

FINAL ENVIRONMENTAL SAMPLING, ANALYSIS and RESULTS: PROJECT

Standard No.: EX000002.2

February 4, 2010

Approved on February 4, 2010 by the
Exchange Network Leadership Council
for use on the Environmental
Information Exchange Network

Approved on February 4, 2010 by the
Chief Information Officer of the
U. S. Environmental Protection Agency
for use within U.S. EPA

This consensus standard was developed in collaboration by State, Tribal, and U. S. EPA representatives under the guidance of the Exchange Network Leadership Council and its predecessor organization, the Environmental Data Standards Council.

Foreword

The Exchange Network Leadership Council (ENLC) is a partnership among US EPA, States and Tribal partners to develop and agree upon data standards for environmental information collection and exchange. The Council seeks to promote efficient sharing of environmental information between State, US EPA and Tribal partners through the development of data standards. Access to this data standard, as well as further information about data standards is available at www.exchangenetwork.net and www.epa.gov/datastandards.

1.0 INTRODUCTION

Environmental information is a key tool in the effective management of our environmental resources and human health conditions. As a result, much effort goes into data acquisition, management, maintenance, exchange, and oversight. Greater access is the goal of many data consumers, and data managers. Providers invest significant resources meeting their requirements. In response, many data providers are improving access as they post usable copies of their environmental information on the web. These efforts are a vast improvement over previous conditions; however, there is a growing desire and need to both provide and receive data in a clearly defined and a uniform way. Data from multiple sources can then be aggregated and used without the inherent variations that exist between data sets across agencies.

1.1 Scope

This standard provides data elements and describes data groupings that are used to catalogue and exchange project information. The Environmental Sampling, Analysis and Results: Project data standard also identifies descriptors for environmental data project activities.

1.2 Revision History

Date	Version	Description
January 6, 2006	EX000002.1	Initial Environmental Data Standards Council Adoption
February 4, 2010	EX000002.2	Modification of data standard to incorporate additional water quality data elements.

1.3 References to Other Data Standards

This standard relies on other standards to make it complete and provide the necessary support. Users should consider the Normative Standards (references), noted below, integral to this standard. These include:

- Attached Binary Object [EX000006.1] Data Standard
- Bibliographic Reference [EX000007.1] Data Standard
- Contact Information [EX000019.2] Data Standard
- Facility Site Identification [EX000020.2] Data Standard
- Representation of Date and Time [EX000013.1] Data Standard

1.4 Terms and Definitions

For the purposes of this document, the following terms and definitions apply.

<u>Term</u>	<u>Definition</u>
Project	An environmental data collection effort that has a stated purpose and puts a series of samples/results into a meaningful context.

1.5 Implementation

Users are encouraged to use the XML registry housed on the Exchange Network Web site to download schema components for the construction of XML schema flows (<http://www.exchangenetwork.net>).

1.6 Document Structure

The structure of this document is briefly described below:

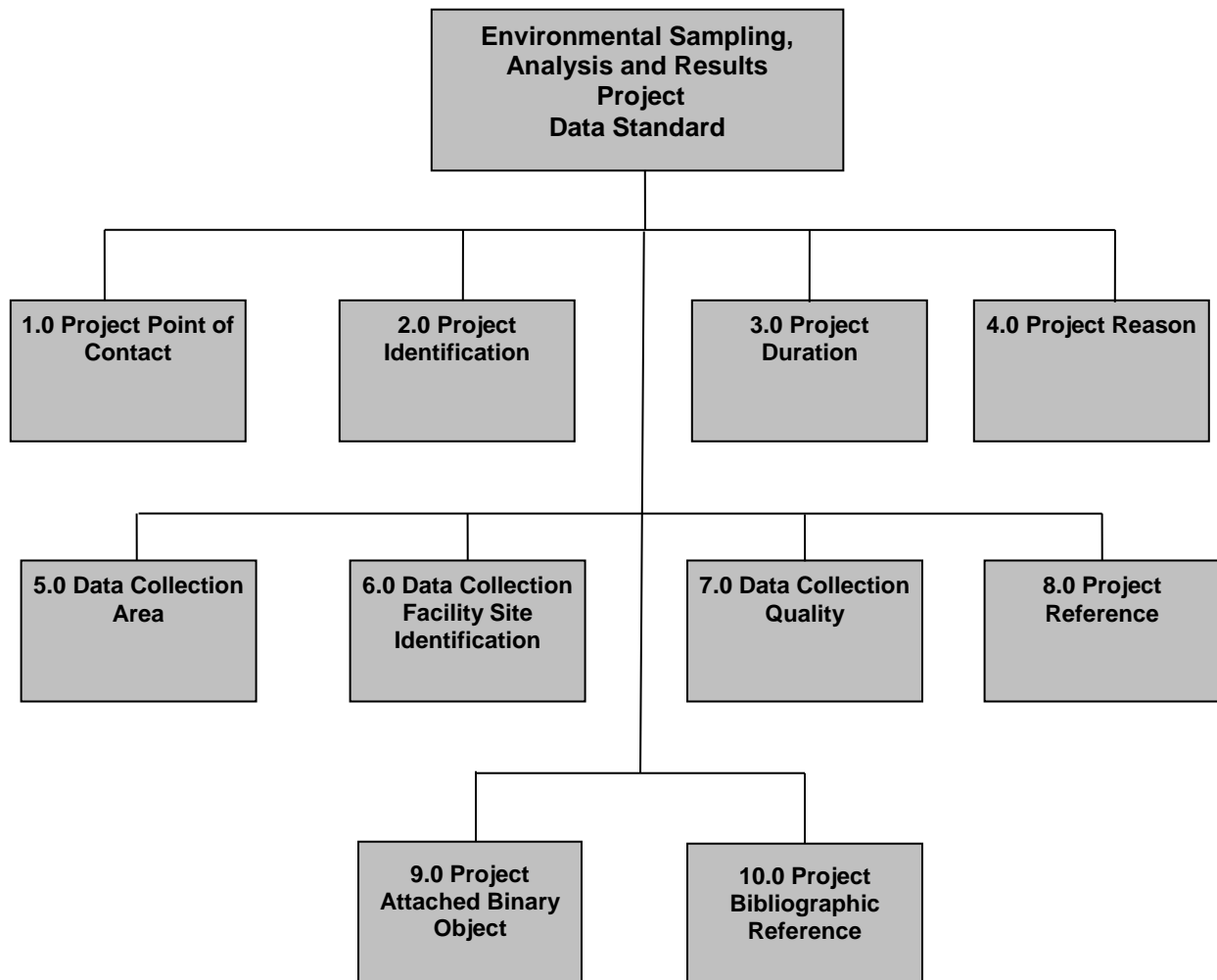
- a. Section 2.0 Diagram, illustrates the principal data groupings contained within this standard.
- b. Section 3.0 ESAR: Project Data Standard Table provides information on the high level, intermediate and elemental Project data groupings. Where applicable, for each level of this data standard a definition, XML tag, note(s), example list of values and format are provided. The format column may list the number of characters for the associated data element, where "A" specifies alphanumeric, "N" designates numeric, and date and time reference the Representation of Date and Time Standard. The format column may include the number of characters for the associated data element, where "A" specifies alphanumeric, "N" designates numeric, "G" and "D" are used for grouping and date/time.
- c. Data Element Numbering: For purposes of clarity and to enhance understanding of data standard hierarchy and relationships, each data group is numerically classified from the primary to the elemental level.
- d. Code and Identifier Metadata: Metadata, defined here as data about data or data elements, includes their descriptions and/or any needed context setting information required to identify the origin, conditions of use, interpretation, or understanding the information being exchanged or transferred. (Adapted from ISO/IEC 2382-17:1999 Information Technology Vocabulary—Part 17: Databases 17.06.05 metadata). Based on the business need, additional metadata may be required to sufficiently describe an identifier or a code. A note regarding this additional metadata is included in the notes column for identifier and code elements. Additional metadata for identifiers may include:
 - Identifier Context, which identifies the source or data system that created or defined the identifier

Additional metadata for codes may include:

- Code List Identifier, which is a standardized reference to the context or source of the set of codes
 - Code List Version Identifier, which identifies the particular version of the set of codes.
 - Code List Version Agency Identifier, which identifies the agency responsible for maintaining the set of codes
 - Code List Name, which describes the corresponding name for which the code represents
- e. Appendix A ESAR: Project Data Structure Diagram, illustrates the hierarchical classification of the Project data standard. This diagram enables business and technical users of this standard to quickly understand its general content and complexity. Appendix B, lists the references for the ESAR Project Document.

2.0 ENVIRONMENTAL SAMPLING, ANALYSIS, AND RESULTS: PROJECT DIAGRAM

This diagram specifies the major data groups that may be used to identify the characteristics and /or to catalog an Environmental Sampling, Analysis, and Results: Project.



3.0 ENVIRONMENTAL SAMPLING, ANALYSIS, AND RESULTS: PROJECT DATA STANDARD TABLE

1.0 Project Point of Contact

Definition: Identifies the organization(s) and/or person(s) related to the project. Identifies the organization or person with knowledge of the project and who can assist the public in finding additional information about a given project. It may be the project lead, the principle investigator, project staff, or a grant officer.

Relationship: None.

Notes: None.

XML Tag: ProjectPointOfContact

Data Element Name	Data Element Definitions	Notes	Form
1.1 Project Contact	Identifies the initial organization or person responsible for the data collection.	<p><i>Note:</i> Refer to the <u>Contact Information [EX000019.2] Data Standard.</u></p> <p>The following items are expected to define the project Entity/Person information:</p> <ul style="list-style-type: none"> Individual Full Name, Individual Identifier, Individual Identifier Type, Organization Formal Name, Affiliation Type, Mailing Address, Supplemental Address Text, Mailing Address City Name, Mailing Address State Name, Mailing Address State Code, Mailing Address Country Name, Mailing Address Country Code, 	G

Data Element Name	Data Element Definitions	Notes	Form
1.1 Project Contact (cont.)		<ul style="list-style-type: none"> Mailing Address Zip Code/International Postal Code, Telephone Number, Telephone Number Type Name, Electronic Address Text, Electronic Address Type Name. 	

1.2 Project Client Contact	Identifies the initial organization or person requesting the data collection.	<p><i>Note:</i> Refer to the Contact Information [EX000019.2] Data Standard.</p> <p>The following items are expected to define the project Entity/Person information:</p> <ul style="list-style-type: none"> Individual Full Name, Individual Identifier, Individual Identifier Type, Organization Formal Name, Affiliation Type, Mailing Address, Supplemental Address Text, Mailing Address City Name, Mailing Address State Name, Mailing Address State Code, Mailing Address Country Name, Mailing Address Country Code, Mailing Address Zip Code/International Postal Code, Telephone Number, Telephone Number Type Name, 	G
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Data Element Name	Data Element Definitions	Notes	Form
1.2 Project Client Contact (cont.)		Electronic Address Text, Electronic Address Type Name.	

2.0 Project Identification

Definition: Data elements relating to the identification of a project.
 Relationship: None.
 Notes: None.
 XML Tag: ProjectIdentification

Data Element Name	Data Element Definitions	Notes	Form
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2.1 Project Identifier	A designator used to uniquely identify the project to organizations sharing data.	<i>Note:</i> Based on the business need, additional metadata may be required to sufficiently describe an identifier. This additional metadata is described in section 1.6.d in the Introduction. Precise meaning will be agreed upon during development of the Trading Partner Agreement for the Exchange Network.	A
2.2 Project Name	The name assigned to the Project by the project leader or principal investigator.	Example List of Values: <ul style="list-style-type: none"> Central Columbia Basin GWMA – Nitrate Characterization Study 	A
2.3 Project Environmental Interest Name	The environmental permits and regulatory programs that apply to the project.	Example List of Values: <ul style="list-style-type: none"> Section 106 Grant Section 105 Grant NPDES Permit Superfund Site Remedial Investigation 	A

3.0 Project Duration

Definition: Data elements relating to the length and status of a project.

Relationship: None.

Notes: **The Representation of Date and Time [EX000013.1] Data Standard** will apply anytime a date is reported.

XML Tag: ProjectDuration

Data Element Name	Data Element Definitions	Notes	Form
3.1 Project Start Date	The calendar date on which a project began.	Reported as 4-digit year, 2-digit month, and 2-digit day.	D
3.2 Project End Date	The calendar date on which a project ended; may be after actual field activities have ended.	Reported as 4-digit year, 2-digit month, and 2-digit day.	D
3.3 Project Duration Text	Planned length or duration of the project activity.	Example List of Values: <ul style="list-style-type: none"> Five Years 1 Year Study Irrigation Season On-going Monitoring Low Flow Period (May-October) 	A

Data Element Name	Data Element Definitions	Notes	Form
3.4 Project Status Text	Description of the current state of the Project.	<p>Example List of Values:</p> <ul style="list-style-type: none"> ACTIVE: The project is currently active with field activities and/or data entry. COMPLETED: The project has been completed. All data has been collected and a Quality Assurance (QA) review has been completed. 	A
3.4 Project Status Text (cont.)		<ul style="list-style-type: none"> DATA COMPLETED: All study data has been collected, but a QA review has not yet been completed for the project. Data should be considered preliminary. 	
3.5 Project Status Date	Date indicating when the Project Status was determined.	Reference the Representation of Date and Time [EX000013.1] Data Standard Reported as 4-digit year, 2-digit month, and 2-digit day.	D

4.0 Project Reason

Definition: The explanation of or justification for the project.
 Relationship: None.
 Notes: None.
 XML Tag: ProjectReason

Data Element Name	Data Element Definitions	Notes	Form
4.1 Project Purpose Text	A summary description of the purpose of, or the hypothesis to be tested by the project.	<p><i>Note:</i> The Project Purpose should include the reason(s) for initiating the project plus its goals and expectations. This data field should also be used to describe any relationship that this project has with other activities.</p> <p>Example: The purpose of the study is to characterize the baseline concentration and three dimensional distribution of nitrate in groundwater in the Central Columbia Basin (Grant, Adams, and Franklin counties).</p>	A
Data Element Name	Data Element Definitions	Notes	Form

4.2 Project Objective Text	Summary of the objectives to be accomplished by the project.	Example: Collect sufficient information to determine permit compliance with a 95% level of confidence.	A
4.3 Sampling Design Type Name	A name used to identify the type of sampling design employed for this project to ensure that sampling activities can support project objectives.	Example List of Values: <ul style="list-style-type: none"> • Stratified random sampling • Systematic random sampling • Cluster sampling • Grid 	A
4.4 Project Outcome Description Text	A brief summary of the results of the project.	<i>Note:</i> The fully detailed project report may be referenced by attaching the relevant bibliographic citation to the project. Examples: <ul style="list-style-type: none"> • Final report describing the study findings and QA evaluation: USGS Water-Resources Investigation. • Rpt. 99-4288; Summary of Nitrate Concentrations in Ground Water of Adams, Franklin and Grant Counties, Washington, Fall 1998 – A Baseline for Future Trend Analysis. 	A

5.0 Data Collection Area

Definition: The geographic area for a project.
 Relationship: None.
 Notes: Multiple areas may exist for a project.
 XML Tag: DataCollectionArea

Data Element Name	Data Element Definitions	Notes	Form
5.1 Data Collection Area Name	The common name assigned to the geographic area of interest.	Example List of Values: <ul style="list-style-type: none"> • 1560 (CHATTANOOGA, TN-GA) • 07 (BOS-WOR-LAW, MA-NH-ME-CT) • Central Columbia Basin GWMA • Area 51 • Rocky Flats Arsenal 	A

Data Element Name	Data Element Definitions	Notes	Form
5.2 Data Collection Area Description Text	A general description of the geographic boundaries or spatial area being studied through the monitoring activities conducted as part of the project.	Examples: <ul style="list-style-type: none"> • Central Columbia Basin Groundwater Management Area (GWMA) - Includes All of Grant, Adams, and Franklin Counties • All sites within the Akron, Ohio City Limits • Potomac River from Lincoln Memorial Downstream to Wilson Bridge 	A
5.3 Data Collection Area Type Name	The predominant focus or frame of reference for the project area.	Multiple selections may be present. Example List of Values: <ul style="list-style-type: none"> • MSA (Metropolitan Statistical Area) • AQCR (Air Quality Control Region) • Aquifer • Estuary • Watershed • Airshed • Reservoir • Soil • Sediment • Landfill • Drums • Man-made Materials • 1st through 3rd Order Streams • Streams Capable of Supporting Coho Salmon Spawning and Rearing 	A

6.0 Data Collection Facility Site Identification

Definition: Basic identification information for a facility site of the project.

Relationship: None.

Notes: Refer to the **Facility Site [EX000020.2] Data Standard**.

The following items may be needed:
US EPA or State facility registry identifier
Geographic address
Geopolitical descriptors

May also include:
Locality name
County or State FIPS codes
Tribal name
Geographic coordinates of latitude/longitude

Note: Based on the business need, additional metadata may be required to sufficiently describe an identifier. This additional metadata is described in section 1.6.d. in the Introduction.

XML Tag: DataCollectionFacilitySiteIdentification

7.0 Data Collection Quality

Definition: The quality components for a project.

Relationship: None.

Notes: None.

XML Tag: DataCollectionQuality

Data Element Name	Data Element Definitions	Notes	Form
7.1 Data Collection Quality Assurance Plan Indicator	An indicator (Y/N) of the existence of a Quality Assurance Plan for the project.	List of Permitted Values: Y – yes N – no	A

Data Element Name	Data Element Definitions	Notes	Form
7.2 Data Collection Quality Assurance Plan Description Text	A summary of the Quality Assurance Plan approved for the project.	<i>Note:</i> This plan may be a QAPP required by US EPA, a quality assurance plan required by a state or other quality assurance plan.	A
7.3 Data Collection Quality Assurance Plan Date	The date of the quality assurance objectives document that relates to the data being collected.	Reported as 4-digit year, 2-digit month, and 2-digit day.	D

7.4 Sample Collector Certification Text	Text providing any certification obtained or experience level of personnel sampling for the project.	<i>Note:</i> For example, this could identify agency-trained or certified personnel.	A
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8.0 Project Reference

Definition: References, either directly as electronic attachments or as a bibliographic reference, documents, images, maps, photos, laboratory materials, geospatial coverage, and other objects within the data submission that pertain to the project.

Relationship: None.

Notes: Multiple objects may be attached to the data submission for each project included in the submission. May attach US EPA

Quality Assurance Project Plan (QAPP), state or lab quality assurance plan and/or Sampling Analysis Plan (SAP)

XML Tag: ProjectReference

9.0 Project Attached Binary Object

Definition: References electronic attachments to the project, including documents, images, maps, photos, laboratory materials, geospatial coverage, and other objects.

Relationship: None.

Notes: Reference the **Attached Binary Object [EX000006.1] Data Standard**. May attach US EPA Quality Assurance Project Plan (QAPP), state or lab quality assurance plan and/or Sampling Analysis Plan (SAP)

XML Tag: ProjectAttachedBinaryObject

10.0 Project Bibliographic Reference

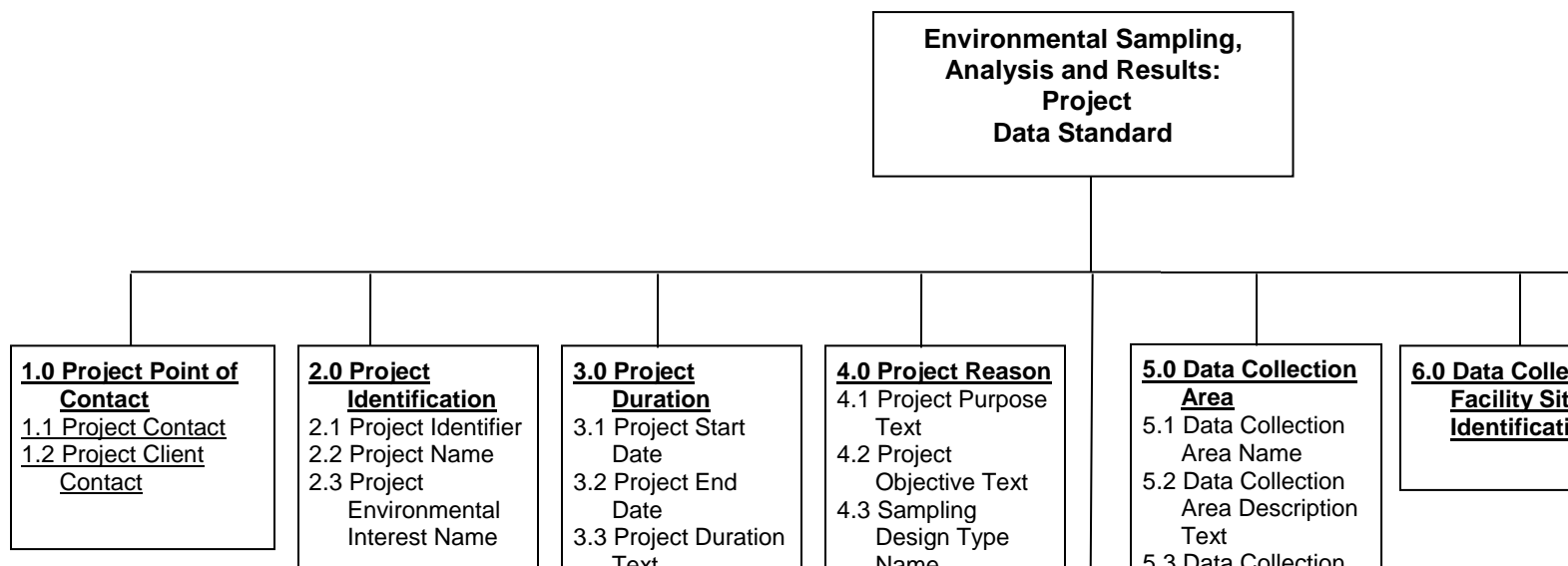
Definition: Catalog information describing associated project resources, including documents, images, maps, photos, laboratory materials, geospatial coverage, and other objects.

Relationship: None.

Notes: Reference the **Bibliographic Reference [EX000007.1] Data Standard**. May reference US EPA Quality Assurance Project Plan (QAPP), state or lab quality assurance plan and/or Sampling Analysis Plan (SAP)

XML Tag: ProjectBibliographicReference

Appendix A Environmental Sampling, Analysis, and Results: Project Data Structure Diagram



Appendix B References

- i. ISO/IEC 2382-17:1999 Information Technology Vocabulary—Part 17: Databases 17.06.*