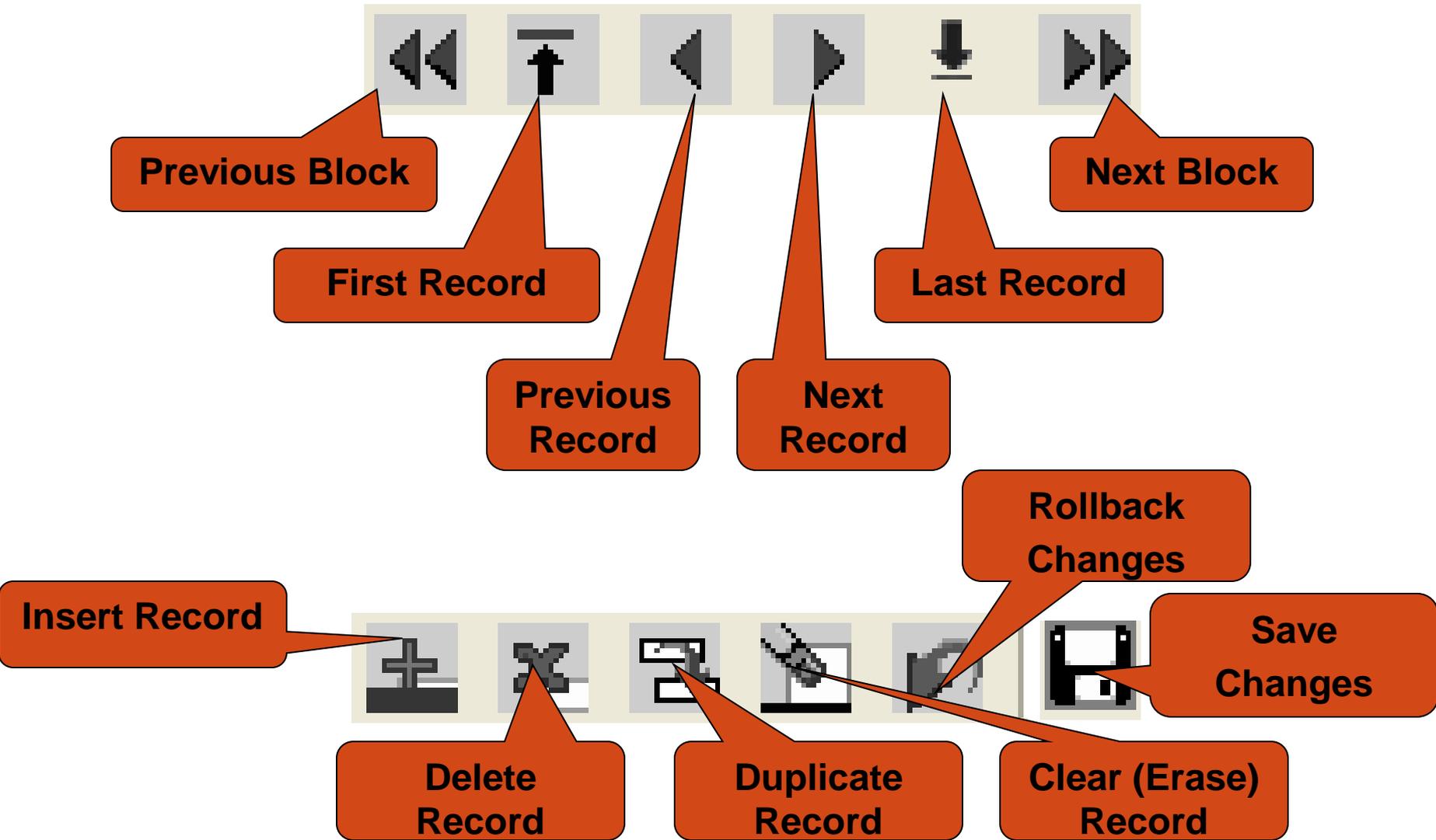
- You are in your Screening Group
- Go to Maintenance tab
- Select the type of data you want
 - Site OR Monitor OR Event OR Sample Values
- Build the query



Tribal Code State Code County Code Site ID Parameter Code POC

- specify “filters” (just like in Browse) to get only the records you want
- Execute the Query 
- Scroll through the records and modify as needed
 - For Site, Monitor, Event or P&A data, can modify directly
 - For Raw Data, must “insert” a new record with a “U” (then go through Stat/CR process)
- Save (Look for confirmation message) 

Form Navigation



Save & Rollback

- Rollback
 - Throws away all changes back to the last time you Saved.
 - Cannot “undo” a Rollback
- Save
 - Your changes do not take effect until you save
 - Look for the confirmation message at bottom left



Put it into practice – Exercise 2.1



Data Formats

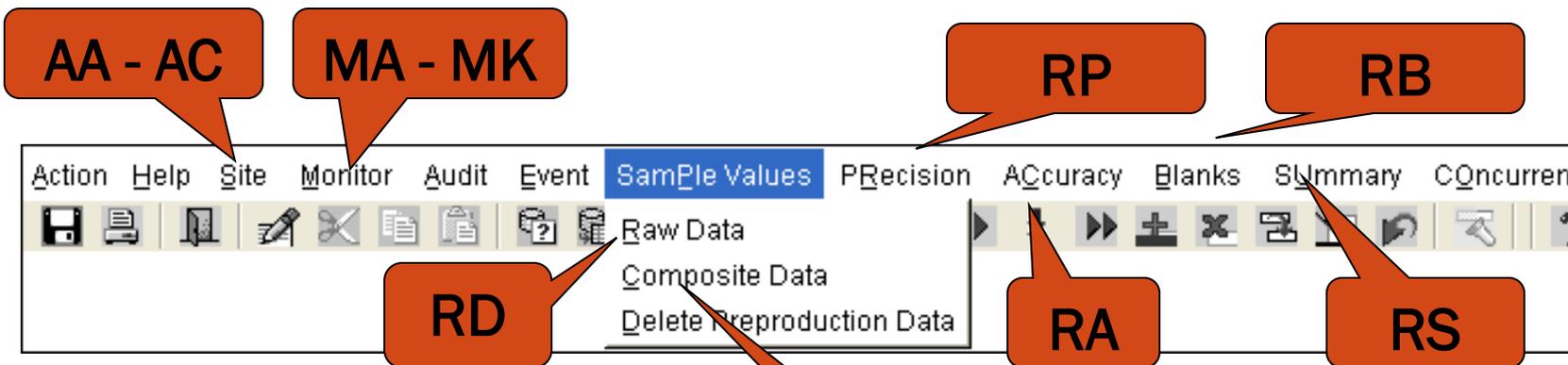


Data Formats Overview

- 2 types supported
 - “Pipe-delimited” format
 - “|”
 - 19 different formats; one for each type of data supported through the system
 - “Data Input Formats for the Re-engineered AQS”
 - <http://www.epa.gov/ttn/airs/airsaqs/manuals/>
 - XML
 - AQS XML Schema definition can be found at <http://www.exchangenetwork.net/exchanges/air/aqs.htm>



Map AQS Transaction Types to AQS screens



Site Information.....	
AA	Basic Site Information.....
AB	Site Street Information.....
AC	Site Open Path Information.....
Monitor Information.....	
MA	Basic Monitor Information.....
MB	Monitor Sampling Periods.....
MC	Monitor Type Information.....
MD	Monitor Agency Role.....
ME	Monitoring Objective Information.....
MF	Monitor Sampling Schedule.....
MG	Monitor Tangent Roads.....
MH	Monitor Obstruction Information.....
MI	Monitor Regulatory Compliance.....
MJ	Monitor Collocation Period.....
MK	Monitor Protocol.....
Reported Data Values.....	
RC	Composite Raw Data.....
RD	Hourly, Daily, and Sub Hourly Raw Data.....
RA	Accuracy Data.....
RP	Precision Data.....
RS	Annual Summary Data.....
RB	Blanks Data.....

RC



Transaction Types (Site)

Site Information.....

- AA Basic Site Information
- AB Site Street Information.....
- AC Site Open Path Information



Transaction Types (Monitor)

MB

MD

MF

MK = Monitor Protocols

MA

MC

ME

MA

MG

MH

MI

MJ

Maintain - Monitor (Information Management Group) Tribal Mode

Monitor Basic | Sample P... | Type... | Agenc... | Objec... | Pollu... | Req F... | Tange... | Probe... | Reg C... | Collo...

Tribal Code	State Code	County Code	Site Id	Parameter Code	POC	Status
	5		0002	44		P

Project Class: 03
 Meas Scale: REGIONAL SCALE
 Probe Location: TOP OF BUILDING
 Probe Vert Dist: 1
 Samp Res Time:
 Close Date:
 Dominant Source: AREA
 Open Path Num:
 Probe Height: 4
 Surrogate Ind:
 Last Samp Date: 20060630
 Probe Hor Dist: 1
 Unrest Air Flow: Y
 Last Post Date: 20060907

MA|I|23|001|0002|44201|1|03|AREA|REGIONAL SCALE||TOP OF BUILDING|4|1|1||Y||2|||||2399||||

Monitor Information.....
 MA Basic Monitor Information



Transaction Types (Raw Data)



RD Hourly, Daily, and Sub Hourly Raw Data

#	Field Name	Formatting Rule
1	Transaction Type ^R	RD = Raw Data Type
2	Action Indicator ^R	Must = I, U, or D
3	State Code / Tribal Indicator ^R	Must exist in STATES Reference Table or be 'TT' for Tribal Site
4	County Code / Tribal Code ^R	Must exist in COUNTIES or TRIBAL_AREAS Reference Table
5	Site ID ^R	Must exist in SITES table with the {State Code, County Code} or Tribal Code
6	Parameter ^R	Must exist in PARAMETERS Reference Table
7	POC ^R	Must exist in MONITOR table with Parameter
8	Duration Code ^{R(D)}	Must exist in SAMPLE_DURATIONS Reference Table
9	Reported Unit ^{R(D)}	Must exist in UNITS Reference Table
10	Method Code ^{R(D)}	Must exist in SAMPLING_METHODOLOGIES Reference Table
11	Sample Date ^R	YYYYMMDD format
12	Sample Time ^R	hh:mm format
13	Reported Sample Value ^{X(L,U)}	Number - 5.5 format
14	Null Data Code ^{X(L,U)}	Must exist in QUALIFIERS Reference Table, if valued
15	Collection Frequency Code	Must exist in COLLECTION_FREQUENCIES Reference Table
16	Monitor Protocol ID (MP ID)	Must exist in Monitor Protocols Table for the Monitor
17	Qualifier Code -1	Must exist in QUALIFIERS Reference Table, if valued
18	Qualifier Code -2	Must exist in QUALIFIERS Reference Table, if valued
19	Qualifier Code -3	Must exist in QUALIFIERS Reference Table, if valued
20	Qualifier Code -4	Must exist in QUALIFIERS Reference Table, if valued
21	Qualifier Code -5	Must exist in QUALIFIERS Reference Table, if valued
22	Qualifier Code -6	Must exist in QUALIFIERS Reference Table, if valued
23	Qualifier Code -7	Must exist in QUALIFIERS Reference Table, if valued
24	Qualifier Code -8	Must exist in QUALIFIERS Reference Table, if valued
25	Qualifier Code -9	Must exist in QUALIFIERS Reference Table, if valued
26	Qualifier Code -10	Must exist in QUALIFIERS Reference Table, if valued
27	Alternate Method Detectable Limit	Number - 5.5 format
28	Uncertainty Value	Number - 6.5 format

- Virtually all RD is submitted via batch
- Add qualifiers to explain data
- Comments are not supported on RD transaction
- Only way to enter a comment is online



Delimited Transaction Common Fields

- Transaction Type - always the 1st column
- Action Indicator - always the 2nd column
 - I = INSERT
 - U = UPDATE
 - D = DELETE
- State Code - always the 3rd column
- County Code - always the 4th column
- Site ID - always the 5th column

```
MA|I|23|001|0002|44201|1|03|AREA|REGIONAL SCALE||TOP OF BUILDING|4|1|1||Y||2|||||2399||||
```



Pipe-Delimited vs XML Example

- AQS Site ID: 01-001-9999
- Pollutant Measured: Ozone
- POC (assigned as part of the monitor ID): 1
- Does this value already exist in the system? No
- How long did it take to form sample (the duration): hour
- What kind of instrument was used? Dasibi 1008-AH
- When was the sample collected? June 10, 2006
- What time did sample begin (local standard time): 1:00 PM
- Sample Concentration: 0.050 parts per million
- Other qualifiers that you want to apply to data? No
- Would you like to specify an alternate Minimum Detection Limit for this sampler?
No
- Would you like to specify an uncertainty value with this sample? No



XML Format

- As you can see, XML looks like HTML, but with some changes:
 - The HTML standard defines a fixed set of “tags” that define the data content and formatting.
 - XML allows you to create your own tags, with the meanings that you define.
- XML Tradeoffs:
 - XML files are “self describing”
 - XML files are bigger (100 X bigger, but compressible.)
- ENSC will “wrap” your flat (text) file with an XML header



Getting Your Data In: Batch Updates of Data



What Do You Mean By Batch Updates?

- Mass entry of data, so faster
- Data in AQS format (from datalogger, Agency system, other)
- Send the file to AQS
- Processing of the data happens without your interaction
(Submit Automation project completed in June 2012)
- AQS notifies you via email on job completions
- AQS provides reports at the end of each process



Overall Process/Big Picture

- **Collect Samples**
- **Format the Data**
- Send data file to AQS Using the Exchange Network (EN)
- Load the data to AQS (includes error checking)
- Correct any errors & reprocess
- Metadata & non-raw data process is finished
- Raw data (sample measurements) must be approved
- Data is then available to the public

Happens Outside of AQS

**Raw Data
Only**

What Can Be Input by Batch?

Can batch load:

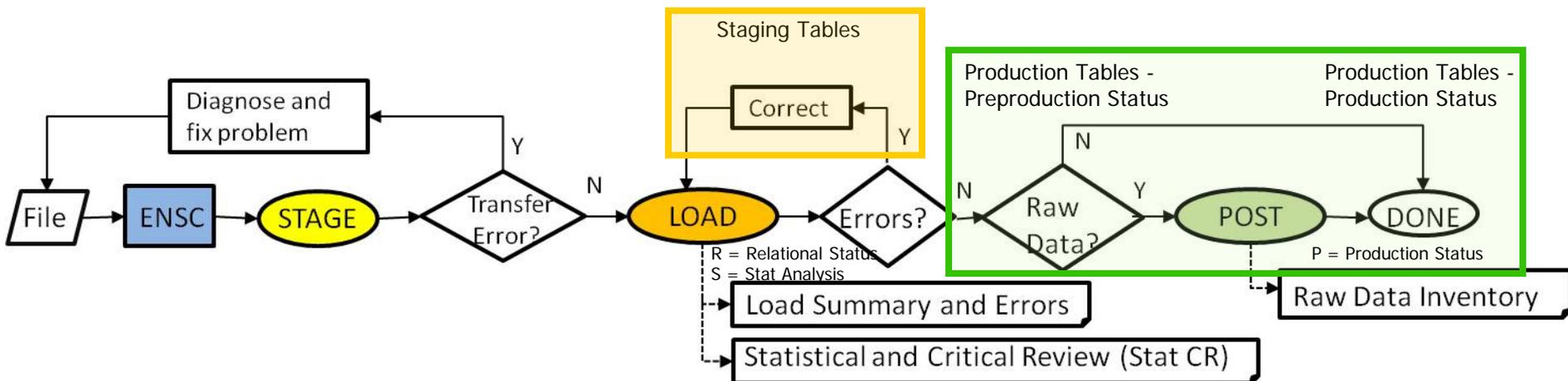
- Site information (all)
- Monitor information (all)
- Raw data
- Audit (precision & bias) data
- Blanks data

Cannot batch load:

- Comments (add'l info on sites, monitors, audits, raw data values)
- Exceptional event definitions
- EPA concurrences (Regional user only)
- Primary monitor period designations (PM2.5)



File Processing with Batch Flow



1. Create file of ambient air data (either non Raw or Raw data)
2. Transfer the file using the ENSC (STAGE step)
3. Automatically or manually process the file.
4. Either way, same processing steps in AQS:
 - Raw Data (LOAD step (also runs Stat/CR), POST step)
 - Non-raw Data (LOAD step)

Where Do I Start?

Register for the 2012 AQS Conference!! Visit the AQS web page at www.epa.gov/tn/airs/airsraqs/

You have accessed AQSPROD. Raw data for 1957 to present is now available for access. Raw data is available for update for 2007 to present.

IF YOU NEED ASSISTANCE, PLEASE CALL THE EPA CALL CENTER AT 1-866-411-4EPA (1-866-411-4372) Hours: 6:00am- 6:30pm Eastern.

Name	Type
REGION 10 SEATTLE	REGION
NATIONAL AIR DATA GROUP	ADMIN
CALIFORNIA 3	STATE
SCAQMD, CA PAMS	LOCAL
USER_SUPPORT	OTHER
NAVAJO NATION	TRIBE



Where To Go Next?

Action Help Session Admin Retrieval Maintenance Critical Rev Certification **Batch** Old Batch Correct Main Menu

BATCH (School Air Toxics Met)

Process by File History

HISTORY AND STATUS						LOAD			POST		
Submission Date	File Name	User Name	Records In File	Date (last)	Process Status	Recs Loaded	Recs Failing to Load	Stat/CR Finding Count	Records to Post	Skip'd Monitors	Records Posted

PROCESS CONTROL

Process selected file through:

Results and Reports:

Other

Next step is to transfer your file

FY: for a file in "focus" the Reports available

FYI: for a file in "focus" the Processes available



ENSC

Step 1: login

Environmental Exchange Network | Services Center - Windows Internet Explorer provided by EPA

https://enservicestest.epacdxnode.net/login.aspx

File Edit View Favorites Tools Help

SnagIt

Environmental Exchange Network | Services Center

Environmental Information | **exchange Network** | SERVICES CENTER | [Help](#) | [Contact Us](#)

SERVICES CENTER

The Exchange Network Services Center is a web-based tool designed to allow Exchange Network users to easily send, get, and download information from other partners on the network.

Note: to access this tool, you must already have an Exchange Network user account assigned to you.

[Request an Account](#)

Warning Notice

This application is part of a United States Environmental Protection Agency (EPA) computer system, which is for authorized use only. Unauthorized access or use of this computer system may subject violators to criminal, civil, and/or administrative action. All information on this computer system may be monitored, recorded, read, copied, and disclosed by and to authorized personnel for official purposes, including law enforcement. Access or use of this computer system by any person, whether authorized or unauthorized, constitutes consent to these terms.

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Internet 100%

EN user ID is not your AQS ID; it is the email address you supplied when you got your AQS account

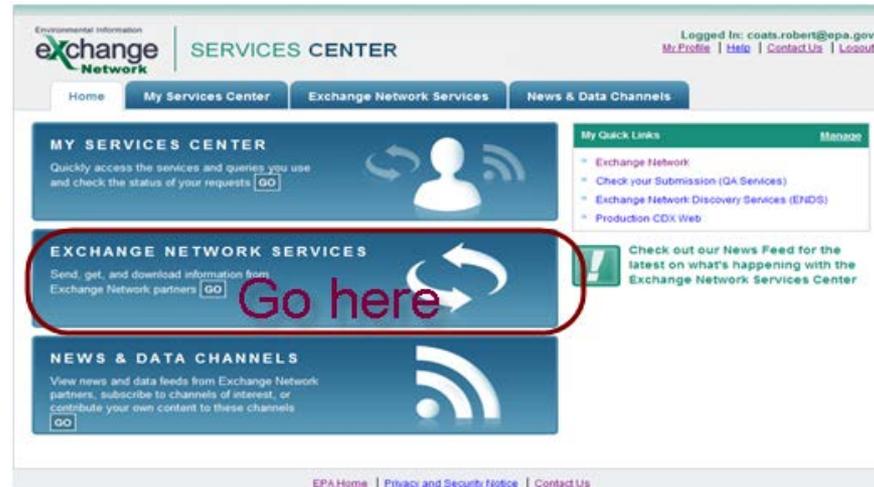
If your email address changes, call the EN Helpdesk.

Not your AQS pw (unless you made it that way)
Need a pw reset? Call the EN Helpdesk.

ENSC (One time setup)

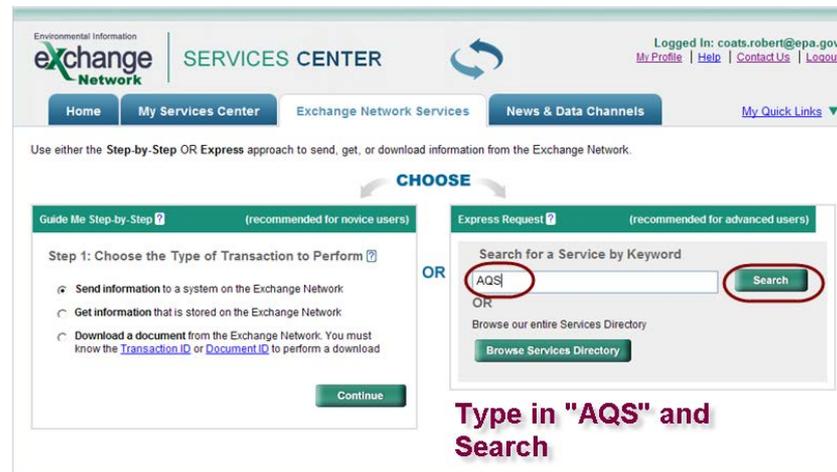
Step 2:

On your first login:



Step 3:

From the Express Register box, type in AQS and click on the Search button.



ENSC (One time setup)

Step 4:

Choose “Send Info” to establish AQS as the service that will receive the files.

Services Directory

This directory runs from Exchange Network Discovery Service (ENDS) metadata. It requires the commitment of our Network to keep it up to date and useful. For the BETA version, the Services Directory contains only services that support Submit, Query, Solicit, and Download operations. Select the name of the Service you wish to use.

Filter By: Keyword(s)

1 - 4 of 4 < Previous 1 Next >

Service Transaction	Dataflow	Service Name	Service Description	Node	Service Provider
Get Info	AQDE	AQDERawData	Queries or Solicits the Raw Data for the AQDE Flow. The return is an XML file that conforms to the AQS Version 2.0 Schema.	NewJerseyNodeV1_Prod	NJDEP
Send Info	AQS	AQS Submit	Air Quality System Document Submissions	NGNProd2.0	U.S. Environmental Protection Agency
Get Info	AQS	DNR.AQSSubmitRawData	DNR.AQSSubmitRawData	WDNRnode2	Wisconsin DNR
Get Info	FRS	DNR.AQSSubmitRawData	DNR.AQSSubmitRawData	WDNRnode2UAT	Wisconsin DNR

Step 5: Suggest (optional but recommended) that you go to the “My Services Tab” and check “Make this my Start page.” This will then be your starting point each time.

Environmental Information | **Exchange Network** | SERVICES CENTER | Logged In: coats.robert@epa.gov | My Profile | Help | Contact Us | Logout

Home | My Services Center | Exchange Network Services | News & Data Channels | My Quick Links

My Services | My EPA Activity | My Channels (Added to My Quick Links)

Make this my Start page

My Services Access services you have used before. Use a New Service

All | Send Info | Get Info | Download | My Queries

Find a Service: My Services Services Directory Find

Service Name	Service Description	Publisher	RSS: enabled	Last Used
NGNTest2.0/AQS/AQS Submit	AQS Submit: Send files to the Air Quality System (AQS).	U.S. Environmental Protection Agency	No	3/21/2012 2:59:25 PM



ENSC (Express Request)

Each time you submit a file, you will fill out an “Express Request: AQS Submit”

File to be submitted

Only supply if you want email notification to a 3rd party; emails automatically go to the address in your AQS profile

AQS ID

Screening group (“owner” of data”)

Final Processing Step - Default of “Post” automates the process by taking your file through to completion - and for both non-Raw and Raw Data, if you do not have any errors during the AQS processing, you are DONE.

Stop on Error – If “yes” then AQS stops the file processing if an error is encountered., AQS stops processing the file. (Applies only to the POST step; otherwise this setting is ignored)

Express Request: AQS Submit

Select a Document to Upload (max. size 1 GB): *

Enter Sender's Email Address to Notify of Transaction Status Changes:

AQS User ID: *

Additional Data Flow Specific Information:
Screening Group: *

File Type: * Flat/XML

Final Processing Step: Stage/Load/Post

Stop On Error: Yes/No

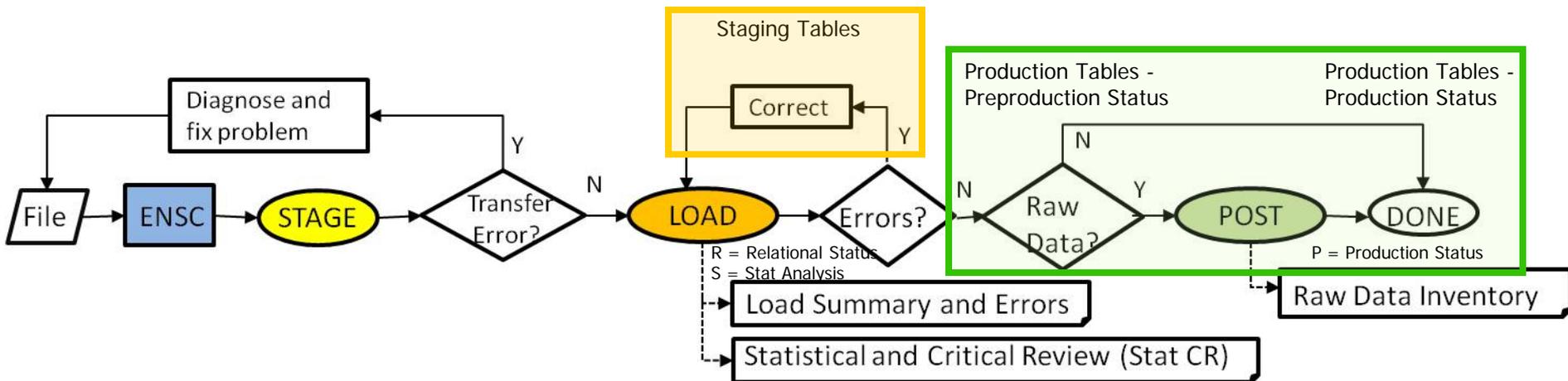
► [Provide information \(metadata\) about this Document \(recommended\)](#)

* **required**

Send Data – the last step



File Processing of Data



“Automatic” file processing :

- Minimizes time needed to handle a file; “Submit Automation” project
- Default selections on ENSC support automatic file handling
 - Final Processing Step = Post
 - Stop on Error = Yes

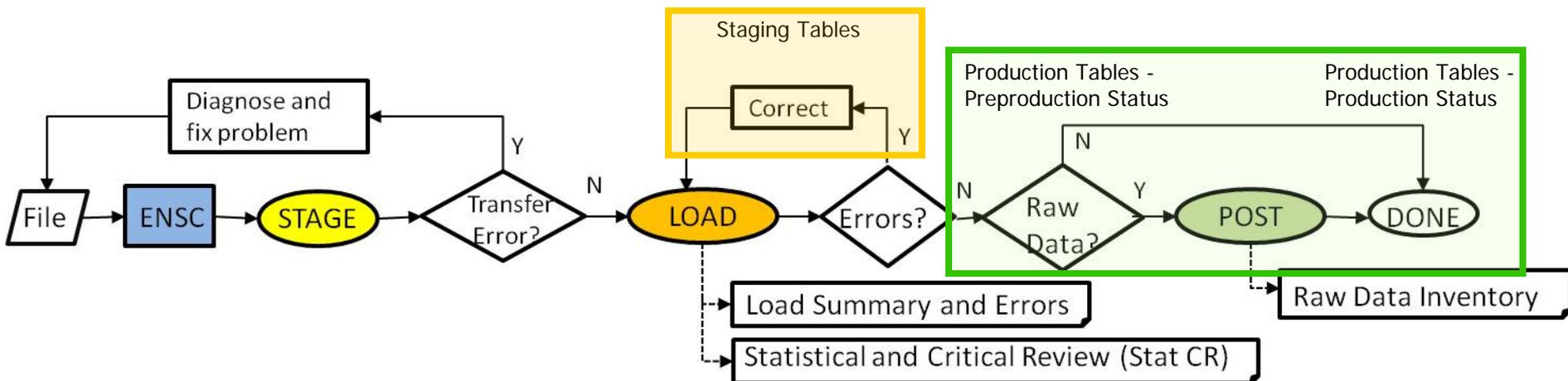
“Manual” file processing

- You must change the defaults on ENSC form
 - Final Processing Step = Stage or Load
 - Then kickoff each subsequent process (Load and/or Post) in AQS

Getting Your Data In: File Processing when all goes well non Raw data



File Processing of non-Raw Data



At ENSC, you specify "Final Processing Step" of	At ENSC, you specify "Stop on Error" of	Did your file have Errors? ¹	You will see this "Process Status" on the AQS Batch form	What does it mean?
File only contains non-Reported data (RP, RA, M*, or A* transactions but no RD)				
STAGE	No/Yes ²	No	STAGE-COMPLETED	File is ready for LOAD.
		Yes	STAGE-ERROR	File had errors in transfer. Fix errors in file on your end and resubmit.
LOAD	No/Yes ²	No	LOAD-COMPLETED	Done.
		Yes	LOAD-ERROR	Records w/errors in Correct (review reports to see reason). Other records are done.
POST ³	No/Yes	No		POST process only runs against Reported Data.
		Yes		



Batch form - Process by File

AQS

Action Help Session Admin Retrieval Maintenance Critical Rev Certification **Batch** Old Batch Correct Main Menu

Process by file tab: Only shows the last process performed on a file

BATCH (Final Control)

Process by File History

HISTORY AND STATUS						LOAD			POST		
Submission Date	File Name	User Name	Records In File	Date (last)	Process Status	Recs Loaded	Recs Failing to Load	Stat/CR Finding Count	Records to Post	Skip'd Monitors	Records Posted
20120725 09:15	RIIR TSAT RD DATA.zip	JAIME HAUSER	142	20120725 09:16	CRST-COMPLETED	142	0	13	142	0	
20120725 09:12	POMN TSAT RD DATA.zip	JAIME HAUSER	55	20120725 09:12	CRST-COMPLETED	55	0	4	55	0	
20120720 11:48	RIIR TSAT RD DATA.zip	JAIME HAUSER	387	20120720 11:50	CRST-COMPLETED	387	0	1	387	0	
20120720 10:14	RIIR TO-15 monitor transacti	JAIME HAUSER	520	20120720 10:19	LOAD-COMPLETED	513	0				
20120720 10:10	RIIR TO-11 monitor transacti	JAIME HAUSER	117	20120720 10:10	LOAD-COMPLETED	117	0				
20120525 09:08	TSAT RD DATA 20120525.zij	JAIME HAUSER	11	20120525 10:27	POST-COMPLETED	11	0	0	11	0	11

PROCESS CONTROL

Process selected file through:

Results and Reports:



Batch form - History

AQS

Action Help Session Admin Retrieval Maintenance Critical Rev Certification **Batch** Old Batch Correct Main Menu

BATCH (Tribal School Air Toxics)

Process by File History

History tab: Shows all processes performed on a file

PROCESS HISTORY

Session Date	Job Type	User Name	File Name	File Status	Successful Transactions	Failed Transactions
20120725 09:15:45	STAGE	JAIME HAUSER	RIIR TSAT RD DATA.zip	COMPLETED	142	0
20120725 09:12:23	CRST	JAIME HAUSER	POMN TSAT RD DATA.zip	COMPLETED	55	4
20120725 09:12:10	LOAD	JAIME HAUSER	POMN TSAT RD DATA.zip	COMPLETED	55	0
20120725 09:12:08	STAGE	JAIME HAUSER	POMN TSAT RD DATA.zip	COMPLETED	55	0
20120720 11:50:00	CRST	JAIME HAUSER	RIIR TSAT RD DATA.zip	COMPLETED	387	1
20120720 11:48:55	LOAD	JAIME HAUSER	RIIR TSAT RD DATA.zip	COMPLETED	387	0
20120720 11:48:52	STAGE	JAIME HAUSER	RIIR TSAT RD DATA.zip	COMPLETED	387	0
20120720 10:19:29	LOAD	JAIME HAUSER	RIIR TO-15 monitor transaction	COMPLETED	0	0
20120720 10:14:37	LOAD	JAIME HAUSER	RIIR TO-15 monitor transaction	ERROR	513	7
20120720 10:14:34	STAGE	JAIME HAUSER	RIIR TO-15 monitor transaction	COMPLETED	520	0
20120720 10:10:17	LOAD	JAIME HAUSER	RIIR TO-11 monitor transaction	COMPLETED	117	0
20120720 10:10:13	STAGE	JAIME HAUSER	RIIR TO-11 monitor transaction	COMPLETED	117	0
20120525 10:27:49	POST	JAIME HAUSER	TSAT RD DATA 20120525.zip	COMPLETED	11	0
20120525 10:27:39	CRST	JAIME HAUSER	TSAT RD DATA 20120525.zip	COMPLETED	11	0
20120525 10:27:36	LOAD	JAIME HAUSER	TSAT RD DATA 20120525.zip	COMPLETED	0	0
20120525 09:08:16	CRST	JAIME HAUSER	TSAT RD DATA 20120525.zip	COMPLETED	11	0
20120525 09:08:07	LOAD	JAIME HAUSER	TSAT RD DATA 20120525.zip	COMPLETED	11	0
20120525 09:08:05	STAGE	JAIME HAUSER	TSAT RD DATA 20120525.zip	COMPLETED	11	0
20120427 11:35:00	CRST	JAIME HAUSER		COMPLETED	12132	13
20120427 11:34:00	FILE	JAIME HAUSER	Tribal SAT RD Data 20120427.tx	COMPLETED		

Historical reports:

Re Run Reports



Put it into Practice: Exercise 2.2

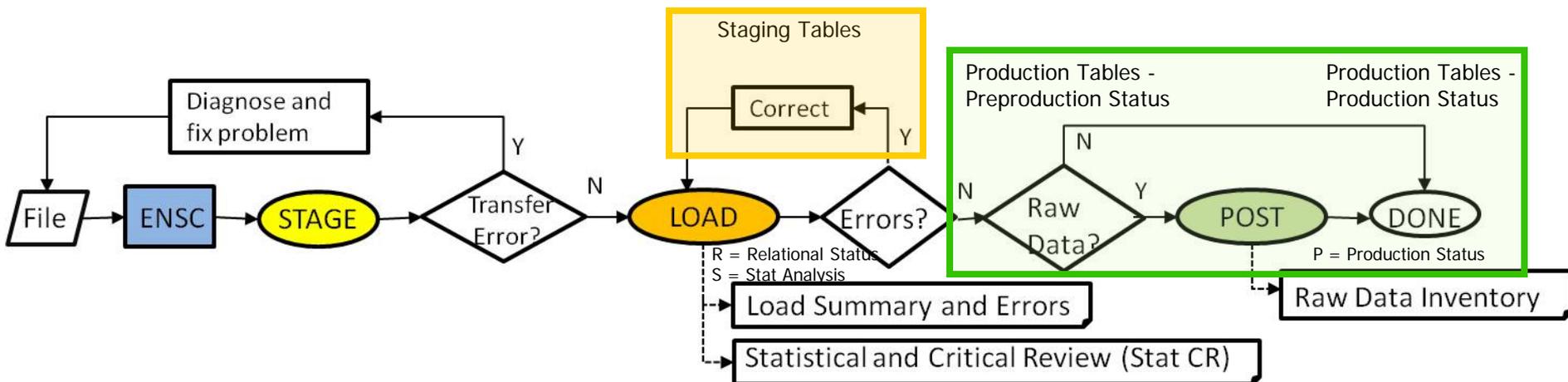
- You will submit a file containing non-raw data
 - You will use the “Automatic” process
 - Final processing step = “Post”
- Review the File Processing



Getting Your Data In: File Processing when all goes well Raw data



File Processing of Raw Data



At ENSC, you specify "Final Processing Step" of	At ENSC, you specify "Stop on Error" of	Did your file have Errors? ¹	You will see this "Process Status" on the AQS Batch form	What does it mean?
File contains Raw Data (RD transactions)				
STAGE	No/Yes ²	No	STAGE-COMPLETED	File is ready for LOAD or POST
		Yes	STAGE-ERROR	File had errors. Fix errors in file on your end and resubmit.
LOAD	No/Yes ²	No	CRST-COMPLETED	File through LOAD and STAT/CR -- ready for POST.
		Yes	CRST-COMPLETED	File through LOAD and STAT/CR. Check Recs Failing to Load count. Records w/errors are in <u>Correct</u> ; all others ready for POST.
POST	No	No	POST-COMPLETED	Done. Check Records Posted.
		Yes	POST-COMPLETED	File processing stops. Records w/errors in <u>Correct</u> . Other records <u>POSTED</u> .
	Yes	No	POST-COMPLETED	Done. Check Records Posted.
		Yes	RAW CRST-COMPLETED	File processing stops. Review reports to see reason.



Batch: Load step for Raw Data includes Stat CR

- Stat CR = Statistical Critical Review
 - Always run when Raw Data is added or changed (part of Load)
 - Evaluates data; flags anomalies (anomalies are not necessarily errors, and real errors that fit the rest of the data are not captured)
 - Stat Evaluation Report
 - Compares pre-production data to existing production data using Shewhart test, Patterns test, and Gap test
 - Tends to be reviewed unless submitter has already run these checks
 - Link to report is emailed to you
 - Also available via Process by File or History tabs
 - Scan Report
 - Information on maximum values and validity flags for raw data
 - Heavily used by a few submitters
 - Link to report is emailed to you
 - Also available via History tab
- <http://www.epa.gov/ttn/airs/aqs/softw/AQSUserGuide.pdf>



Batch: Post step for Raw Data

- Post = making the data “production status” and public
 - Required when Raw Data is added or changed
 - Online → Part of “Save”
 - Batch → Raw data requires the Post step
 - Raw Data Inventory Report
 - Information on data fields that were updated
 - Reviewed by many submitters; some even save each report
 - Link to report is emailed to you
 - Also available via History tab



Navigating the Processes using Batch form

Process by File

Process by file tab: Only shows the last process performed on a file

HISTORY AND STATUS						LOAD			POST		
Submission Date	File Name	User Name	Records In File	Date (last)	Process Status	Recs Loaded	Recs Failing to Load	Stat/CR Finding Count	Records to Post	Skip'd Monitors	Record Posted
20120725 08:07	LYNNOzoneJune2012.zip	JANE DOE	744	20120725 08:11	POST-COMPLETED	744	0	0	744	0	744

List of files

Submitted by user

Date and time of last process

Last process & status

Record counts for LOAD

Record counts for POST



History

History tab: Shows all processes performed on a file

Process by File **History**

PROCESS HISTORY

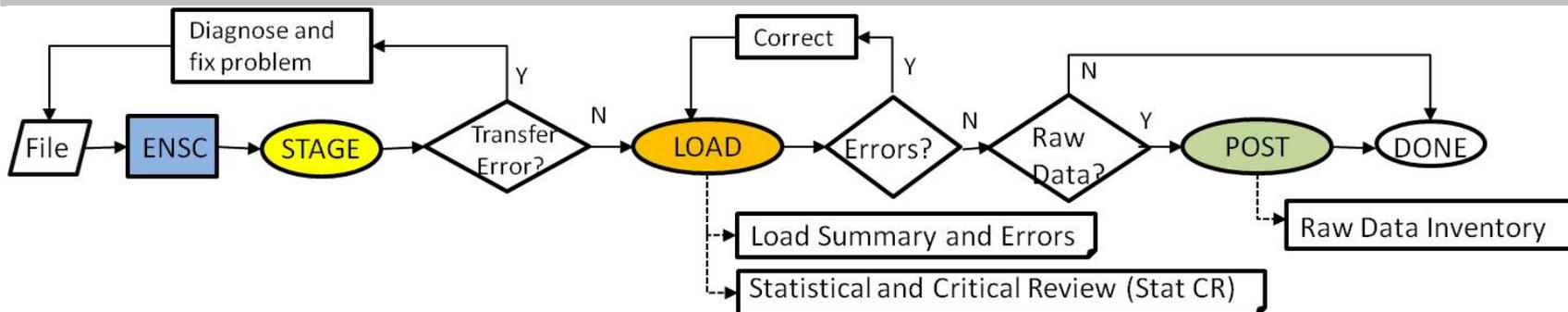
Session Date	Job Type	User Name	File Name	File Status	Successes	Failures
					Successful Transactions	Failed Transactions
20120725 08:07:22	POST	Jane Doe	LYNNOzoneJune2012.zip	COMPLETED	744	
20120725 08:07:08	CRST	Jane Doe	LYNNOzoneJune2012.zip	COMPLETED	744	0
20120725 08:06:12	LOAD	Jane Doe	LYNNOzoneJune2012.zip	COMPLETED	744	0
20120725 08:06:07	STAGE	Jane Doe	LYNNOzoneJune2012.zip	COMPLETED	744	

Historical reports:

- Load Summary and Errors
- Stat CR Report
- Raw Data Inventory

Re Run Reports

- Rerun Load Summary and Errors
- Rerun Stat CR Report
- Rerun Raw Data Inventory
- Rerun Scan Report
- Refresh History



Process by File - looking at more files

Process by file tab:
Only shows the last process performed on a file

BATCH (Massachusetts)

Process by File | History

Current Screening Group (Click Button to Change)

HISTORY AND STATUS						LOAD			POST		
Submission Date	File Name	User Name	Records In File	Date (last)	Process Status	Recs Loaded	Stat/Failing to Load	CR/Finding Count	Records to Post	Skip'd Monitors	Record Posted
20120605 13:52	MTLPMmar2012.zip	ANN SORENSEN	2427	20120605 13:57	POST-COMPLETED	2427	0	3	2427	0	2427
20120604 09:02	CCLYRX24hrcarb2012Q1.zip	ANN SORENSEN	116	20120604 09:03	POST-COMPLETED	116	0	0	116	0	116
20120531 11:39	EPALYNNUVD212.zip	ANN SORENSEN	696	20120531 11:40	POST-COMPLETED	696	0	0	696	0	696
20120531 11:18	PRECFORMAQSFLOWSPR20	ANN SORENSEN	25	20120531 11:24	LOAD-COMPLETED	25	0				
20120531 07:14	Exelon_March_AIRS_2012.zi	ANN SORENSEN	4484	20120531 07:17	POST-COMPLETED	4484	0	16	4484	0	4484
20120530 09:09	Audit_Q2_2012b.zip	ANN SORENSEN	15	20120530 09:09	LOAD-COMPLETED	15	0				
20120530 06:02	ROXTOXdupsQ1_2012.zip	ANN SORENSEN	581	20120530 06:04	POST-COMPLETED	581	0	23	581	0	581
20120530 05:03	RoxburyToxics2012Qtr1withM	ANN SORENSEN	1826	20120530 05:06	POST-COMPLETED	1245	581	9	1245	0	1245
20120529 13:09	LynnToxics2012Qtr1withMDL	ANN SORENSEN	1494	20120529 13:11	POST-COMPLETED	1494	0	71	1494	0	1494
20120529 10:12	PRECFEBamb2012.zip	ANN SORENSEN	62	20120529 10:17	LOAD-COMPLETED	62	0				
20120522 12:55	NAN_mdINSERT.zip	ANN SORENSEN	6	20120522 13:12	POST-COMPLETED	6	0	2	6	0	6

List of files

Submitted by user

Date and time of last process

Last process & status

Record counts for LOAD

Record counts for POST



Stat Eval Report

- Stat Eval = Statistical Evaluation and Critical Review Report
- automatically run after Load for Raw Data submissions
- Job Type is "CRST" → Stat CR Report is available

BATCH (National Air Data Group)

Process by File History



Air Quality Subsystem STATISTICAL EVALUATION and CRITICAL REVIEW REPORT Statistical Findings



Aug. 13, 2012

Session Date

- 20120809 14:06:13
- 20120809 14:05:59
- 20120809 14:03:51
- 20120809 13:46:03
- 20120809 13:43:11
- 20120809 13:43:09
- 20120809 11:48:24
- 20120809 09:32:00
- 20120809 09:31:55
- 20120808 14:41:24
- 20120703 09:05:18
- 20120703 09:05:15
- 20120702 11:32:45
- 20120702 11:30:11
- 20120702 11:24:05
- 20120702 11:06:25
- 20120702 09:40:54
- 20120625 16:58:38
- 20120625 16:58:16
- 20120618 13:46:00

Screening Group Name :National Air Data Group

File Name IOWA_SITE_DATA-0.zip

Monitor Id	Date:Time	Error	Above Gap Cnt	Slot Below Gap Cnt	Total Gap Cnt
19-153-9999-42602-1	Feb. 18, 2009 :0	Fails Dixon Ratio test.			

Critical Review Findings

No Critical Review Findings

Job Type	Operator	File Name	Status	Count	Gap Cnt
CRST	CHRIS CHAPMAN	IOWA_SITE_DATA-0.zip	COMPLETED	35088	1
LOAD	CHRIS CHAPMAN	IOWA_SITE_DATA-0.zip	COMPLETED	35088	0
LOAD	CHRIS CHAPMAN	IOWA_SITE-0.zip	ERROR	14	2
LOAD	CHRIS CHAPMAN	IOWA_SITE-0.zip	ERROR	0	16
STAGE	CHRIS CHAPMAN	IOWA_SITE_DATA-0.zip	COMPLETED	35088	0
STAGE	CHRIS CHAPMAN	IOWA_SITE-0.zip	COMPLETED	16	0
FILE	ROBERT COATS	do_nothing_unix.txt	ERROR		

Only records that fail a test are reported

Historical reports:

Load Summary and Errors

Stat CR Report

Raw Data Inventory

Report is stored for 15 days

Re Run Reports

Rerun Load Summary and Errors

Rerun Stat CR Report

Rerun Raw Data Inventory

After 15 days, must rerun

Rerun Scan Report

Refresh History



Scan Report

- Stat CR is automatically run after Load for Raw Data submissions
- Job Type is "CRST" → Scan Report is available

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
SCAN REPORT (AMP120)

Aug. 13, 2012

Monitor Id	Unit	D	Year	Q	Hist Max	Date-Time	1st		V 2nd		V 3rd		V 4th		V		
							Max	Date-Time	Loc	F	Max	Date-Time	Loc	F		Max	Date-Time
19-153-9999-42602-1	008	1	2008	-1			43	02/22:20		40	02/22:22		40	02/27:20		39	01/23:08
19-153-9999-42602-1	008	1	2008	-2			50	05/21:20		49	04/22:21		48	04/22:20		47	05/21:21
19-153-9999-42602-1	008	1	2008	-3			39	08/18:20		38	09/17:19		38	09/20:20		37	09/24:18
19-153-9999-42602-1	008	1	2008	-4			54	10/31:17		53	10/31:18		49	10/31:19		43	10/29:17
19-153-9999-42602-1	008	1	2009	-1			47	01/30:07		46	01/28:01		45	01/28:02		45	01/30:06
19-153-9999-42602-1	008	1	2009	-2			51	05/22:22		51	05/29:20		49	05/03:20		49	05/22:20
19-153-9999-42602-1	008	1	2009	-3			46	09/15:19		45	09/14:19		44	09/13:19		44	09/15:20
19-153-9999-42602-1	008	1	2009	-4			45	12/11:18		41	12/11:07		39	12/11:08		38	12/11:19
19-153-9999-42602-1	008	1	2010	-1			62	03/04:09		53	03/04:08		52	03/04:07		52	03/31:19
19-153-9999-42602-1	008	1	2010	-2			53	04/20:20		53	04/20:21		46	04/20:22		46	04/27:21
19-153-9999-42602-1	008	1	2010	-3			36	09/14:20		33	07/09:20		33	07/09:21		33	09/14:19
19-153-9999-42602-1	008	1	2010	-4			51	10/10:18		47	10/10:19		45	10/10:20		42	10/11:19
19-153-9999-42602-1	008	1	2011	-1			45	03/31:06		42.3	03/10:22		42.1	03/10:21		41.7	03/10:20
19-153-9999-42602-1	008	1	2011	-2			41.8	05/17:22		41.2	06/04:22		39.3	04/05:19		39.2	05/17:21
19-153-9999-42602-1	008	1	2011	-3			34.5	09/28:18		34.4	08/25:21		34.3	09/19:18		34.2	09/19:19
19-153-9999-42602-1	008	1	2011	-4			46.3	10/21:18		43.3	10/21:20		43.1	10/21:19		39.6	10/21:21
19-153-9999-42602-1	008	1	2012	-1			2.9	01/01:20		2.7	01/01:00		2.7	01/01:16		2.7	01/01:17

20120702 11:30:11	CRST	CHRIS CHAPMAN	IOWA_SITE_DATA-0.zip	COMPLETED	35088	1
20120702 11:24:05	LOAD	CHRIS CHAPMAN	IOWA_SITE_DATA-0.zip	COMPLETED	35088	0
20120702 11:06:25	LOAD	CHRIS CHAPMAN	IOWA_SITE-0.zip	ERROR	14	2
20120702 09:40:54	LOAD	CHRIS CHAPMAN	IOWA_SITE-0.zip	ERROR	0	16
20120625 16:58:38	STAGE	CHRIS CHAPMAN	IOWA_SITE_DATA-0.zip	COMPLETED	35088	0
20120625 16:58:16	STAGE	CHRIS CHAPMAN	IOWA_SITE-0.zip	COMPLETED	16	0
20120618 13:46:00	FILE	ROBERT COATS	do_nothing_unix.txt	ERROR		

Historical reports:

Load Summary and Errors

Stat CR Report

Raw Data Inventory

Re Run Reports

Rerun Load Summary and Errors

Rerun Stat CR Report

Rerun Raw Data Inventory

Rerun Scan Report

Refresh History



Raw Data Inventory Report

- Job Type is "POST" → Raw Data Inventory Report is available

BATCH (National Air Data Group)

Process by File History

PROCESS HISTORY

Session Date	Job Type	User Name	File Name	File Status	Successful Transactions	Failed Transactions
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 **United States**
Environmental Protection Agency

Air Quality Subsystem

Raw Data Inventory Report

Aug. 13, 2012

Screening Group: National Air Data Group

File Name: IOWA_SITE_DATA-0.zip

Monitor ID	Duration	Year	# Inserts	# Updates	# Deletes
19-153-9999-42602-1	1 HOUR	2008-1	744	0	0
19-153-9999-42602-1	1 HOUR	2008-2	696	0	0
19-153-9999-42602-1	1 HOUR	2008-3	744	0	0
19-153-9999-42602-1	1 HOUR	2008-4	720	0	0
19-153-9999-42602-1	1 HOUR	2008-5	744	0	0
19-153-9999-42602-1	1 HOUR	2008-6	720	0	0
19-153-9999-42602-1	1 HOUR	2008-7	744	0	0
19-153-9999-42602-1	1 HOUR	2008-8	744	0	0
19-153-9999-42602-1	1 HOUR	2008-9	720	0	0

Historical reports:

Re Run Reports:

← Report is stored for 15 days

← After 15 days, must rerun



Put it into Practice: Exercise 2.3

- You will submit a mixed file with non-Raw data and Raw data
 - You will use the “Automatic” process
 - Final processing step = “Post”
 - Go into AQS and look at the Batch form
 - Process by File
 - History



Getting Your Data In: How to Correct What Went Wrong



Batch load: When your file has errors

- AQS checks all incoming data
- Load process looks for relational and statistical anomalies
- Any data with errors goes to the “Staging Tables”
- Data with errors are prevented from getting all the way through to the “Production Tables”



What to do with failed transactions?

Process by File **History**

PROCESS HISTORY

Session Date	Job Type	User Name	File Name	File Status	Successful Transactions	Failed Transactions
20120725 08:07:22	POST	Jane Doe	LYNNOzoneJune2012.zip	COMPLETED	720	
20120725 08:07:08	CRST	Jane Doe	LYNNOzoneJune2012.zip	COMPLETED	720	0
20120725 08:06:12	LOAD	Jane Doe	LYNNOzoneJune2012.zip	COMPLETED	720	24
20120725 08:06:07	STAGE	Jane Doe	LYNNOzoneJune2012.zip	COMPLETED	744	

Historical reports:

- Load Summary and Errors
- Stat CR Report
- Raw Data Inventory

Re Run Reports

- Rerun Load Summary and Errors
- Rerun Stat CR Report
- Rerun Raw Data Inventory
- Rerun Scan Report
- Refresh History

Final Processing Step = "Post"

Stop on Error = "Yes" → Load error? Nothing is posted

Stop on Error = "Yes" → Stat/CR error? Nothing is posted

Stop on Error = "No" → Load error? "good" data posts; "bad" data in Correct

Stop on Error = "No" → Stat/CR error? Data still gets posted

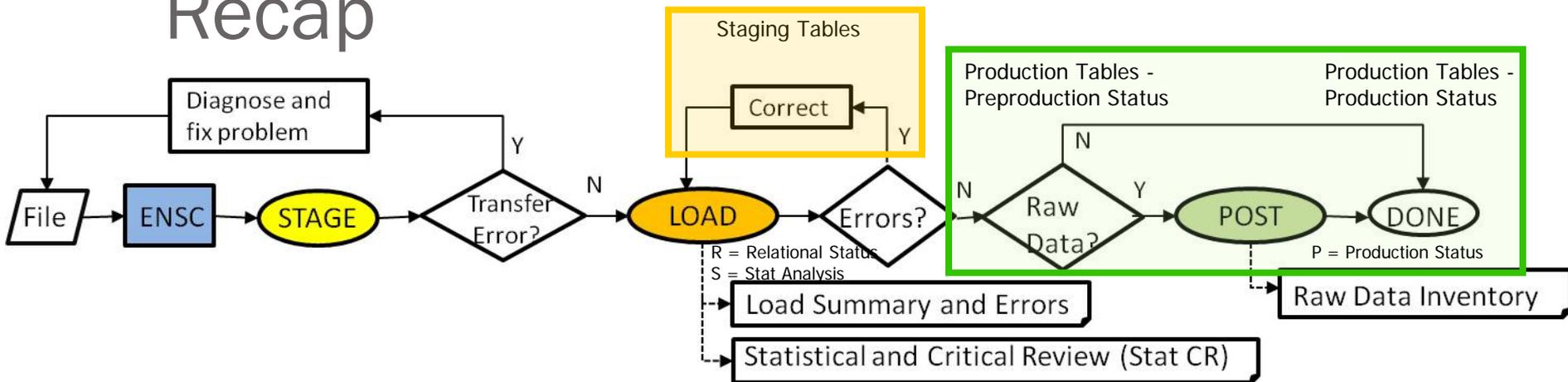


Caveats:

- “WARNING” or “ERROR”?
- “WARNING” does not prevent data from going into AQS
 - E.g. “Urbanized Area Code replaced by Geospatial Lookup”
- “ERROR” does prevent data from going into AQS
 - E.g., “Invalid Protocol”
 - *You must fix the data before it will go in.*
- Some errors are typos/missing metadata
- Some errors require additional knowledge
 - E.g., certain parameters (PM_{2.5}, lead, SO₂, NO₂) require a primary monitor designation on the Maintain Site form because their data is combinable by site



Recap

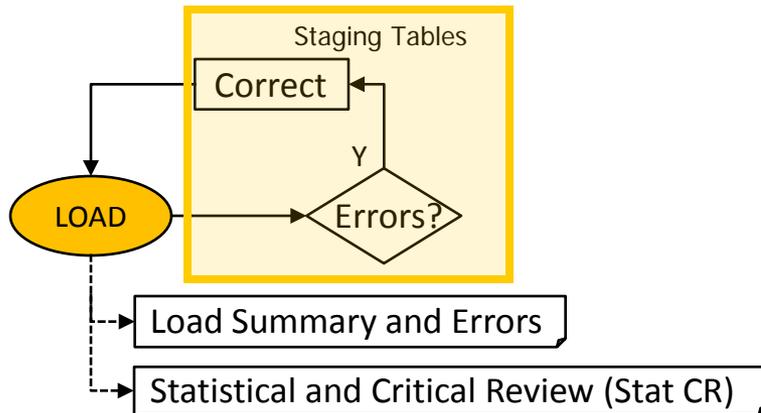


- Steps:
 - If There is No Raw Data and No Errors
 - ENSC → Load
 - If There is No Raw Data and Errors
 - Load → Load → Correct → Load
 - If There is Raw Data and No Errors
 - ENSC → Load (includes Stat/CR) → Post
 - If There is Raw Data and Errors
 - ENSC → Load (includes Stat/CR) → Correct → Load → Post
- Status of records will change with the steps run:

Status = R
→
Status = S
→
Status = P



Batch load: When your file has errors



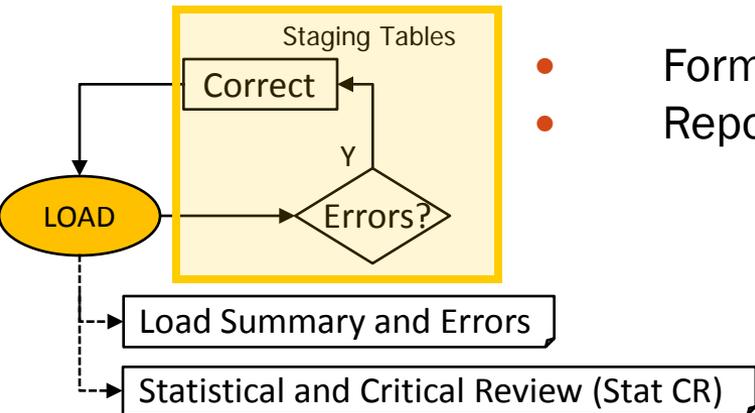
- How to fix the data?

Option 1: Use Correct (online editor that works against Staging)

Option 2: Use Preproduction Report to get data back out in the delimited transaction format; delete Preproduction data; fix the transactions outside of AQS and resubmit

Batch load: Using Correct to fix Data

- Form available to correct every type of data input record
- Reports available



EPA United States Environmental Protection Agency

Air Quality Subsystem
Edit/Load Summary Report

Jun. 5, 2002

Screening Group Name : INSTRUCTOR1

Transaction Type	Transaction Type Description	Errors	Exclusions	Edits	Posts	Total
AA	SITE BASIC	0	0	0	1	1
MA	MONITOR BASIC	0	0	0	1	1
MB	MONITOR SAMPLING	0	0	0	1	1
MC	MONITOR TYPE INFORMATION	1	0	0	1	2
MD	MONITOR AGENCY ROLE	3	0	0	3	6
ME	MONITORING OBJECTIVE INFORMATION	0	0	0	1	1
RD	RAW DATA	12	0	48	0	60
Totals		16	0	48	8	72



Batch load: Using Correct Forms

The screenshot shows the AIRS-AQS software interface. The title bar reads "AIRS-AQS". The menu bar includes "Action", "Help", "Site Data", "Monitor Data", "Raw", "Precision", "Main Menu". The toolbar contains various icons, with a yellow circle around the "Save" icon (labeled 4) and the "Execute Query" icon (labeled 1). The main window is titled "Correct - Monitor Types (Lbauder)". It contains a data table with columns: "County Code", "Site Id", "Parameter Code", "POC", "Ac", "Inc", "Type", "Type", "Exclusion", "E", "D". The "Type" column has a value "19700101" circled in yellow (labeled 3). The "Exclusion" column has a checked checkbox. Below the table is a "Details" section with columns "Column Name", "Error Code", and "Error Message". The "Error Message" column contains the text "Monitor_type_begin_date not within valid sampl period." circled in yellow (labeled 2). A "Details All Selected" button is located below the table.

Save

Execute Query
This will load all of this type of data in the Staging tables for your Screening Group.
If you want to limit selection you must put in selection values **before** the execute query.

Read the error message(s)
Error messages are the same as in the error details report
Many chose to go straight to the Correct screens rather than run a report.
The column name is sometimes informative.

Find, Analyze and fix the data
Fixing the data often requires knowledge of the nature of the data and may require going back to data sources.

Exclude unfixed data
Excluding unfixed data will keep it from raising error flags during load.



Correct Features

- New transactions may be entered using Correct forms
- After making changes/additions on Correct screen, **SAVE** changes
- “Delete All Selected” button will delete according to “Execute Query” selection criteria for the form; it will ignore subsequent changes.
- Can use “Delete by screening group” to completely eliminate all records in staging tables for your screening group

Be sure this is what you want to do. It works quickly and it deletes **EVERYTHING** for the screening group, including data entered by other users in your screening group.



Batch load: Using Correct Forms

Deleting Data (cont.)

The highlighted record can be deleted from the form.

All selected records will be deleted.

The records will be deleted from the Staging Table database when the button is clicked.

Forms
This will delete all of selected records. Do you want to continue?
No

Tribal Ind	Tribal Code	Site Id	Para Code	Type Begin Date	Type End Date	Exclusion Ind	Exclusion Date

Column Name	Error Code	Error Message



Batch load: Using Correct Forms

Deleting Data (cont.)

The screenshot shows the AIRS-AQS software interface. The menu bar includes Action, Help, Session, Admin, Retrieval, Maintenance, Poc, Critical Rev, Certification, Batch, and Correct. The Correct menu is open, showing options: Site Data, Monitor Data, Raw, Precision, Accuracy, Composite, Annual Summary, Delete by Screening Group (highlighted), and Main Menu. A callout box points to the 'Delete by Screening Group' option with the text: "Delete By Screening Group will completely clear ALL records owned by the Screening Group in the Staging Tables." The background of the software window features the Environmental Protection Agency logo.



Search & Replace



- Not “Search & Replace” as you may know it!
- Replaces ALL Queried Values in a given column Regardless of the “Current Value”

Search and Replace

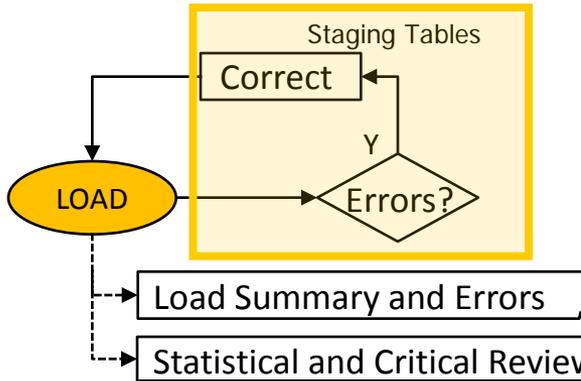
Replace Item: MONITORS.PARAMETER_CODE

Current Value: 81102

New Value: 12345

Buttons: Replace All, Replace, Cancel

Batch load: Load Correct Data



- Once data is corrected
 - Load the file again
 - Recheck for errors (“Recs Failing to Load” column”)
 - Identify errors using Load Summary and Error report
 - Correct residual errors (Correct)
- Repeat until no errors occur

Action Help Session Admin Retrieval Maintenance Critical Rev Certification Batch Old Batch **Correct** Main Menu

BATCH (National Air Data Group)

Process by File History

Current Screening Group (Click Button to Change) National Air Data Group Show Python Log Show Output Log

HISTORY AND STATUS						LOAD			POST		
Submission Date	File Name	User Name	Records In File	Date (last)	Process Status	Recs Loaded	Recs Failing to Load	Stat/CR Finding Count	Records to Post	Skip'd Monitors	Records Posted
20120809 14:05	NCore_MCInsertrecordsfromC	ANGIE SHATAS	46	20120809 14:06	LOAD-ERROR	0	46				
20120809 13:43	NCore_MCrecords tobekonver	ANGIE SHATAS	244	20120809 14:03	LOAD-COMPLETED	244	0				
20120809 13:46	NCore_MCInsertrecordsfromC	ANGIE SHATAS	46	20120809 13:46	STAGE-COMplete						
20120809 09:31	NCore_MCrecordstobekonver	ANGIE SHATAS	1079	20120809 11:48	LOAD-ERROR	835	244				
20120703 09:05	MDtest.zip	ANGIE SHATAS	1	20120808 14:41	LOAD-ERROR	0	1				
20120625 16:58	IOWA_SITE_DATA-0.zip	CHRIS CHAPMAN	35088	20120702 11:32	POST-COMPLETED	35088	0	1	35088	0	35088
20120625 16:58	IOWA_SITE-0.zip	CHRIS CHAPMAN	16	20120702 11:06	LOAD-ERROR	14	2				
		CHRIS CHAPMAN		20120524 15:32	LOAD-COMPLETED	0	0				
		CHRIS CHAPMAN		20120524 15:32	LOAD-COMPLETED	0	0				

PROCESS CONTROL

Process selected file through: **Load File** Post File Show User Log

Results and Reports: Load Summary and Errors Stat CR Report Raw Data Inventory Goto ENSC Refresh Sessions



Put it into Practice: Exercise 2.4

- You will submit a file with Raw data
 - You will use the “Automatic” process
 - Final processing step = “Post”
 - Go into AQS and look at the Batch form
 - Process by File
 - History
- Use the report and Correct to analyze and fix the errors
 - Site/monitor does not exist
 - Overlapping sample data
 - Inactive monitor on date of entry
 - Invalid Protocol

