

Data Input Formats for the Re-engineered Air Quality Subsystem

This document provides the format to process batch transactions for the re-engineered Air Quality Subsystem. The first field of all input formats will be the transaction type, which will indicate the type of data in the record. (The valid transaction types are listed below.) The second field will be the action code, which will indicate the requested database manipulation action. The valid action codes are: “I” for insert, “U” for update, and “D” for delete.

All transactions will be pipe delimited (“|”). A delimiter should not follow the final field in a record, so there will always be one less delimiter than fields for the given transaction type. It is essential that the proper number of delimiters be provided for a given transaction. So even if you need to only update one column on the database with “Monitor Basic” information, you still need to have 27 delimiters in that row. If you need to report a given field as null, place two delimiters back to back (“||”). Text fields should not be enclosed with single or double quotation marks.

Other Notation: R - Field is required for any action
R(n) - Field is Required for action ‘n’ (R(I) means required for an Insert Action for example)
X(n) - Conditionally Required for action ‘n’

Transaction Type	Transaction Description	No. Of Fields	No. Of Delimiters
AA	Basic Site Information	45	44
AB	Site Street Information	12	11
AC	Site Open Path Information	13	12
MA	Basic Monitor Information	28	27
MB	Monitor Sampling Periods	9	8
MC	Monitor Type Information	10	9
MD	Monitor Agency Role	11	10
ME	Monitoring Objective Information	11	10
MF	Monitor Sampling Schedule	22	21
MG	Monitor Street Description	9	8
MH	Monitor Obstruction Information	11	10
MI	Monitor Regulatory Compliance	10	9
MJ	Monitor Collocation Period	11	10
MK	Monitor Protocol	11	10
RC	Composite Raw Data	27	24
RD	Hourly, Daily, Sub-Hourly Raw Data	28	27
RA	Accuracy Data	32	31
RP	Precision Data	18	17
RS	Annual Summary Data	38	37
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Please Note

The intent of the “Formatting Rules” described on the following pages are not intended to illustrate the complete validation procedures that a particular piece of data will be subject to. It is merely stating the format of the field or foreign key constraint as defined in the database. Future publications will explain all data validations in greater detail.

S-1. Basic Site Information (AA)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	AA = Basic Site Info.
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITE table if Action code is 'U' or 'D'
Latitude ^{X(I)}	Number - 2.6 signed
Longitude ^{X(I)}	Number - 3.6 signed
UTM Zone ^{X(I)}	Number - 2.0 format
UTM Easting ^{X(I)}	Number - 8.2 format
UTM Northing ^{X(I)}	Number - 8.2 format
LDP Method of Collection ^{R(I)}	Must exist within LDP_COLLECTION_METHODS Reference Table
LDP Horizontal Datum ^{R(I)}	Must exist within LDP_HORIZONTAL_DATA Reference Table
LDP Source Scale ^{R(I)}	Number - 12.0 format
LDP Measurement Accuracy Value ^{R(I)}	Number - 8.2 format
LDP Vertical Measure ^{R(I)}	Number - 8.2 format
Time Zone	Must exist within TIME_ZONES Reference Table, if supplied
Support Agency ^{R(I)}	Must exist within STATE_AGENCIES Reference Table
Street Address ^{R(I)}	Text
City Code ^{R(I)}	Must exist within CITIES Reference Table
Urban Area Code ^{R(I)}	Must exist within URBANIZED_AREAS Reference Table
AQCR ^{R(I)}	Must exist within AQCRS Reference Table
Land Use ^{R(I)}	Must exist within LAND_USE_TYPES Reference Table
Location Setting ^{R(I)}	Must exist within LOCATION_SETTINGS Reference Table
Date Site Established ^{R(I)}	Date - YYYYMMDD format
Date Site Terminated	Date - YYYYMMDD format
Zip Code	Must exist within ZIP_CODES Reference Table, if supplied
Congressional District	Must exist within CONGRESSIONAL_DISTRICTS Reference Table, if supplied
Block	Must exist within BLOCKS Reference Table, if supplied
Block Group	Must exist within BLOCKS Reference Table, if supplied
Census Tract	Must exist within BLOCKS Reference Table, if supplied
Class I Area	Must exist within CLASS_ONE_AREAS Reference Table, if supplied
Local Region	Must exist within LOCAL_REGIONS Reference Table, if supplied
Local_Site Name	Text
HQ Evaluation Date	Date - YYYYMMDD format
Regional Evaluation Date	Date - YYYYMMDD format
Compass Sector	Must exist within COMPASS_SECTORS Reference Table
Distance to City	Number - 8.2 format
Type Meteorological Site	Must exist within MET_SITE_TYPES Reference Table, if supplied
Meteorological Site ID	Must exist within Reference Table, if supplied
Distance to Meteorological Site	Number - 8.2 format
Direction to Meteorological Site	Must exist within COMPASS_SECTORS Reference Table, if supplied
State or Local ID	Text
LDP Vertical Method ^{R(I)}	Must exist within LDP_VERTICAL_METHODS Reference Table
LDP Vertical Datum ^{R(I)}	Must exist within LDP_VERTICAL_DATA Reference Table
LDP Vertical Accuracy Value ^{R(I)}	Number

S-2. Site Street Information (AB)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	AB = Site Tangent Street Data
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITE table with the State Code and County Code
Tangent Street Number ^R	Number - 2.0 format
Street Name ^{R(I)}	Text
Type Road ^{R(I)}	Must exist within ROAD_TYPES Reference Table
Traffic Count ^{R(I)}	Number - 12.0 format
Year of Traffic Count ^{R(I)}	Date - YYYY format
Direction to Street ^{R(I)}	Must exist within COMPASS_SECTORS Reference Table
Source of Traffic Count	Must exist within TRAFFIC_VOLUME_SOURCES Reference Table, if supplied

S-3. Site Open Path Information (AC)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	AC = Site Open Path Data
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITE table with the State Code and County Code
Open Path Number ^R	Number - 2.0 format
Direction to Transmitter ^{R(I)}	Must exist within COMPASS_SECTORS Reference Table
Beam Length ^{R(I)}	Number - 8.2 format
Height of Transmitter ^{R(I)}	Number - 8.2 format
Height of Receiver ^{R(I)}	Number - 8.2 format
Minimum Height ^{R(I)}	Number - 8.2 format
Maximum Height ^{R(I)}	Number - 8.2 format
Land Use Under Path ^{R(I)}	Must exist within LAND_USE_TYPES Reference Table

M-1. Basic Monitor Information (MA)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	MA = Basic Monitor Information
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITOR table if Action code is 'U' or 'D'
Project Class	Must exist within PROJECT_TYPES Reference Table, if supplied
Dominant Source	Must exist within DOMINANT_SOURCES Reference Table, if supplied
Measurement Scale	Must exist within MEASUREMENT_SCALES Reference Table, if supplied
Open Path Number	Must exist within Site Open Path Table, if supplied
Probe Location Code	Must exist within PROBE_LOCATIONS Reference Table, if supplied
Probe Height	Number - 8.2 format
Horizontal Distance	Number - 8.2 format
Vertical Distance	Number - 8.2 format
Surrogate Flag Indicator	'Y' or 'N'
Unrestricted Air Flow Indicator	'Y' or 'N'
Sample Residence Time	Number - 8.2 format
Worst Site Type	Must exist within WORST_SITE_TYPES Reference Table, if supplied
Applicable NAAQS Indicator	'S', 'A', or 'B', if supplied
Spatial Average Indicator	'Y' or 'N', if supplied
Schedule Exemption Indicator	'Y' or 'N', if supplied
Community Monitoring Zone	Number - 4.0 format
Pollutant Area Code - 1	Must exist within POLLUTANT_AREAS Reference Table, if supplied
Pollutant Area Code - 2	Must exist within POLLUTANT_AREAS Reference Table, if supplied
Pollutant Area Code - 3	Must exist within POLLUTANT_AREAS Reference Table, if supplied
Pollutant Area Code - 4	Must exist within POLLUTANT_AREAS Reference Table, if supplied
Pollutant Area Code - 5	Must exist within POLLUTANT_AREAS Reference Table, if supplied

M-2. Monitor Sampling Periods (MB)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	MB = Monitor Sampling Period
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Date Sampling Began ^R	Date - YYYYMMDD
Date Sampling Ended	Date - YYYYMMDD

M-3. Monitor Type Information (MC)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	MC = Monitor Type Assignment
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Monitor Type ^R	Must exist within MONITOR_TYPES Reference Table
Monitor Type Begin Date ^R	Date - YYYYMMDD
Monitor Type End Date	Date - YYYYMMDD

M-4. Monitor Agency Role (MD)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	(MD = Monitor Agency Role)
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Agency Role Name ^{R(l)}	Must exist within AGECCNY_ROLES Reference Table
Agency Code ^R	Must exist within STATE_AGENCIES Reference Table
Begin Date ^{R(l)}	Date - YYYYMMDD
End Date	Date - YYYYMMDD

M-5 Monitoring Objective Information (ME)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	ME = Monitor Objective
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Monitor Objective ^R	Must exist within MONITOR_OBJECTIVE_TYPES Reference Table
Urban Area Represented ^{X(l)}	Must exist within URBANIZED_AREAS Reference Table, if supplied
MSA Represented ^{X(l)}	Must exist within MSAS Reference Table, if supplied
CMSA Represented ^{X(l)}	Must exist within CMSAS Reference Table, if supplied

M-6. Monitor Sampling Schedule (MF)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	MF = Monitor Sample Schedule
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
RCF Code ^R	Must exist within COLLECTION_FREQUENCIES Reference Table
RCF Begin Date ^R	Date - YYYYMMDD format
RCF End Date	Date - YYYYMMDD format
Number of Samples - January	Number – 12.0 format, if supplied
Number of Samples - February	Number – 12.0 format, if supplied
Number of Samples - March	Number – 12.0 format, if supplied
Number of Samples - April	Number – 12.0 format, if supplied
Number of Samples - May	Number – 12.0 format, if supplied
Number of Samples - June	Number – 12.0 format, if supplied
Number of Samples - July	Number – 12.0 format, if supplied
Number of Samples - August	Number – 12.0 format, if supplied
Number of Samples - September	Number – 12.0 format, if supplied
Number of Samples - October	Number – 12.0 format, if supplied
Number of Samples - November	Number – 12.0 format, if supplied
Number of Samples - December	Number – 12.0 format, if supplied

M-7. Monitor Street Description (MG)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	MG = Monitor Tangent Road
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Tangent Street Number ^R	Must exist within Site Tangent Street Table
Distance from Monitor ^{R(I, U)}	Number - 8.2 format

M-8. Monitor Obstruction Information (MH)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	MH = Monitor Obstruction
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Type Obstruction ^R	Must exist within PROBE_OBSTRUCTION_TYPES Reference Table
Direction from Monitor ^R	Must exist within COMPASS_SECTORS Reference Table
Distance to Monitor ^R	Number - 8.2 format
Height of Obstruction ^R	Number - 8.2 format

M-9 Monitor Regulatory Compliance (MI)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	MI = Monitor Reg. Compliance
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Monitor Regulation Code ^R	Must exist within PARAMETER_REGULATIONS Reference Table
Compliance Indicator	'Y' or 'N'
Compliance Date	Date - YYYYMMDD format

M-10 Monitor Collocation Period (MJ)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	MJ = Monitor Collocation Period
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Collocation Begin Date ^R	Date - YYYYMMDD format
Collocation End Date	Date - YYYYMMDD format
Distance from Primary Monitor ^{R(I)}	Number - 8.2 format
Primary Monitor Indicator	'Y' or 'N'

M-11 Monitor Protocol (MK)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	MK = Min. Detectable Period
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Monitor Protocol (MP) ID ^R	Number - 2.0 format
Sample Duration ^{R(I)}	Must exist within SAMPLE_DURATIONS Reference Table
Unit ^{R(I)}	Must exist within UNITS Reference Table
Method ^{R(I)}	Must exist within SAMPLING_METHODODOLOGIES Reference Table
Sampling Frequency	Must exist within COLLECTION_FREQUENCIES Reference Table, if valued
Composite Type	Must exist within COMPOSITE_TYPES Reference Table, if valued
Alternate Method Detectable Limit	Number - 5.5 format

R-1 Composite Raw Data (RC)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	RC = Composite Data Type
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Unit ^{R(I)}	Must exist within UNITS Reference Table
Method ^{R(I)}	Must exist within SAMPLING_METHODODOLOGIES Reference Table
Year ^R	Date – YYYY format
Period ^R	Must exist within COMPOSITE_TYPES Reference Table for the Composite Type
Number of Samples ^{R(I)}	Number – 10.0 format
Composite Type	Must exist within COMPOSITE_TYPES Reference Table
Sample Value ^{R(I)}	Number - 5.5 format
Monitor Protocol (MP) ID	Must exist within Monitor Protocols table for the monitor
Qualifier-1	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-2	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-3	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-4	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-5	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-6	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-7	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-8	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-9	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-10	Must exist within QUALIFIERS Reference Table, if valued
Alternate Method Detectable Limit	Number - 5.5 format
Uncertainty	Number - 5.5 format

R-2. Hourly, Daily, and Sub Hourly Raw Data (RD)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	RD = Raw Data Type
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITOR table with Parameter
Sample Duration ^{R(I)}	Must exist within SAMPLE_DURATIONS Reference Table
Unit ^{R(I)}	Must exist within UNITS Reference Table
Method ^{R(I)}	Must exist within SAMPLING_METHODOLOGIES Reference Table
Date ^R	YYYYMMDD format
Start Time ^R	hh:mm format
Sample Value ^{X(I,U)}	Number - 5.5 format
Null Data Code ^{X(I,U)}	Must exist within QUALIFIERS Reference Table, if valued
Sampling Frequency	Must exist within COLLECTION_FREQUENCIES Reference Table, if valued
Monitor Protocol (MP) ID	Must exist within Monitor Protocols Table for the Monitor
Qualifier-1	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-2	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-3	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-4	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-5	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-6	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-7	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-8	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-9	Must exist within QUALIFIERS Reference Table, if valued
Qualifier-10	Must exist within QUALIFIERS Reference Table, if valued
Alternate Method Detectable Limit	Number - 5.5 format
Uncertainty	Number - 5.5 format

R-3 Accuracy Data (RA)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	RA = Raw Accuracy Data
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Accuracy Audit ID Number	Number - 2.0 format (Legacy "Sequence #")
Sample Duration ^{R(I,U)}	Must exist within SAMPLE_DURATIONS Reference Table
Unit ^{R(I,U)}	Must exist within UNITS Reference Table
Method ^{R(I,U)}	Must exist within SAMPLING_METHODOLOGIES Reference Table
Year Represented	Date - YYYY format
Quarter Represented	'Q1', 'Q2', 'Q3', or 'Q4'
Date ^R	Date - YYYYMMDD format
Type Audit ^{R(I)}	Must exist within AUDIT_TYPES Reference Table
Local Primary Standard ^{R(I)}	Must exist within LOCAL_PRIMARY_STANDARDS Reference
Table	
Audit Class ^{R(I)}	Must exist within AUDIT_CLASSES Reference Table
Accuracy Type ^{R(I)}	Must exist within ACCURACY_TYPES Reference Table, if supplied
Audit Sample ID	Text
Expiration Date	Date - YYYYMMDD format
Audit Scheduled	Date - YYYYMMDD format
Level 1 Actual Value ^{X(I,U)}	Number - 5.5 format
Level 1 Indicated Value ^{X(I,U)}	Number - 5.5 format
Level 2 Actual Value ^{X(I,U)}	Number - 5.5 format
Level 2 Indicated Value ^{X(I,U)}	Number - 5.5 format
Level 3 Actual Value ^{X(I,U)}	Number - 5.5 format
Level 3 Indicated Value ^{X(I,U)}	Number - 5.5 format
Level 4 Actual Value ^{X(I,U)}	Number - 5.5 format
Level 4 Indicated Value ^{X(I,U)}	Number - 5.5 format
Other Level Actual Value ^{X(I,U)}	Number - 5.5 format
Other Level Indicated Value ^{X(I,U)}	Number - 5.5 format
Zero Span	Number - 5.5 format

R-4 Precision Data (RP)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	RP = Raw Precision Data
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Sample Duration ^{R(I,U)}	Must exist within SAMPLE_DURATIONS Reference Table
Unit ^{R(I,U)}	Must exist within UNITS Reference Table
Actual Method ^{R(I,U)}	Must exist within SAMPLING_METHODOLOGIES Reference Table
Precision ID ^R	Number - 2.0 format
Date ^R	Date - YYYYMMDD format
Actual Value	Number - 5.5 format
Indicated Method	Must exist within SAMPLING_METHODOLOGIES Reference table
Indicated Value	Number - 5.5 format
Collocated POC ID ^{X(I)}	Must exist within MONITOR Table (only for collocated data)
Precision Sample ID	Text - Up to 10 characters
Agency Performing Audit ^{X(I)}	Must exist with STATE_AGENCIES Table (only for FRM data)

R-5 Annual Summary Data (RS)

Field Name	Formatting Rule
Transaction Type ^R	Must exist within Reference Table (RS = Annual Summary)
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table with State Code and County Code
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table with Parameter
Sample Duration ^{R(I,U)}	Must exist within SAMPLE_DURATIONS Reference Table
Unit ^{R(I,U)}	Must exist within UNITS Reference Table
Method ^{R(I,U)}	Must exist within SAMPLING_METHODOLOGIES Reference Table
Year ^R	Date - YYYY format
Exceptional Data Type ^R	'0', '1', or '2'
Count of Observations	Number - 5.0 format
Number of Exceptional Events	Number - 5.0 format
Highest Sample Value	Number - 5.5 format
Date of Highest Sample Value	Date - YYYYMMDD Format
Time of Highest Sample Value	hh:mm format
2nd Highest Sample Value	Number - 5.5 format
Date of 2nd Highest Sample Value	Date - YYYYMMDD format
Time of 2nd Highest Sample Value	hh:mm format
3rd Highest Sample Value	Number - 5.5 format
4th Highest Sample Value	Number - 5.5 format
5th Highest Sample Value	Number - 5.5 format
Lowest Sample Value	Number - 5.5 format
Arithmetic Mean	Number - 5.5 format
Arithmetic Standard Deviation	Number - 5.5 format
Geometric Mean	Number - 5.5 format
Geometric Standard Deviation	Number - 5.5 format
10th Percentile	Number - 5.5 format
25th Percentile	Number - 5.5 format
50th Percentile	Number - 5.5 format
75th Percentile	Number - 5.5 format
90th Percentile	Number - 5.5 format
95th Percentile	Number - 5.5 format
98th Percentile	Number - 5.5 format
99th Percentile	Number - 5.5 format
Percent of Observations	Number - 6.4 format
Number < MDL	Number - 5.0 format

At least one of these fields must be value d on an Insert or Update

R-6. Blanks Data (RB)

<u>Field Name</u>	<u>Formatting Rule</u>
Transaction Type ^R	RB = Raw Blanks Type
Action Code ^R	Must = I, U, or D
State Code ^R	Must exist within STATES Reference Table
County Code ^R	Must exist within COUNTIES Reference Table
Site ID ^R	Must exist within SITES table (With State and County)
Parameter ^R	Must exist within PARAMETERS Reference Table
POC ^R	Must exist within MONITORS table (with Parameter)
Sample Duration ^{R(I,U)}	Must exist within SAMPLE_DURATIONS Reference Table
Unit ^{R(I,U)}	Must exist within UNITS Reference Table
Method ^{R(I,U)}	Must exist within SAMPLING METHODOLOGIES Reference Table
Blank Type	Either 'FIELD' or 'TRIP'
Date ^R	YYYYMMDD format
Time ^R	hh:mm format
Blank Value ^{X(I,U)}	Number - 10.5 format