

The Emissions Collection and Monitoring Plan Project

DRAFT Emissions Database Design

Submitted to:

ECMPS Stakeholders

Submitted by:

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February 28, 2007

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DRAFT Emissions Database Design

1.0 Introduction

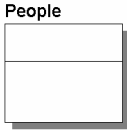
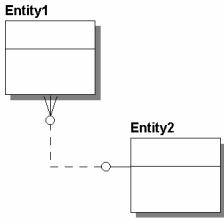
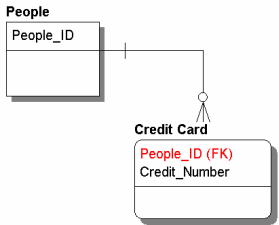
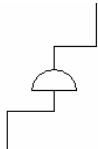
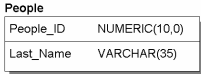
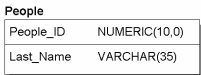
This document contains the draft logical database design model for the Emissions Collection and Monitoring Plan System (ECMPS) Client Submission Tool database. The logical database model is divided into sections for Monitoring Plan, Quality Assurance and Certification Test data, Emissions, and Application Metadata. This document covers the Emissions data. Within each Entity detail, the logical attribute name, description, data type, and primary key are given. Additionally, the corresponding Extensible Markup Language (XML) element tag for each attribute is provided. Within all lookup tables (lookup tables will generally have names that end in "_Code"), no XML element tag is provided as this data is not imported into the Client Tool, exported from the Client Tool, or editable by the user. Often the data type for an attribute is shown as a user defined data type. This allows a frequently used data type to be assigned a descriptive name. Figure 1 shows the user defined data types used in these logical models.

**Figure 1
Table of User Defined Data Types**

User Defined Data Type	Data Type	Null	Primary Key	Description
ACTIVITY_DATETIME	DATETIME	Y	N	Date and time on which record was added or updated.
ACTIVITY_DATE	DATE	Y	N	First or last date on which information was effective or activity occurred.
ACTIVITY_HOUR	NUMERIC(2)	Y	N	First or last hour in which information was effective or activity occurred.
ACTIVITY_MIN	NUMERIC(2)	Y	N	First or last minute in which information was effective or activity occurred.
DB_ID_KEY	VARCHAR(45)	Y	N	Unique combination of DB_Token and Globally Unique Identifier (GUID).
DESCRIPTION	VARCHAR(1000)	Y	N	Description of lookup code.
FLAG	VARCHAR(1)	Y	N	Field with up to two values denoting different conditions.
ID_KEY	INTEGER	N	Y	Identity key.
INDICATOR	INTEGER	Y	N	Value is always one or zero, indicating true or false condition.
LOOKUP_CODE	VARCHAR(7)	Y	N	Unique identifier for lookup table values.

The following table provides a definition to the ERD figures.

Figure 2
ERD Model Conventions and Standards

Element	Name	Description
	Entity	An entity represents a set of real or abstract things (people, places, events) that have common attributes or characteristics. Entities may be either independent or dependent and are the logical equivalent to a table. An independent entity is called a "parent" and the dependent tables to it are "children."
	Relationship	Relationships define how two entities are associated with each other. Relationships may be either optional or mandatory. A dotted line means the relationship is optional and a continuous line means that the relationship is mandatory.
	Cardinality	The small circle at the end of a relationship line shows the ratio of parent entity to child entities. The presence of the circular dot defines where there is more than one occurrence of a dependent entity. For example, for each person (in the People entity) there is at least one or more Credit Cards associated with that person.
	Subtype	A subtype is a relationship in which information is stored about a specific type of some other entity. For example, a salaried employee is a specific type of employee. Subtypes are used for expressing relationships that are only valid for that specific subtype.
	Attributes	An attribute represents a type of characteristic or property about an entity. An attribute is described as having a datatype and length. An attribute is the logical equivalent to a column. Datatypes can be numeric, date and/or time, or variable character (Varchar).
	Primary Key	When the attribute uniquely defines a single set of elements within an entity, that attribute (or set of attributes) is referred to as a Primary Key. Primary keys are shown at the top of the entity above the dividing line which distinguishes it from non-primary attributes.

1.1 Emissions Data

The Emissions Data entities include 26 tables, although only 10 of these tables include attributes which are updated by data that are submitted as Emissions data. The remaining tables are either lookup code tables or application metadata. The user is not able to edit the data in these tables.

The tables that include attributes which are updated through the Emissions data are:

- Daily Calibration;
- Daily Emission;
- Daily Test Summary;
- Derived Hourly Value;
- Hourly Fuel Flow;
- Hourly Operating Data;
- Hourly Parameter Fuel Flow;
- Hourly Submission Comment;
- Monitor Hourly Value; and
- Summary Value.

The following table is used to store calculated values generated by the Client Tool:

- Operating Supplemental Data.

In the ERDs, all tables which are not editable by the user are designated with a gray background color.

**Figure 4
Emissions Data Main Entities**

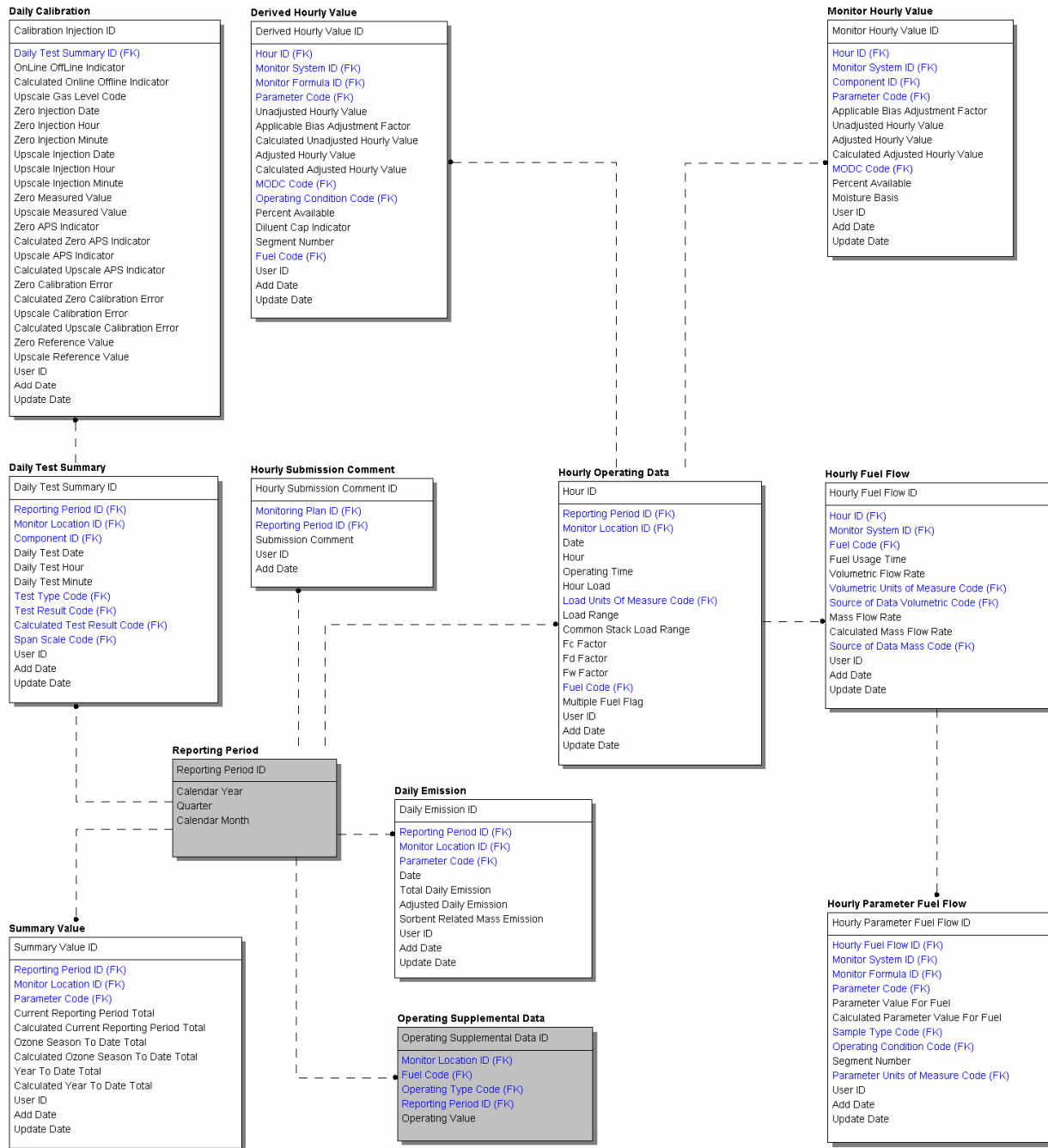


Figure 5
List of Entities

Entity Name	Entity Description	Entity Notes
Daily Calibration	Daily calibration test data and results. Each record in this table contains a single day's test for both low and high injection test results. Record Type 230.	
Daily Emission	Daily total mass Emissions. Currently CO ₂ only from Record Type 331.	
Daily Test Summary	Summary of daily calibration test results and daily interference check results.	
Derived Hourly Value	The derived hourly value for a parameter (e.g., SO ₂ lbs/hr) as calculated from measured values and reported by the source. Record Types 300, 310, 320, 323, 325, 328, 330.	
Fuel Code	Lookup table of fuel types.	This table is not editable by the user.
Gas Level Code	Lookup table of calibration gas level codes.	This table is not editable by the user.
Hourly Fuel Flow	Hourly fuel flow data for Appendix D. Record Type 302 and 303.	
Hourly Operating Data	A collection of data that contains one record for each hour in which a monitor location may or may not have operated. RT 300.	
Hourly Parameter Fuel Flow	Attribute of fuel flow (e.g., GCV) or calculated emissions or heat input determined from fuel flow information. Record Types 302, 303, 313, 314, and 324.	
Hourly Submission Comment	Table of comments provided by sources for a reporting period. RT 910.	
Long Term Fuel Flow	Contains long term fuel flow data for low mass emissions units. RT 305.	
MODC Code	Lookup table of method of determination codes used to identify the method by which the parameter was determined for the hour.	This table is not editable by the user.
Monitor Hourly Value	The hourly value monitored and reported for each parameter. Record types 200 - 220.	

(cont.)

Figure 5
List of Entities (cont.)

Entity Name	Entity Description	Entity Notes
Operating Condition Code	Lookup table of operating condition codes used to indicate the status of operation that determines the appropriate emissions value for the hour.	This table is not editable by the user.
Operating Supplemental Data	Contains summary information about unit/stack/pipe operating hours and fuel hours by quarter for use by the emissions evaluation routines.	This table is not editable by the user.
Operating Type Code	Lookup table for operating type code (e.g., quarterly operating hours).	This table is not editable by the user.
Parameter Code	Lookup table of parameter codes.	This table is not editable by the user.
Reporting Period	Lookup table for reporting periods.	This table is not editable by the user.
Sample Type Code	Lookup table for sample type codes indicating the source of fuel flow related values.	This table is not editable by the user.
Source of Data Mass Code	Lookup table of source of mass flow rate codes.	This table is not editable by the user.
Source of Data Volumetric Code	Lookup table of source of volumetric flow rate codes.	This table is not editable by the user.
Span Scale Code	Lookup table of codes for scale.	This table is not editable by the user.
Summary Value	Cumulative Emissions data. Record Types 301 and 307.	
Test Result Code	Lookup table of test result codes.	This table is not editable by the user.
Test Type Code	Lookup table of test types. Include the new DAHS verification completion date test.	This table is not editable by the user.
Units of Measure Code	Lookup table of units of measure.	This table is not editable by the user.

Figure 6
Daily Calibration Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Add Date	AddDate	Date and time in which record was added.	ACTIVITY_DATETIME	N
Calculated Online Offline Indicator	CalcOnLineOffLine Indicator	Indicates whether the unit or stack is operating at the time of the test.	INDICATOR	N
Calculated Upscale APS Indicator	CalcUpscaleAPSIndicator	Used to indicate if the alternative performance specification (APS) is used.	INDICATOR	N
Calculated Upscale Calibration Error	CalcUpscaleCalibration Error	Reported upscale level calibration error.	NUMERIC(5,1)	N
Calculated Zero APS Indicator	CalcZeroAPSIndicator	Used to indicate if the alternative performance specification (APS) is used.	INDICATOR	N
Calculated Zero Calibration Error	CalcZeroCalibrationError	Reported zero level calibration error.	NUMERIC(5,1)	N
Calibration Injection ID	CalibrationInjectionIDKey	Unique identifier for a daily calibration injection record.	INTEGER	Y
Daily Test Summary ID	DailyTestSummary IDKey	Unique identifier of a daily test summary record.	DB_ID_KEY	N
OnLine OffLine Indicator	OnLineOffLineIndicator	Indicates whether the unit or stack is operating at the time of the test.	INDICATOR	N
Update Date	UpdateDate	Date and time in which record was last updated.	ACTIVITY_DATETIME	N
Upscale APS Indicator	UpscaleAPSIndicator	Used to indicate if the alternative performance specification (APS) is used.	INDICATOR	N

(cont.)

Figure 6
Daily Calibration Entity Details (cont.)

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Upscale Calibration Error	UpscaleCalibrationError	Reported upscale level calibration error.	NUMERIC(5,1)	N
Upscale Gas Level Code	UpscaleGasCode	Code used to identify upscale gas level.	LOOKUP_CODE	N
Upscale Injection Date	UpscaleInjectionDate	Date of upscale injection.	ACTIVITY_DATE	N
Upscale Injection Hour	UpscaleInjectionHour	Hour of upscale injection.	ACTIVITY_HOUR	N
Upscale Injection Minute	UpscaleInjectionMinute	Upscale Injection Minute.	ACTIVITY_MIN	N
Upscale Measured Value	UpscaleMeasuredValue	Upscale measured value.	NUMERIC(13,3)	N
Upscale Reference Value	UpscaleReferenceValue	Upscale reference value.	NUMERIC(13,3)	N
User ID	UserID	User account or source of data that added or updated record.	VARCHAR(8)	N
Zero APS Indicator	ZeroAPSIndicator	Used to indicate if the alternative performance specification (APS) is used.	INDICATOR	N
Zero Calibration Error	ZeroCalibrationError	Reported zero level calibration error.	NUMERIC(5,1)	N
Zero Injection Date	ZeroInjectionDate	Date of zero level injection.	ACTIVITY_DATE	N
Zero Injection Hour	ZeroInjectionHour	Hour of zero level injection.	ACTIVITY_HOUR	N
Zero Injection Minute	ZeroInjectionMinute	Zero Injection Minute.	ACTIVITY_MIN	N
Zero Measured Value	ZeroMeasuredValue	Zero level measured value.	NUMERIC(13,3)	N
Zero Reference Value	ZeroReferenceValue	Zero level reference value.	NUMERIC(13,3)	N

Figure 7
Daily Emission Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Add Date	AddDate	Date and time in which record was added.	ACTIVITY_DATETIME	N
Adjusted Daily Emission	AdjustedDailyEmissions	CO ₂ mass emissions adjusted for CO ₂ retained in fly ash.	NUMERIC(10,1)	N
Daily Emission ID	DailyEmissionIDKey	Unique identifier of a daily emission record.	DB_ID_KEY	Y
Date	Date	Date corresponding to the daily emissions.	ACTIVITY_DATE	N
Monitor Location ID	MonitoringLocationIDKey	Unique identifier of a monitor location record.	DB_ID_KEY	N
Parameter Code	ParameterCode	Code used to identify the parameter.	LOOKUP_CODE	N
Reporting Period ID	ReportingPeriodIDKey	Unique identifier of a reporting period record.	ID_KEY	N
Sorbent Related Mass Emission	SorbentRelatedMassEmissions	Total daily sorbent-related CO ₂ mass emissions.	NUMERIC(10,1)	N
Total Daily Emission	TotalDailyEmissions	Total daily CO ₂ mass emissions.	NUMERIC(10,1)	N
Update Date	UpdateDate	Date and time in which record was last updated.	ACTIVITY_DATETIME	N
User ID	UserID	User account or source of data that added or updated record.	VARCHAR(8)	N

Figure 8
Daily Test Summary Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Add Date	AddDate	Date and time in which record was added.	ACTIVITY_DATETIME	N
Calculated Test Result Code	CalcTestResultCode	Code used to identify reported test result.	LOOKUP_CODE	N
Component ID	ComponentIDKey	Unique identifier of a monitoring component record.	DB_ID_KEY	N
Daily Test Date	Date	Date of the daily test.	ACTIVITY_DATE	N
Daily Test Hour	Hour	Hour of the daily test.	ACTIVITY_HOUR	N
Daily Test Minute	Minute	Minute of the daily test.	ACTIVITY_MIN	N
Daily Test Summary ID	DailyTestSummaryIDKey	Unique identifier of a daily test summary record.	DB_ID_KEY	Y
Monitor Location ID	MonitoringLocationIDKey	Unique identifier of a monitoring location record.	DB_ID_KEY	N
Reporting Period ID	ReportingPeriodIDKey	Unique identifier of a reporting period record.	ID_KEY	N
Span Scale Code	SpanScaleCode	Code used to identify the span scale.	LOOKUP_CODE	N
Test Result Code	TestResultCode	Code used to identify reported test result.	LOOKUP_CODE	N
Test Type Code	TestTypeCode	Code used to identify test type.	LOOKUP_CODE	N
Update Date	UpdateDate	Date and time in which record was last updated.	ACTIVITY_DATETIME	N
User ID	UserID	User account or source of data that added or updated record.	VARCHAR(8)	N

Figure 9
Derived Hourly Value Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Add Date	AddDate	Date and time in which record was added.	ACTIVITY_DATETIME	N
Adjusted Hourly Value	AdjustedHourlyValue	Adjusted parameter value for the hour, as calculated from measured values and then adjusted for bias, or the substitute value for missing data hours.	NUMERIC(13,3)	N
Applicable Bias Adjustment Factor	ApplicableBias AdjustmentFactor	BAF determined from most recent prior RATA (as calculated by ECMPS Client Tool).	NUMERIC(5,3)	N
Calculated Adjusted Hourly Value	CalcAdjustedHourlyValue	Adjusted parameter value for the hour, as calculated from measured values and then adjusted for bias, or the substitute value for missing data hours.	NUMERIC(13,3)	N
Calculated Unadjusted Hourly Value	CalcUnadjustedHourly Value	Unadjusted value calculated from measured values for the hour.	NUMERIC(13,3)	N
Derived Hourly Value ID	DerivedHourlyValueID Key	Unique identifier of a derived hourly value record.	INTEGER	Y
Diluent Cap Indicator	DiluentCapIndicator	Indicates whether the diluent cap was used for the calculation for this hour.	INDICATOR	N
Fuel Code	N/A	Code used to identify the type of fuel.	LOOKUP_CODE	N
Hour ID	HourIDKey	Unique identifier of an hourly operating data record.	DB_ID_KEY	N
MODC Code	MODCCode	Code used to identify the method of determination.	LOOKUP_CODE	N

(cont.)

Figure 9
Derived Hourly Value Entity Details (cont.)

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Monitor Formula ID	MonitoringFormulaIDKey	Unique identifier of a monitoring formula record.	DB_ID_KEY	N
Monitor System ID	MonitoringSystemIDKey	Unique identifier of a monitoring system record.	DB_ID_KEY	N
Operating Condition Code	OperatingConditionCode	Code used to identify the operating condition.	LOOKUP_CODE	N
Parameter Code	ParameterCode	Code used to identify the parameter.	LOOKUP_CODE	N
Percent Available	PercentAvailable	Percent monitor data availability.	NUMERIC(4,1)	N
Segment Number	SegmentNumber	Segment number of correlation curve. Rather than a user-assigned identifier, this is just an integer that indicates the segment number (assuming the first segment is number 1).	INTEGER	N
Unadjusted Hourly Value	UnadjustedHourlyValue	Unadjusted value calculated from measured values for the hour.	NUMERIC(13,3)	N
Update Date	UpdateDate	Date and time in which record was last updated.	ACTIVITY_DATETIME	N
User ID	UserID	User account or source of data that added or updated record.	VARCHAR(8)	N

Figure 10
Fuel Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Fuel Code	N/A	Code used to identify the type of fuel.	LOOKUP_CODE	Y
Fuel Code Description	N/A	Description of lookup code.	DESCRIPTION	N
Fuel Group Code	N/A	Identifies the group that the fuel is cataloged in.	LOOKUP_CODE	N
Unit Fuel Code	N/A	Each fuel corresponds to a unit fuel code. The unit fuel code is a subset and/or grouping of the fuel code values that are applicable to unit fuels.	LOOKUP_CODE	N

Figure 11
Gas Level Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Calibration Category	N/A	Identifies the entities for which a gas level code is applicable.	LOOKUP_CODE	N
Gas Level Code	N/A	Code used to identify calibration gas level.	LOOKUP_CODE	Y
Gas Level Code Description	N/A	Description of a gas level code.	DESCRIPTION	N

Figure 12
Hourly Fuel Flow Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Add Date	AddDate	Date and time in which record was added.	ACTIVITY_DATETIME	N
Calculated Mass Flow Rate	CalcMassFlowRate	Mass flow rate during combustion.	NUMERIC(10,1)	N
Fuel Code	FuelCode	Code used to identify the type of fuel.	LOOKUP_CODE	N
Fuel Usage Time	FuelUsageTime	Fuel usage time.	NUMERIC(3,2)	N
Hour ID	HourIDKey	Unique identifier of an hourly operating data record.	DB_ID_KEY	N
Hourly Fuel Flow ID	HourlyFuelFlowIDKey	Unique identifier of an hourly fuel flow record.	INTEGER	Y
Mass Flow Rate	MassFlowRate	Mass flow rate during combustion.	NUMERIC(10,1)	N
Monitor System ID	MonitoringSystemIDKey	Unique identifier of a monitoring system record.	DB_ID_KEY	N
Source of Data Mass Code	SourceOfDataMassCode	Code used to identify the source of mass flow rate.	LOOKUP_CODE	N
Source of Data Volumetric Code	SourceOfDataVolumetric Code	Code used to identify the source of volumetric flow rate.	LOOKUP_CODE	N
Update Date	UpdateDate	Date and time in which record was last updated.	ACTIVITY_DATETIME	N
User ID	UserID	User account or source of data that added or updated record.	VARCHAR(8)	N
Volumetric Flow Rate	VolumetricFlowRate	Volumetric flow rate during combustion.	NUMERIC(10,1)	N
Volumetric Units of Measure Code	VolumetricUnitsOf MeasureCode	Code used to identify the units of measure for volumetric fuel flow.	LOOKUP_CODE	N

Figure 13
Hourly Operating Data Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Add Date	AddDate	Date and time in which record was added.	ACTIVITY_DATETIME	N
Common Stack Load Range	CommonStackLoadRange	Load range for stack flow at a common stack (between 1 and 20). Optional alternative to standard load range.	INTEGER	N
Date	Date	Date of the hourly operating data.	ACTIVITY_DATE	N
Fc Factor	FcFactor	Carbon based F-factor corresponding to fuel(s) burned during the hour.	NUMERIC(8,1)	N
Fd Factor	FdFactor	Dry basis F-factor corresponding to fuel(s) burned during the hour.	NUMERIC(8,1)	N
Fuel Code	FuelCode	Code used to identify the type of fuel.	LOOKUP_CODE	N
Fw Factor	FwFactor	Wet basis F-factor corresponding to fuel(s) burned during the hour.	NUMERIC(8,1)	N
Hour	Hour	Hour of the hourly operating data.	ACTIVITY_HOUR	N
Hour ID	HourIDKey	Unique identifier of an hourly operating data record.	DB_ID_KEY	Y
Hour Load	HourLoad	Gross unit load or steam load value during unit operation.	NUMERIC(6,0)	N
Load Range	Load Range	Operating load range or load bin number (1 to 10).	INTEGER	N
Load Units Of Measure Code	LoadUnitsOfMeasure Code	Code used to identify the load units of measure.	LOOKUP_CODE	N
Monitor Location ID	MonitoringLocationID Key	Unique identifier of a monitoring location record.	DB_ID_KEY	N

(cont.)

Figure 13
Hourly Operating Data Entity Details (cont.)

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Multiple Fuel Flag	MultipleFuelFlag	Flag indicating that more than one fuel was burned during the hour.	CHAR(1)	N
Operating Time	OperatingTime	The fraction of the clock hour during which the unit (or any unit venting through the stack) combusted any fuel.	NUMERIC(3,2)	N
Reporting Period ID	ReportingPeriodIDKey	Unique identifier for a reporting period record.	ID_KEY	N
Update Date	UpdateDate	Date and time in which record was last updated.	ACTIVITY_DATETIME	N
User ID	UserID	User account or source of data that added or updated record.	VARCHAR(8)	N

Figure 14
Hourly Parameter Fuel Flow Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Add Date	AddDate	Date and time in which record was added.	ACTIVITY_DATETIME	N
Calculated Parameter Value For Fuel	CalcParameterValueForFuel	Hourly parameter value for fuel. (Currently SO ₂ mass rate, CO ₂ mass rate, or heat input rate.)	NUMERIC(13,5)	N
Hourly Fuel Flow ID	HourlyFuelFlowIDKey	Unique identifier of an hourly fuel flow record.	INTEGER	N
Hourly Parameter Fuel Flow ID	HourlyParameterFuelFlowIDKey	Unique identifier of an hourly parameter fuel flow record.	INTEGER	Y

(cont.)

Figure 14
Hourly Parameter Fuel Flow Entity Details (cont.)

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Monitor Formula ID	MonitoringFormulaIDKey	Unique identifier of a monitoring formula record.	DB_ID_KEY	N
Monitor System ID	MonitoringSystemIDKey	Unique identifier of a monitoring system record.	DB_ID_KEY	N
Operating Condition Code	OperatingConditionCode	Code used to identify the operating condition.	LOOKUP_CODE	N
Parameter Code	ParameterCode	Code used to identify the parameter.	LOOKUP_CODE	N
Parameter Units of Measure Code	ParameterUOMCode	Code used to identify the parameter units of measure.	LOOKUP_CODE	N
Parameter Value For Fuel	ParameterValueForFuel	Hourly parameter value for fuel. (Currently SO ₂ mass rate, CO ₂ mass rate, or heat input rate.)	NUMERIC(13,5)	N
Sample Type Code	SampleTypeCode	Code used to identify the sample type.	LOOKUP_CODE	N
Segment Number	SegmentNumber	Segment number of correlation curve. Rather than a user-assigned identifier, this is just an integer that indicates the segment number (assuming the first segment is number 1).	INTEGER	N
Update Date	UpdateDate	Date and time in which record was last updated.	ACTIVITY_DATETIME	N
User ID	UserID	User account or source of data that added or updated record.	VARCHAR(8)	N

Figure 15
Hourly Submission Comment Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Add Date	AddDate	Date and time in which record was added.	ACTIVITY_DATETIME	N
Hourly Submission Comment ID	HourlySubmissionCommentIDKey	Unique identifier of an hourly submission comment record.	DB_ID_KEY	Y
Monitoring Plan ID	MonitoringPlanIDKey	Unique identifier of a monitoring plan record.	DB_ID_KEY	N
Reporting Period ID	ReportingPeriodIDKey	Unique identifier for a reporting period record.	ID_KEY	N
Submission Comment	SubmissionComment	Comment provided by source on emissions data submitted for a reporting period.	VARCHAR(4000)	N
User ID	UserID	User account or source of data that added or updated record.	USERID	N

Figure 16
Long Term Fuel Flow Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Add Date	AddDate	Date and time in which record was added.	ACTIVITY_DATETIME	N
Calculated Total Heat Input	CalcTotalHeatInput	Calculated total heat input from this long term fuel flow value.	NUMERIC(10,0)	N
Fuel Flow Period Code	FuelFlowPeriodCode	Code used to identify the long term fuel flow period.	LOOKUP_CODE	N
Gross Calorific Value	GrossCalorificValue	Gross Calorific Value.	NUMERIC(10,1)	N
Gross Calorific Value Units of Measure Code	GCVUnitsOfMeasureCode	Code used to identify the units of measure for the GCV.	LOOKUP_CODE	N

(cont.)

Figure 16
Long Term Fuel Flow Entity Details (cont.)

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Long Term Fuel Flow ID	LongTermFuelFlowID Key	Unique identifier of a long term fuel flow record.	DB_ID_KEY	Y
Long Term Fuel Flow Units of Measure Code	LongTermFuelFlowUOM Code	Code used to identify the units of measure for the long term fuel flow value.	LOOKUP_CODE	N
Long Term Fuel Flow Value	LongTermFuelFlowValue	Long term fuel flow value.	NUMERIC(10,0)	N
Monitor Location ID	MonitoringLocationID Key	Unique identifier of a monitoring location record.	DB_ID_KEY	N
Monitor System ID	MonitoringSystemIDKey	Unique identifier of a monitoring system record.	DB_ID_KEY	N
Reporting Period ID	ReportingPeriodIDKey	Unique identifier for a reporting period record.	ID_KEY	N
Total Heat Input	TotalHeatInput	Total heat input from this long term fuel flow value.	NUMERIC(10,0)	N
Update Date	UpdateDate	Date and time in which record was last updated.	ACTIVITY_DATETIME	N
User ID	UserID	User account or source of data that added or updated record.	USERID	N

Figure 17
MODC Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
MODC Code	MODCCode	Code used to identify the method of determination.	LOOKUP_CODE	Y
MODC Code Description	N/A	Description of MODC code.	DESCRIPTION	N

Figure 18
Monitor Hourly Value Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Add Date	AddDate	Date and time in which record was added.	ACTIVITY_DATETIME	N
Adjusted Hourly Value	AdjustedHourlyValue	Adjusted average concentration or flow for the hour.	NUMERIC(13,3)	N
Applicable Bias Adjustment Factor	ApplicableBias AdjustmentFactor	Bias Adjustment Factor from most recent applicable RATA, as determined by ECMPS Client Tool.	NUMERIC(5,3)	N
Calculated Adjusted Hourly Value	CalcAdjustedHourly Value	Adjusted average concentration or flow for the hour.	NUMERIC(13,3)	N
Component ID	ComponentIDKey	Unique identifier of a monitoring component record.	DB_ID_KEY	N
Hour ID	HourIDKey	Unique identifier of an hourly operating data record.	DB_ID_KEY	N
MODC Code	MODCCode	Code used to identify the method of determination.	LOOKUP_CODE	N
Moisture Basis	MoistureBasis	Moisture basis for measured value.	VARCHAR(10)	N
Monitor Hourly Value ID	MonitorHourlyValueID Key	Unique identifier of monitor hourly value record.	INTEGER	Y
Monitor System ID	MonitoringSystemIDKey	Unique identifier of a monitoring system record.	DB_ID_KEY	N
Parameter Code	ParameterCode	Code used to identify the parameter.	LOOKUP_CODE	N
Percent Available	PercentAvailable	Percent monitor data availability.	NUMERIC(4,1)	N
Unadjusted Hourly Value	UnadjustedHourlyValue	Unadjusted measured value.	NUMERIC(13,3)	N

(cont.)

Figure 18
Monitor Hourly Value Entity Details (cont.)

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Update Date	UpdateDate	Date and time in which record was last updated.	ACTIVITY_DATETIME	N
User ID	UserID	User account or source of data that added or updated record.	VARCHAR(8)	N

Figure 19
Operating Condition Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Operating Condition Code	N/A	Code used to identify the operating condition.	LOOKUP_CODE	Y
Operating Condition Code Description	N/A	Description of lookup code.	DESCRIPTION	N

Figure 20
Operating Supplemental Data Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Fuel Code	FuelCode	Code used to identify the type of fuel.	LOOKUP_CODE	N
Monitor Location ID	MonitoringLocationID Key	Unique identifier of a monitoring location record.	DB_ID_KEY	N
Operating Supplemental Data ID	OperatingSupplementalID Key	Unique identifier of an operating supplemental data record.	INTEGER	Y
Operating Type Code	OperatingTypeCode	Code used to identify the operating type.	LOOKUP_CODE	N

(cont.)

Figure 20
Operating Supplemental Data Entity Details (cont.)

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Operating Value	OperatingValue	Number of hours (or other units) corresponding to the calendar year, quarter and operating type code.	NUMERIC(6,2)	N
Reporting Period ID	ReportingPeriodIDKey	Unique identifier of a reporting period record.	ID_KEY	N

Figure 21
Operating Type Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Operating Type Code	N/A	Code used to identify the operating type.	LOOKUP_CODE	Y
Operating Type Code Description	N/A	Description of lookup code.	DESCRIPTION	N

Figure 22
Parameter Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Parameter Code	N/A	Code used to identify the parameter.	LOOKUP_CODE	Y
Parameter Code Description	N/A	Description of lookup code.	DESCRIPTION	N

Figure 23
Reporting Period Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Calendar Month	Month	Reporting Month.	INTEGER	N
Calendar Year	Year	Reporting Year.	INTEGER	N
Quarter	Quarter	Reporting Quarter.	INTEGER	N
Reporting Period ID	ReportingPeriodIDKey	Unique identifier of a reporting period record.	ID_KEY	Y

Figure 24
Sample Type Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Sample Type Code	N/A	Code used to identify the sample type.	LOOKUP_CODE	Y
Sample Type Code Description	N/A	Description of lookup code.	DESCRIPTION	N

Figure 25
Source of Data Mass Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Source of Data Mass Code	N/A	Code used to identify the source of mass flow rate.	LOOKUP_CODE	Y
Source of Data Mass Code Description	N/A	Description of lookup code.	DESCRIPTION	N

Figure 26
Source of Data Volumetric Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Source of Data Volumetric Code	N/A	Code used to identify the source of volumetric flow rate.	LOOKUP_CODE	Y
Source of Data Volumetric Code Description	N/A	Description of lookup code.	DESCRIPTION	N

Figure 27
Span Scale Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Span Scale Code	N/A	Code used to identify the span scale.	LOOKUP_CODE	Y
Span Scale Code Description	N/A	Description of lookup code.	DESCRIPTION	N

Figure 28
Summary Value Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Add Date	AddDate	Date and time in which record was added.	ACTIVITY_DATETIME	N
Calculated Current Reporting Period Total	CalcCurrentReportingPeriodTot	Total value for current reporting period.	NUMERIC(13,3)	N
Calculated Ozone Season To Date Total	CalcOzoneSeasonToDateTot	Ozone season year to date total.	NUMERIC(13,3)	N
Calculated Year To Date Total	CalcYearToDateTotal	Year to date total.	NUMERIC(13,3)	N
Current Reporting Period Total	CurrentReportingPeriodTotal	Total value for current reporting period.	NUMERIC(13,3)	N

(cont.)

Figure 28
Summary Value Entity Details (cont.)

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Monitor Location ID	MonitoringLocationIDKey	Unique identifier of a monitoring location record.	DB_ID_KEY	N
Ozone Season To Date Total	OzoneSeasonToDateTotal	Ozone season year to date total.	NUMERIC(13,3)	N
Parameter Code	ParameterCode	Code used to identify the parameter.	LOOKUP_CODE	N
Reporting Period ID	ReportingPeriodIDKey	Unique identifier for a reporting period record.	ID_KEY	N
Summary Value ID	SummaryValueIDKey	Unique identifier of a summary value record.	DB_ID_KEY	Y
Update Date	UpdateDate	Date and time in which record was last updated.	ACTIVITY_DATETIME	N
User ID	UserID	User account or source of data that added or updated record.	VARCHAR(8)	N
Year To Date Total	YearToDateTotal	Year to date total.	NUMERIC(13,3)	N

Figure 29
Test Result Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Test Result Code	N/A	Code used to identify reported test result.	LOOKUP_CODE	Y
Test Result Code Description	N/A	Description of test result code.	DESCRIPTION	N

Figure 30
Test Type Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Test Type Code	N/A	Code used to identify test type.	LOOKUP_CODE	Y
Test Type Code Description	N/A	Description of a test type code.	DESCRIPTION	N

Figure 31
Units of Measure Code Entity Details

Attribute Name	XML Element Name	Attribute Description	Data Type	Primary Key
Units Of Measure Code	N/A	Code used to identify the units of measure.	LOOKUP_CODE	Y
Units Of Measure Code Description	N/A	Description of lookup code.	DESCRIPTION	N