

**EXAMPLE TRANSACTIONS FOR
REPORTING PM2.5 TO CURRENT AQS**

Transaction Format

2SSCCCTTTTPPPPOIUUUMTHYYMMDDSHFDV V V V G

A

KEY

Column #	Abbreviation	Meaning
1	2	Transaction for 24-hr data Column 1 no spaces between fields
2-3	SS	State Code
4-6	CCC	County Code
7-10	TTTT	Site ID within County
11-15	PPPPP	Parameter Code
16	O	Parameter Occurrence Code
17	I	Interval Code
18-20	UUU	Units Code
21-23	MTH	Method Code
24-25	YY	Sampling Year
26-27	MM	Sampling Month
28-29	DD	Sampling Day
30-31	SH	Sampling Start Hour
32	F	Sampling Frequency
33	D	Decimal point indicator
34-37	VVVV	Sample value
38	G	Validity Flag
80	A	Update Action

Example PM2.5 FRM Transactions:

Site: 060530002, all parameters required for PM2.5 Method - 116, and Date January 15, 1999.

2060530002881011710511699011500 10195W	I
2060530002681011710711699011500 10005	I
2060530002681021706511699011500 10239	I
2060530002681031701711699011500 10095	I
2060530002681041701711699011500 10185	I
2060530002681051701711699011500 10140	I
2060530002681061705911699011500 00760	I
2060530002681071705911699011500 00770	I
2060530002681081705911699011500 00765	I
2060530002681091710611699011500 01440	I

In the example, all fields except frequency valued. The codes for the parameters, units, and methods are provided on the attached tables.

Table 1. Parameter codes for FRM and supporting data

Routine Information to be Provided	Reference	AIRS Parameter Code	AIRS Description	Units Code	Units Description	Interval Code	Interval Description
PM2.5 Concentration	40 CFR Part 58, Section 58.35	88101	PM2.5 - LOCAL CONDITIONS	105	UG/CU METER (LOCAL CONDITIONS)	7	24 HOURS
Flow Rate, CV, for the sample period	40 CFR Part 50, Appendix L, Table L-1	68101	SAMPLE FLOW RATE, CV	107	PERCENT	7	24 HOURS
Sample volume, total	40 CFR Part 50, Appendix L, Table L	68102	SAMPLE VOLUME	065	CUBIC METER	7	24 HOURS
Temperature, ambient, minimum for the sample period.	40 CFR Part 50, Appendix L, Table L	68103	SAMPLE MIN TEMPERATURE	017	DEGREES, CENTIGRADE	7	24 HOURS
Temperature, ambient, maximum for the sample period.	40 CFR Part 50, Appendix L, Table L	68104	SAMPLE MAX TEMPERATURE	017	DEGREES, CENTIGRADE	7	24 HOURS
Temperature, ambient, average for the sample period.	40 CFR Part 50, Appendix L, Table L	68105	SAMPLE AVG TEMPERATURE	017	DEGREES, CENTIGRADE	7	24 HOURS
Barometric Pressure, ambient, minimum for the sample period.	40 CFR Part 50, Appendix L, Table L	68106	SAMPLE MIN BARO PRESSURE	059	MILLIMETERS (MERCURY)	7	24 HOURS
Barometric Pressure, ambient, maximum for the sample period.	40 CFR Part 50, Appendix L, Table L	68107	SAMPLE MAX BARO PRESSURE	059	MILLIMETERS (MERCURY)	7	24 HOURS
Barometric Pressure, ambient, average for the sample period.	40 CFR Part 50, Appendix L, Table L	68108	SAMPLE AVG BARO PRESSURE	059	MILLIMETERS (MERCURY)	7	24 HOURS
Elapsed sample time	40 CFR Part 50, Appendix L, Table L	68109	ELAPSED SAMPLE TIME	106	MINUTES	7	24 HOURS

Table 2. Validity Flags for use with FRM Data

Validity Flags to report with concentration as applicable	Reference	AIRS Validity Flags	AIRS Description
Multiple validity flags (use in current AQS until re-engineered available)	40 CFR Part 50, Appendix L, Table L	T	MULTIPLE PM2.5 VALIDITY FLAGS
Flow rate, 5-min, average out of spec (FLAG)	40 CFR Part 50, Appendix L, Table L	W	FLOW RATE AVERAGE OUT OF SPEC.
Filter temperature differential, 30-second interval, out of spec. (FLAG)	40 CFR Part 50, Appendix L, Table L	X	FILTER TEMPERATURE DIFFERENCE OUT OF SPEC.
Elapsed sample time, out of spec. (FLAG)	40 CFR Part 50, Appendix L, Table L	Y	ELAPSED SAMPLE TIME OUT OF SPEC.
Data collected did not or may not meet all of the critical criteria for sampling and analysis as specified in CFR and the Validation Template critical criteria table. As stated in the Validation Template: <i>“Criteria that were deemed critical to maintaining the integrity of a sample or group of samples were placed in the Critical Criteria Table. Observations that do not meet each and every criterion on the Critical Criteria Table should be invalidated unless there are compelling reason and justification for not doing so. Basically, the sample or group of samples for which one or more of these criteria are not met is invalid until proven otherwise.”</i> The State/local may use this flag when it is unclear of the effect of the deviation on data quality. This flag should be rarely used, but there may be instances where other QA/QC information tend to validate the sample or changes/updates to the critical criteria table may allow utilization of the data for some purposes.	D. Mobley Memo, 3/27/2000	1	DEVIATION FROM A CFR REQUIREMENT
Data quality may be impacted by sampling and analysis procedures which did not or may not comply with acceptable range or threshold values from either the Validation Template operational evaluations table or a State/local defined acceptance criteria.	D. Mobley Memo, 3/27/2000	2	OPERATIONAL DEVIATIONS
Data that may have been effected by events occurring in the field that could potentially have compromised the integrity of the sample (oil crystallization, excessive dust etc.)	D. Mobley Memo, 3/27/2000	3	FIELD ISSUE
Data that may have been effected by events occurring in the lab that could potentially have compromised the integrity of the sample (cassette off gassing, etc.)	D. Mobley Memo, 3/27/2000	4	LAB ISSUE

Data value that appears to be invalid either because it is outside the normal/expected range of concentrations or fails various statistical or comparison tests. However, there is no additional information available that would provide a reason to invalidate the value(s).	D. Mobley Memo, 3/27/2000	5	OUTLIER
Data collection prior to QAPP approval.	B. Hunt Memo, 1/21/1999	6	QAPP ISSUE

Table 3. Quality Assurance Codes

Quality Assurance Information to be Provided	Reference	AIRS Parameter Code	AIRS Description	Units Code	Units Description	Interval Code	Interval Description
Quarterly Flow Rate Audits	40 CFR Part 58, Appendix A, 5.5	88101	PM2.5 - LOCAL CONDITIONS	073	LITERS/MINUTE	7	24 HOURS
Collocated Samplers, where the duplicate sampler is an FRM Device	40 CFR Part 58, Appendix A, 5.5	88101	PM2.5 - LOCAL CONDITIONS	105	UG/CU METER (LOCAL CONDITIONS)	7	24 HOURS
FRM Audits	40 CFR Part 58, Appendix A, 5.5	88101	PM2.5 - LOCAL CONDITIONS	105	UG/CU METER (LOCAL CONDITIONS)	7	24 HOURS

Table 4. FRM Method Codes

PM2.5 Sample Collection Methods	Method Code	Reference Method	Units Code	Units Description	Interval Code	Interval Description
BGI MODEL PQ200 PM2.5 SAMPLER	116	RFPS-0498-116	105	UG/CU METER	7	24 HOURS
R & P MODEL 2000 PM2.5 SAMPLER	117	RFPS-0498-117	105	UG/CU METER	7	24 HOURS
R & P MODEL 2025 PM2.5 SAMPLER SEQUENTIAL	118	RFPS-0498-118	105	UG/CU METER	7	24 HOURS
ANDERSEN RAAS2.5-100 PM2.5 SAM	119	RFPS-0498-119	105	UG/CU METER	7	24 HOURS
ANDERSEN RAAS2.5-300 PM2.5 SEQ	120	RFPS-0498-120	105	UG/CU METER	7	24 HOURS
THERMO ENV MODEL 605 CAPS	123	RFPS-0498-123	105	UG/CU METER	7	24 HOURS
ANDERSEN RAAS2.5-200 PM2.5 AUDIT SAMPLER	128	RFPS-0299-128	105	UG/CU METER	7	24 HOURS
R & P MODEL 2000 PM2.5 AUDIT SAMPLER	129	RFPS-0499-129	105	UG/CU METER	7	24 HOURS
URG-MASS100 SINGLE PM2.5 SAMPLER	135	RFPS-0400-135	105	UG/CU METER	7	24 HOURS
URG-MASS300 SEQ PM2.5 SAMPLER	136	RFPS-0400-136	105	UG/CU METER	7	24 HOURS

Table 5. PM2.5 Continuous Method Codes

Analysis Method Description	Collection Method Description	Method Code	Units Code	Units Description	Interval Code	Interval Description
TEOM-GRAVIMETRIC 50 DEG C	PM2.5 SCC W/NO CORRECTION FACTOR	701	105	UG/CU METER	1	1 Hour
TEOM-GRAVIMETRIC 50 DEG C	PM2.5 SCC W/CORRECTION FACTOR	702	105	UG/CU METER	1	1 Hour
TEOM-GRAVIMETRIC 30 DEG C	PM2.5 SCC W/NO CORRECTION FACTOR	703	105	UG/CU METER	1	1 Hour
TEOM-GRAVIMETRIC 30 DEG C	PM2.5 SCC W/CORRECTION FACTOR	704	105	UG/CU METER	1	1 Hour
TEOM-GRAVIMETRIC 50 DEG C	PM2.5 SSI W/NO CORRECTION FACTOR	711	105	UG/CU METER	1	1 Hour
TEOM-GRAVIMETRIC 50 DEG C	PM2.5 SSI W/CORRECTION FACTOR	712	105	UG/CU METER	1	1 Hour
TEOM-GRAVIMETRIC 30 DEG C	PM2.5 SSI W/CORRECTION FACTOR	713	105	UG/CU METER	1	1 Hour
TEOM-GRAVIMETRIC 50 DEG C	PM2.5 WINS W/NO CORRECTION FACTOR	721	105	UG/CU METER	1	1 Hour
TEOM-GRAVIMETRIC 50 DEG C	PM2.5 WINS W/CORRECTION FACTOR	722	105	UG/CU METER	1	1 Hour
TEOM-GRAVIMETRIC 30 DEG C	PM2.5 WINS W/NO CORRECTION FACTOR	723	105	UG/CU METER	1	1 Hour
TEOM-GRAVIMETRIC 30 DEG C	PM2.5 WINS W/CORRECTION FACTOR	724	105	UG/CU METER	1	1 Hour
BETA ATTENUATION	MET-ONE BAM W/PM2.5 SCC	731	105	UG/CU METER	1	1 Hour
BETA ATTENUATION	MET-ONE BAM W/PM2.5 WINS	732	105	UG/CU METER	1	1 Hour

CAMMS-MASS PRESSURE DROP	PM2.5 SCC	740	105	UG/CU METER	1	1 Hour
CAMMS-MASS PRESSURE DROP	PM2.5 WINS	741	105	UG/CU METER	1	1 Hour
BETA-ATTENUATION	ANDERSEN BAM W/PM2.5 SCC	750	105	UG/CU METER	1	1 Hour
BETA-ATTENUATION	ANDERSEN BAM W/PM2.5 SCC	750	105	UG/CU METER	7	24 Hour
BETA-ATTENUATION	ANDERSEN BAM W/PM2.5 SSI	751	105	UG/CU METER	1	1 Hour

SCC = Sharp Cut Cyclone, SSI = Size Selective Inlet, WINS = Well Impactor Ninety Six

Note: The more generic PM2.5 continuous monitoring method codes will be blocked for use now that detailed codes above are available.