

# **Pacific Northwest Water Quality Data Exchange**

## **Data Exchange Templates**

**Version 1.3**

June 3, 2004

Version 1.3 prepared by:



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## Introduction

The Pacific Northwest Water Quality Data Exchange includes two Data Exchange Templates (DETs). The DETs (Version 1.3) define data elements for both water quality monitoring data and the data catalog.

The following column headings are used in the DET tables:

<i>Data Element</i>	details the name of the proposed data element, together with a reference number, and XML schema tag name.
<i>Description</i>	describes the meaning and purpose of the data element.
<i>Required (Y/N/c)</i>	indicates whether or not the given data element will be required in the data submission for that submission to be considered complete. Some data elements, denoted by the letter “c” will be conditionally required based on other data element values.
<i>Data Type</i>	<p>specifies the format in which the data should be provided for this data element for the submission to be considered correct. Formats are alphanumeric, boolean, date, datetime, and numeric. Alphanumeric and numeric formats are expressed as <math>n(x)</math>. The letter <math>n</math> denotes whether the element is (a)lphanumeric or (n)umeric. The letter <math>x</math> indicates the length in number of characters that will be accepted through the Exchange for this element. For example, a data element with a domain of A(10) will be allowed to contain up to ten alphanumeric characters. Additionally, some decimal numeric data element formats are expressed as <math>n(x,y)</math>, where the letter <math>y</math> indicates the number of characters that may appear to the right of the decimal point.</p> <p>Data element data types and lengths have been defined according to reasonable assumptions made by the Workgroup, together with considerations of existing EDSC standards definitions. The Workgroup recognizes that these types may be revised as the Exchange is implemented and “real world” data examples are made available.</p>
<i>Business Rules</i>	details any additional requirements that are specific to the data element, such as dependencies between data elements.

## Water Quality Monitoring DET

The following table details each of the water quality monitoring data elements to be included in the Exchange DET. These data elements have been compared where appropriate to the following EDSC data standards as documented on the Environmental Data Registry:

- Latitude/Longitude (final)
- Date (final)
- Chemical Identification (final)
- Biological Taxonomy (final)
- Contact Information (final)
- Reporting Water Quality Results for Chemical and Microbiological Analytes (under development)

The data elements were also contrasted with the appropriate XML element names where those elements have previously been encapsulated in existing schema, such as the location data elements which have been included in the Facility Registry System (FRS) XML schema. Where appropriate, the data element properties were reconciled to match those of the EDSC standard, including the proposed XML tag names. In certain cases, the EDSC standard differs from the implemented XML schema elements. In these cases, the Exchange DET data elements reflect the properties of the XML schema elements rather than the EDSC standard since it is assumed that the XML schema element properties better reflect the latest understanding of these elements.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
<b>1.0 Providing Organization Information</b>		<p><i>These elements identify the organization that is making the data available to the Exchange. "Providing Organization" contact information must be provided for each data submission. It is expected that the providing entity will always be an organization and not an unaffiliated individual.</i></p> <p><i>The providing organization will be the same as the project data source in many cases. In certain situations, data may be made available or provided by a different organization from that which collected or developed the data. In some cases, therefore, the providing organization may be regarded as the "steward" of the data as described by the National Environmental Information Exchange Network concepts, but this will not always be the case.</i></p> <p><i>The providing organization will be used to identify any information passed across the Exchange.</i></p>			
1.1	Providing Organization Identifier XML Tag: ProvidingOrganizationIdentifier	A number or code used to uniquely identify the organization for reference purposes.	Y	A(30)	This must be unique to each organization providing data through the Exchange for reference purposes. This identifier will be assigned by the Data Catalog Administrator.
1.2	Providing Organization Name XML Tag: ProvidingOrganizationName	The legal, formal name and acronym of the organization that is providing the data being exchanged. This may represent the agency as a whole or some unit of the agency as deemed appropriate by the organization.	Y	A(80)	
1.3	Providing Organization Type XML Tag: EntityType	Describes the categorization of the organization for analysis purposes.	Y	A(20)	Valid values are: <ul style="list-style-type: none"> <li>- Federal</li> <li>- Tribal</li> <li>- State or Provincial</li> <li>- Local</li> <li>- Public or Volunteer</li> <li>- Non-profit</li> <li>- Educational</li> <li>- Commercial</li> <li>- Other</li> </ul>

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
1.4	Providing Organization Contact Name XML Tag: ProvidingOrganizationContactName	The name of the individual at the organization who may be contacted for questions regarding the data or the data exchange submission. This may be the project lead for the data collection, the agency data manager or another individual as deemed appropriate by the organization depending on the data being exchanged.	Y	A(70)	A contact name will always be required for each organization, although a generic title may be provided if a specific individual is not known.
1.5	Mailing Address XML Tag: MailingAddress	The address where a mail piece is intended to be delivered, including urban-style street address, rural route, and PO Box.	N	A(50)	The address information will apply to the individual at the organization defined as the primary contact person.
1.6	Mailing Address City Name XML Tag: MailingAddressCityName	The name of the city, town, or village where the mail is delivered.	N	A(30)	
1.7	Mailing Address State Name XML Tag: MailingAddressStateName	The name of the state or province where mail is delivered.	N	A(35)	The mailing country will be derived from the State information, where, for Canadian addresses, the Province code will be used.
1.8	Mailing Address ZIP Code/ International Postal Code XML Tag: MailingAddressZIPCode	The combination of the 5-digit Zone Improvement Plan (ZIP) code and the four-digit extension code (if available) that represents the geographic segment that is a subunit of the ZIP code, assigned by the U.S. Postal Service to a geographic location to facilitate mail delivery; or the postal zone specific to the country, other than the U.S., where the mail is delivered.	N	A(14)	
1.9	Telephone Number XML Tag: TelephoneNumber	The telephone number including area code and extension of the person who is the point of contact for the organization.	Y	A(15)	
1.10	Electronic Address Text XML Tag: ElectronicMailAddressText	The text that describes an electronic mail address of the person who is the point of contact for the organization.	Y	A(100)	
1.11	Providing Organization Web URL XML Tag: ProvidingOrganizationURL	The text that describes a web address of the organization that is providing the data being exchanged. This web address may represent the home page of the organization, program, project, or other website as appropriate.	N	A(100)	



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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules	
<p><b>2.0 Project Information</b></p> <p><i>A "project" generally defines an environmental data collection effort that has a stated purpose and puts a series of samples/results into a meaningful context. The project will be characterized by various data elements that describe the reason for the sampling and monitoring activity and provide general background to the result data submission, including the project sponsor information.</i></p> <p><i>More than one project may be included in a given data submission, and similarly, a submission may not necessarily include all of the result data associated with a specific project.</i></p> <p><i>Each project will be related to a project organization or individual.</i></p>					
<p><i>Project Details</i></p>					
2.1	<p>Project Identifier XML Tag: ProjectIdentifier</p>	<p>A unique identifier given to the project by the providing organization. This code may conform to an information system standard or some other identifying reference scheme.</p> <p>In association with the identifier ascribed to the providing organization, this identifier will serve to uniquely identify a given project.</p>	Y	A(30)	<p>This element may be used by organizations sharing data through the Exchange for reference purposes. The precise meaning of the data to be included in the element will be agreed by the Exchange partners during development of the Trading Partner Agreement. For example, two organizations may decide to use this field to exchange the relevant STORET identifier for the project.</p>
2.2	<p>Project Name XML Tag: ProjectName</p>	<p>The general name used by the providing organization for the monitoring project under which the data was collected. This may be the formal name used to describe the project for budgetary purpose, or some other name determined as appropriate by the project data source themselves.</p>	Y	A(255)	
2.3	<p>Project Description XML Tag: ProjectDescription</p>	<p>Describes the purpose and intended analytical goals of the monitoring work. This description should also include a discussion of the sampling frequency where this is appropriate.</p> <p>The DET does not attempt to accommodate the complexities associated with project hierarchies, instead the DET assumes that each project will be defined and described by the data source according to the classification deemed most appropriate by that data source. This level of detail may be described in the Trading Partner Agreement.</p>	Y	A(1999)	<p>This may include abstracts from the project plan, the QA project plan, and any interim and final reports, as appropriate and available.</p>

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
2.4	Quality Assurance Project Plan Indicator XML Tag: ProjectQAPPIndicator	Indicates (true/false) whether a systematic Quality Assurance Project Plan (QAPP) was used for the conduct of the project field activities and the result analysis.	Y	boolean	Values will be "true" or "false".
2.5	Quality Assurance Project Plan Description XML Tag:ProjectQAPPDescription	A summary description of the systematic Quality Assurance Project Plan (QAPP) that was developed and used during the project where appropriate.	c	A(1999)	Required where the Quality Assurance Project Plan Indicator is "Y".
2.6	Project Start Date XML Tag: ProjectStartDate	Date when the project was initiated. This may but will not necessarily be the date on which field activities commenced.	Y	date	Will be reported as 4-digit year, 2-digit month, and 2-digit day in YYYYMMDD format.
2.7	Project End Date XML Tag: ProjectEndDate	Date when the project ended. This may but will not necessarily be the date on which field activities completed.	N	date	Will be reported as 4-digit year, 2-digit month, and 2-digit day in YYYYMMDD format.
2.8	Project Area Description XML Tag: ProjectAreaDescription	Provides a general description of the geographic boundaries of the area being studied through the monitoring activities conducted as part of the project. The DET does not attempt to describe more complex relationships between geographic areas being studied and the project itself, for example, the re-evaluation of the same study area by a number of projects.	N	A(1999)	This description may include the details of the spatial coordinates that describe the boundaries of the project area. The inclusion of this information could support GIS-based characterization of the project area. These details will be agreed by exchange partners through the TPA.

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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules	
	<p><i>Project Data Source</i></p>	<p><i>Data elements describing the contact information for the organization(s) that sponsored the project through which the data was collected. A number of organizations may be regarded as the data source for a given project. Only one of these organizations may be characterized as the "Primary Data Source", with the remainder being characterized as "Secondary Data Source's". A "Primary Data Source" <u>must</u> be specified for each project.</i></p> <p><i>The project data source may not always be the providing organization for the data set, for example, where data collected by a smaller organization such as a watershed management group, may be held by Oregon DEQ in the Exchange host database for provision to the Exchange partners. In some cases, therefore, the data source may be regarded as the "steward" of the data as described by the National Environmental Information Exchange Network concepts, but this will not always be the case.</i></p> <p><i>A project data source may be either an individual or an organization. Where an organization is considered the data source, a contact name must be provided.</i></p>			
2.9	<p>Entity Identifier XML Tag: ContactEntityIdentifier</p>	<p>A number or code used to uniquely identify the individual or organization for reference purposes.</p>	Y	A(30)	<p>This element may be used by entities sharing data through the Exchange for reference purposes. The precise meaning of the data to be included in the element will be agreed by the Exchange partners during development of the Trading Partner Agreement. For example, two organizations may decide to use this field to exchange the relevant STORET identifier for the organization.</p>
2.10	<p>Primary Data Source Indicator XML Tag: PrimaryDataSourceIndicator</p>	<p>Indicates (true/false) whether the organization is the Primary Data Source. All Secondary Data Source Organizations will be indicated by a negative (false) response.</p>	Y	boolean	<p>Values will be "true" or "false".</p>
2.11	<p>Organization Formal Name XML Tag: ContactOrganizationName</p>	<p>The legal, formal name and acronym of the organization that is the source of the data being exchanged where appropriate.</p>	c	A(80)	<p>Required where the Entity Type is not "individual".</p>

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
2.12	Entity Type XML Tag: EntityType	Describes the general nature of the data source for analysis purposes. This will indicate whether the data source is an individual or where the data source is an organization, it will describe the type of organization.	Y	A(20)	Valid values are: - Individual - Federal - Tribal - State or Provincial - Local - Public or Volunteer - Non-profit - Educational - Commercial - Other
2.13	Contact Name XML Tag: ContactIndividualName	The name of the individual who may be contacted for questions regarding the data or the data exchange submission where appropriate, or, where the data is being provided by an organization, the name of the individual at that organization who may be contacted.	Y	A(70)	A contact name will always be required for each organization, although a generic title may be provided if a specific individual is not known.
2.14	Mailing Address XML Tag: MailingAddress	The address where a mail piece is intended to be delivered, including urban-style street address, rural route, and PO Box.	N	A(50)	The address information will apply to the individual defined as the primary contact person.
2.15	Mailing Address City Name XML Tag: MailingAddressCityName	The name of the city, town, or village where the mail is delivered.	N	A(30)	
2.16	Mailing Address State Name XML Tag: MailingAddressStateName	The name of the state or province where mail is delivered.	N	A(35)	The mailing country will be derived from the State information, where, for Canadian addresses, the Province code will be used.
2.17	Mailing Address ZIP Code/ International Postal Code XML Tag: MailingAddressZIPCode	The combination of the 5-digit Zone Improvement Plan (ZIP) code and the four-digit extension code (if available) that represents the geographic segment that is a subunit of the ZIP code, assigned by the U.S. Postal Service to a geographic location to facilitate mail delivery; or the postal zone specific to the country, other than the U.S., where the mail is delivered.	N	A(14)	
2.18	Telephone Number XML Tag: TelephoneNumber	The telephone number including area code and extension of the person who is the point of contact for the project data source.	Y	A(15)	

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
2.19	Electronic Address Text XML Tag: ElectronicMailAddressText	The text that describes an electronic mail address of the person who is the point of contact for the project data source.	N	A(100)	
	<i>Project Binary Object(s)</i>	<i>Supports the inclusion of reference documents, images, photos, GIS data layers, and other objects within the data submission that pertain to the project. Multiple objects may be attached to the data submission for each project included in the submission. Object attachments will adhere to the technical standards specified by the Network Node Functional Specifications Version 1.1. In addition to the core NodeDocument object specified to be used for attached documents by the Specifications, a number of data elements have been used by the EDSC Laboratory Data Standard that is currently under development. While these two standards are not entirely consistent, the following data elements will be used for the Exchange DET. These elements incorporate the more comprehensive proposed EDSC standard and at the same time, include the NodeDocument object specified for this purpose by the Network technical standards.</i>			
2.20	Binary Object File Name XML Tag: Name	Included in the NodeDocument object. The descriptive name for the object document, including file extension.	c	A(255)	Either the object itself must be provided or the URL. Where the object itself is provided, the file name, type and content elements must be provided.
2.21	Binary Object Type XML Tag: Type	Included in the NodeDocument object. Describes the general type of the document object. Values defined by the Network Node Functional Specification V.1.1. are: XML an XML document flat a flat text file bin a binary object ZIP a compressed file in ZIP format other an unspecified file format	c	A(5)	Either the object itself must be provided or the URL. Where the object itself is provided, the file name, type and content elements must be provided.
2.22	Binary Object Content XML Tag: Content	The value of this element is the actual document. If embedded in the XML payload, this will be base64 encoded. If the document is sent as an attachment, this element will be empty but with an href attribute of content ID referencing the attached document.	c	base64 binary	Either the object itself must be provided or the URL. Where the object itself is provided, the file name, type and content elements must be provided.
2.23	Binary Object URL XML Tag: BinaryObjectURL	Describes the location of the document where available on the Web.	c	A(100)	Either the object itself must be provided or the URL.
2.24	Binary Object Size XML Tag: BinaryObjectSize	Indicates the size in bytes of the binary object.	N	N(14)	May be useful for sender to determine how best to handle file.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
2.25	Binary Object Title XML Tag: BinaryObjectTitleText	A name given to the resource.	N	A(255)	Example: "ABC Company NPDES Compliance Sampling Chain of Custody: 12/31/2003"
2.26	Binary Object Creator XML Tag: BinaryObjectCreator	An entity primarily responsible for making the content of the resource.	N	A(100)	Examples of Creator include a person, an organization, or a service. Typically, the name of a Creator should be used to indicate the entity.
2.27	Binary Object Subject XML Tag: BinaryObjectSubject	A topic of the content of the resource.	N	A(100)	Typically, Subject will be expressed as keywords, key phrases, or classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme.
2.28	Binary Object Description XML Tag: BinaryObjectDescription	An account of the content of the resource.	N	A(2000)	Examples of Description include, but are not limited to, an abstract, table of contents, reference to a graphical representation of content or free-text account of the content.
2.29	Binary Object Publisher XML Tag: BinaryObjectPublisher	An entity responsible for making the resource available.	N	A(12)	Examples of Publisher include a person, an organization, or a service. Typically, the name of a Publisher should be used to indicate the entity.
2.30	Binary Object Contributor XML Tag: BinaryObjectContributor	An entity responsible for making contributions to the content of the resource.	N	A(50)	Examples of Contributor include a person, an organization, or a service. Typically, the name of a Contributor should be used to indicate the entity.
2.31	Binary Object Date XML Tag: BinaryObjectDate	A date of an event in the lifecycle of the resource.	N	Date	Typically, Date will be associated with the creation or availability of the resource. Recommended best practice for encoding the date value is defined in a profile of ISO 8601 [W3CDTF] and includes (among others) dates of the form YYYY-MM-DD.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
2.32	Binary Object Type XML Tag: BinaryObjectType	The nature or genre of the content of the resource.	N	A(100)	Type includes terms describing general categories, functions, genres, or aggregation levels for content. Recommended best practice is to select a value from a controlled vocabulary (for example, the DCMI Type Vocabulary [DCT]). To describe the physical or digital manifestation of the resource, use the Format element.
2.33	Binary Object Content Format XML Tag: BinaryObjectContentTypeText	The physical or digital manifestation of the resource.	N	A(100)	Typically, Format will include the media-type or dimensions of the resource. Format may be used to identify the software, hardware, or other equipment needed to display or operate the resource. Examples of dimensions include size and duration. Recommended best practice is to select a value from a controlled vocabulary (for example, the list of Internet Media Types [MIME] defining computer media formats). Examples: "image/jpeg", "text/html", "video/mpeg".
2.34	Binary Object Identifier XML Tag: BinaryObjectIdentifierText	An unambiguous reference to the resource within a given context.	N	A(12)	Recommended best practice is to identify the resource by means of a string or number conforming to a formal identification system. Formal identification systems include but are not limited to the Uniform Resource Identifier (URI) (including the Uniform Resource Locator (URL)), the Digital Object Identifier (DOI), and the International Standard Book Number (ISBN).

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
2.35	Binary Object Source XML Tag: BinaryObjectSource	A reference to a resource from which the present resource is derived.	N	A(100)	The present resource may be derived from the Source resource in whole or in part. Recommended best practice is to identify the referenced resource by means of a string or number conforming to a formal identification system.
2.36	Binary Object Language XML Tag: BinaryObjectLanguage	A language of the intellectual content of the resource.	N	A(20)	Recommended best practice is to use RFC 3066 [RFC3066], which, in conjunction with ISO 639 [ISO639], defines two- and three-letter primary language tags with optional subtags. Examples include “en” or “eng” for English, “akk” for Akkadian and “en-GB” for English used in the United Kingdom.
2.37	Binary Object Relation XML Tag: BinaryObjectRelation	A reference to a related resource.	N	A(100)	Recommended best practice is to identify the referenced resource by means of a string or number conforming to a formal identification system.
2.38	Binary Object Coverage XML Tag: BinaryObjectCoverage	The extent or scope of the content of the resource.	N	A(100)	Typically, Coverage will include spatial location (a place name or geographic coordinates), temporal period (a period label, date, or date range), or jurisdiction (such as a named administrative entity). Recommended best practice is to select a value from a controlled vocabulary (for example, the Thesaurus of Geographic Names [TGN]) and to use, where appropriate, named places or time periods in preference to numeric identifiers such as sets of coordinates or date ranges.



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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
2.39	Binary Object Rights XML Tag: BinaryObjectRights	Information about rights held in and over the resource.	N	A(100)	Typically, Rights will contain a rights management statement for the resource, or reference a service providing such information. Rights information often encompasses Intellectual Property Rights (IPR), Copyright, and various Property Rights. If the Rights element is absent, no assumptions may be made about any rights held in or over the resource.
<b>3.0 Monitoring Station Information</b>		<i>Provides identification and locational information about a sampling station. Many stations may be included in a data submission for one or more projects, with each project and station combination typically being used to define the location of a number of sampling events or field activities and associated results.</i>			
<i>Identifying Information</i>					
3.1	Station Identifier XML Tag: StationIdentifier	A unique identifier given to the station by the providing organization. This code may conform to an information system standard or some other identifying reference scheme. In association with the identifier ascribed to the providing organization, this identifier will serve to uniquely identify a given station.	Y	A(30)	This element may be used by organizations sharing data through the Exchange for reference purposes. The precise meaning of the data to be included in the element will be agreed by the Exchange partners during development of the Trading Partner Agreement. For example, two organizations may decide to use this field to exchange the relevant STORET identifier for the station.
3.2	Station Name XML Tag: StationName	A descriptive name or label specified by the sampling organization for the site at which sampling or other field activities are conducted.	Y	A(255)	

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
3.3	Station Location Description XML Tag: StationLocationDescription	Provides a comprehensive description of the location of the station. This would be used to include more detailed descriptive information than might be described through the station name and even geographic location elements. For example, "seven miles along fire road north of Black Butte, east of fire tower".	N	A(1999)	This element may also be used to record other descriptive characteristics of the location of the sampling event. For example, where the station represents a polygonal area, this element would describe the extent of this area. This element may also be used to describe a linear "station", for example, where sample collection occurs by trawling a water body. In this case, this data element might describe the length and direction of the trawl from the initial start point indicated by the station latitude and longitude elements.
3.4	Station Type Name XML Tag: StationType	The descriptive name for the type of environment to which the activities at the monitoring station are primarily targeted. It is intended to generally characterize the nature of the station. While this may change over time, for exchange purposes, it is expected that only the latest value will be interchanged with each data submission.	Y	A(20)	Valid values are: <ul style="list-style-type: none"> <li>- Estuary</li> <li>- Groundwater</li> <li>- Intertidal</li> <li>- Lake or Pond</li> <li>- Reservoir or Quarry</li> <li>- Land</li> <li>- Ocean</li> <li>- Riparian Zone</li> <li>- Source</li> <li>- Spring</li> <li>- Stream or River</li> <li>- Wetland</li> <li>- Other</li> </ul> These values represent a simplification of the list of values recommended by the EDSC RWQRCMA standards.

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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules
	<i>Station Location Descriptors</i>			
3.5	Station Location Descriptor Name XML Tag: LocationDescriptorName	N	A(100)	Multiple location descriptors may be provided for each station to describe its location using a variety of coding approaches as appropriate to the location and the needs and interests of the responsible organization. The specific types of codification or description provided will likely be defined by the trading partners through the establishment of a TPA. A context must be specified for each location descriptor that is provided.
3.6	Station Location Descriptor Context XML Tag: LocationDescriptorContext	c	A(30)	A context must be provided for each Station Location Descriptor that is specified. Valid values are: <ul style="list-style-type: none"> <li>- HUC</li> <li>- Waterbody</li> <li>- WRIA</li> <li>- Aquifer name</li> <li>- NRCS ID</li> <li>- Ecoregion</li> <li>- LLID</li> <li>- County</li> <li>- State</li> <li>- Congressional District</li> <li>- ZIP Code</li> <li>- Other</li> </ul>

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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules	
	<i>Location Information</i>				
3.7	Latitude Measure XML Tag: LatitudeMeasure	The measure of the angular distance on a meridian north or south of the equator in decimal degrees.	Y	N(8,6)	Derived from EDR Latitude/Longitude Data Standard. Will accommodate signed values. Example +78.123456
3.8	Longitude Measure XML Tag: LongitudeMeasure	The measure of the angular distance on a meridian east or west of the prime meridian in decimal degrees.	Y	N(9,6)	Derived from EDR Latitude/Longitude Data Standard. Will accommodate signed values. Example -123.456789
3.9	Horizontal Accuracy Measure XML Tag: HorizontalAccuracyMeasure	The measure of the accuracy (in meters) of the latitude and longitude coordinates.	N	N(6)	Derived from EDR Latitude/Longitude Data Standard.
3.10	Source Map Scale Number XML Tag: SourceMapScaleNumber	The number that represents the proportional distance on the ground for one unit of measure on a map or photo.	N	N(10)	Derived from EDR Latitude/Longitude Data Standard.
3.11	Coordinate Data Source Name XML Tag: CoordinateDataSourceName	The name of the party responsible for providing the latitude and longitude coordinates.	N	A(35)	Derived from EDR Latitude/Longitude Data Standard.
3.12	Horizontal Collection Method Text XML Tag: HorizontalCollectionMethodText	The method used to determine the latitude and longitude coordinates for a point on the earth.	Y	A(60)	Derived from EDR Latitude/Longitude Data Standard and FRS data flow XML schema definitions. Valid code values correspond to those enumerated for this data element in the FRS XML schema and are: ADDRESS MATCHING-BLOCK FACE ADDRESS MATCHING-DIGITIZED ADDRESS MATCHING-HOUSE NUMBER  *(continued next page)*

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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules
				ADDRESS MATCHING-NEAREST INTERSECTION ADDRESS MATCHING-OTHER ADDRESS MATCHING-PRIMARY NAME ADDRESS MATCHING-STREET CENTERLINE CENSUS BLOCK/GROUP-1990-CENTROID CENSUS BLOCK/TRACT-1990-CENTROID CENSUS BLOCK-1990-CENTROID CENSUS-OTHER CLASSICAL SURVEYING TECHNIQUES GPS - UNSPECIFIED GPS CARRIER PHASE KINEMATIC RELATIVE POSITION GPS CARRIER PHASE STATIC RELATIVE POSITION GPS CODE (PSEUDO RANGE) DIFFERENTIAL GPS CODE (PSEUDO RANGE) PRECISE POSITION GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA OFF) GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA ON) GPS, WITH CANADIAN ACTIVE CONTROL SYSTEM INTERPOLATION - DIGITAL MAP SRCE (TIGER) INTERPOLATION - SPOT INTERPOLATION -MSS INTERPOLATION -TM INTERPOLATION-MAP INTERPOLATION-OTHER *(continued next page)*

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
					INTERPOLATION-PHOTO INTERPOLATION-SATELLITE LORAN C PUBLIC LAND SURVEY - EIGHTH SECTION PUBLIC LAND SURVEY - FOOTING PUBLIC LAND SURVEY - SIXTEENTH SECTION PUBLIC LAND SURVEY-QUARTER SECTION PUBLIC LAND SURVEY-SECTION UNKNOWN ZIP CODE-CENTROID ZIP+2 CENTROID ZIP+4 CENTROID
3.13	Horizontal Reference Datum Name XML Tag: HorizontalReferenceDatumName	The code that represents the reference datum used in determining latitude and longitude coordinates. Can include the NAD27 North American Datum of 1927, the NAD83 North American Datum of 1983, the World Geodetic System of 1984, or other entries as applicable	Y	A(60)	Derived from EDR Latitude/Longitude Data Standard and FRS data flow XML schema definitions. Valid code values correspond to those enumerated for this data element in the FRS XML schema and are: NAD27 NAD83 WGS84 UNKNOWN
3.14	Horizontal Reference Point Text XML Tag: ReferencePointText	The place at which geographic coordinates were established. This element will be used to describe the point at the sampling site that is being located.	N	A(60)	Derived from EDR Latitude/Longitude Data Standard and FRS data flow XML schema definitions. Valid values correspond to those enumerated for this data element in the FRS XML schema and are: UNKNOWN PLANT ENTRANCE (GENERAL) OTHER PLANT ENTRANCE (PERSONNEL) PLANT ENTRANCE (FREIGHT) AIR RELEASE STACK  (*continued next page*)

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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules
				AIR RELEASE VENT STORAGE TANK WATER RELEASE PIPE LAGOON OR SETTLING POND LIQUID WASTE TREATMENT UNIT ATMOSPHERIC EMISSIONS TREATMENT UNIT SOLID WASTE TREATMENT/DISP. UNIT SOLID WASTE STORAGE AREA LOADING FACILITY LOADING AREA CENTROID PROCESS UNIT PROCESS UNIT AREA CENTROID ADMINISTRATIVE BUILDING FACILITY CENTROID NE CORNER OF LAND PARCEL SE CORNER OF LAND PARCEL NW CORNER OF LAND PARCEL SW CORNER OF LAND PARCEL CENTER OF FACILITY WELLHEAD PROTECTION AREA WATER MONITORING STATION INTAKE PIPE WELL AIR MONITORING STATION WATER WELL SPRING SOURCE WATER AREA POTENTIAL CONTAMINANT SOURCE SOURCE WATER PROTECTION AREA SLUDGE FIELD INCINERATOR EMERGENCY OVERFLOW COMBINED ANIMAL FEED OPERATION (CAFO)

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
3.15	Vertical Measure XML Tag: VerticalMeasure	The measure of the elevation of the station site above a reference datum.	N	N(10)	Derived from EDR Latitude/Longitude Data Standard. Will accommodate signed values.
3.16	Vertical Measure Unit Text XML Tag: VerticalMeasureUnitofMeasure	The code representing the name of the standard of measurement used to describe the elevation value.	c	A(10)	This element is required if an elevation measurement is provided.
3.17	Vertical Accuracy Measure XML Tag: VerticalAccuracyMeasure	The measure of the accuracy of the elevation measurement, expressed in the same units of measure used to quantify the Vertical Measure.	N	N(6)	Derived from EDR Latitude/Longitude Data Standard. This element is required if an elevation measurement is provided.
3.18	Vertical Collection Method Text XML Tag: VerticalCollectionMethodText	The code for the method used to establish the elevation or depth of the sampling site	c	A(60)	Derived from EDR Latitude/Longitude Data Standard and FRS data flow XML schema definitions. Valid code values correspond to those enumerated for this data element in the FRS XML schema and are: GPS CARRIER PHASE STATIC RELATIVE POSITION GPS CARRIER PHASE KINEMATIC RELATIVE POSITION GPS CODE (PSEUDO RANGE) DIFFERENTIAL GPS CODE (PSEUDO RANGE) PRECISE POSITION GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA OFF) GPS CODE (PSEUDO RANGE) STANDARD POSITION (SA ON) OTHER ALTIMETRY PRECISE LEVELING-BENCH MARK LEVELING-NON BENCH MARK CONTROL POINTS TRIGONOMETRIC LEVELING PHOTOGRAMMETRIC TOPOGRAPHIC MAP INTERPOLATION



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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
3.19	Vertical Reference Datum Name XML Tag: VerticalReferenceDatumName	The code for the reference datum used to determine the vertical measure	c	A(60)	Latitude/Longitude Data Standard and FRS data flow XML schema definitions. Valid code values correspond to those enumerated for this data element in the FRS XML schema and are: NAVD88 NGVD29 MEAN SEA-LEVEL LOCAL TIDAL DATUM OTHER
3.20	Vertical Reference Point Context Text XML Tag: VerticalReferencePointContextText	The place at which the vertical measurement was established, commonly Mean Sea Level. This element may also be used in special circumstances to describe for example, the tidal conditions at the time of measurement, such as mean low tide, or the point on a physical structure, such as the top of the well casing.	c	A(255)	This element is required if an elevation measurement is provided.
	<i>Well Construction Details</i>	<i>The template includes elements to allow the data provider to more fully describe the construction of a well that may be used for monitoring activities. By including the following elements, the template does not attempt to fully characterize the detailed components of a water well construction report or drill log, but instead enables the data provider to include limited but pertinent detail for well stations where this is desired and agreed by the trading partners through the relevant TPA.</i>			
3.21	Well Identifier XML Tag: WellIdentifier	Unique identifier assigned to the well by the monitoring or other accepted authority, for example, the Ecology well tag number.	c	A(15)	Required if the station is a well.
3.22	Well Identifier Context XML Tag: WellIdentifierContext	Describes the context in which the well identifier can be understood. For example, the well identifier used may be that assigned by Ecology or by some other agency, e.g. USGS.	c	A(30)	This element may be used by organizations sharing data through the Exchange, and the precise meaning of the data to be included in the element will be agreed by the Exchange partners during development of the Trading Partner Agreement. Required if a well identifier is provided.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
3.23	Well Depth at Completion Measure XML Tag: WellDepthCompletionMeasure	The measure of the total depth of the well upon completion of construction. This measurement will be relative to the vertical reference point for the given well station (see above).	N	N(5)	
3.24	Well Open Interval Type Text XML Tag: WellOpenIntervalType	Text describing the type of open interval in the well construction. These openings are permeable portions of the well casings or lining. Openings may be protected with screens, fractured rock, or other devices/materials.	N	A(60)	
3.25	Well Depth to Top of Open Interval Measure XML Tag: WellDepthTopOpenIntervalMeasure	The measure of the depth to the top of the open interval. This measurement will be relative to the vertical reference point for the given well station (see above).	N	N(5)	
3.26	Well Depth to Bottom of Open Interval Measure XML Tag: WellDepthBottomOpenIntervalMeasure	The measure of the depth to the bottom of the open interval. This measurement will be relative to the vertical reference point for the given well station (see above).	N	N(5)	
3.27	Well Depth Unit of Measure XML Tag: WellDepthUnitMeasureName	The unit for qualifying all well depth measurements.	c	A(10)	Required if a well depth at completion, well depth to top of open interval, or well depth to bottom of open interval measurement is provided.
3.28	Well Diameter Measure XML Tag: WellDiameterMeasure	The maximum diameter of well casing, or the borehole if uncased.	N	N(5)	
3.29	Well Diameter Unit of Measure XML Tag: WellDiameterUnitMeasureName	The code representing the name of the standard of measurement used for measuring the diameter of the well.	c	A(10)	Required if a well diameter measurement is provided.
3.30	Well Status XML Tag: WellStatus	Describes the current status of the well station. While this may change during the life of the well, this data element is intended to record only the latest known information about the well.	c	A(10)	Required if a well identifier is provided. Valid values proposed for the Exchange template are: - Active - Abandoned

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
3.31	Well Use XML Tag: WellUse	Describes the primary use of the well station. While this may change during the life of the well, this data element is intended to record only the latest known information about the well.	c	A(30)	<p>Required if a well identifier is provided.</p> <p>Valid values proposed for the Exchange template are:</p> <ul style="list-style-type: none"> <li>- Withdrawal of Water</li> <li>- Waste Injection - Non Specific</li> <li>- EPA Waste Injection: Class I</li> <li>- EPA Waste Injection: Class II</li> <li>- EPA Waste Injection: Class III</li> <li>- EPA Waste Injection: Class IV</li> <li>- EPA Waste Injection: Class V</li> <li>- Standby Emergency Supply</li> <li>- Test</li> <li>- Observation</li> <li>- Monitoring</li> <li>- Geothermal</li> <li>- Heat Reservoir</li> <li>- Drainage</li> <li>- Seismic</li> <li>- Oil or Gas</li> <li>- Mine</li> <li>- Recharge</li> <li>- Repressurization</li> <li>- Anode</li> <li>- Unused</li> <li>- Destroyed</li> <li>- Other</li> <li>- Unknown</li> </ul>

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
	<i>Station Contact Information</i>	<i>Data Elements describing the contact information for the station at which the monitoring was conducted. More than one organization may be listed as the "Station Contact" for the data associated with the specific station. Contact information is NOT required for a station.</i>			
3.32	Entity Identifier XML Tag: ContactEntityIdentifier	A number or code used to uniquely identify the individual or organization for reference purposes.	c	A(30)	Required when a station contact is provided. This element may be used by entities sharing data through the Exchange for reference purposes. The precise meaning of the data to be included in the element will be agreed by the Exchange partners during development of the Trading Partner Agreement. For example, two organizations may decide to use this field to exchange the relevant STORET identifier for the organization.
3.33	Organization Formal Name XML Tag: ContactOrganizationName	The legal, formal name and acronym of the organization that is the contact for the station where appropriate.	c	A(80)	Required where the Entity Type is not "individual".
3.34	Entity Type XML Tag: EntityType	Describes the general nature of the contact for the station for analysis purposes. This will indicate whether the contact is an individual or where the contact is an organization, it will describe the type of organization.	c	A(20)	Required when a station contact is provided. Valid values are: - Individual - Federal - Tribal - State or Provincial - Local - Public or Volunteer - Non-profit - Educational - Commercial - Other

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
3.35	Contact Name XML Tag: ContactIndividualName	The name of the individual who may be contacted for questions regarding the station where appropriate, or, where the station is managed by an organization, the name of the individual at that organization who may be contacted.	c	A(70)	Required when a station contact is provided. A contact name will always be required for each organization, although a generic title may be provided if a specific individual is not known.
3.36	Mailing Address XML Tag: MailingAddress	The address where a mail piece is intended to be delivered, including urban-style street address, rural route, and PO Box.	N	A(50)	The address information will apply to the individual defined as the primary contact person.
3.37	Mailing Address City Name XML Tag: MailingAddressCityName	The name of the city, town, or village where the mail is delivered.	N	A(30)	
3.38	Mailing Address State Name XML Tag: MailingAddressStateName	The name of the state or province where mail is delivered.	N	A(35)	The mailing country will be derived from the State information, where, for Canadian addresses, the Province code will be used.
3.39	Mailing Address ZIP Code/ International Postal Code XML Tag: MailingAddressZIPCode	The combination of the 5-digit Zone Improvement Plan (ZIP) code and the four-digit extension code (if available) that represents the geographic segment that is a subunit of the ZIP code, assigned by the U.S. Postal Service to a geographic location to facilitate mail delivery; or the postal zone specific to the country, other than the U.S., where the mail is delivered.	N	A(14)	
3.40	Telephone Number XML Tag: TelephoneNumber	The telephone number including area code and extension of the person who is the point of contact for the station.	c	A(15)	Required when a station contact is provided.
3.41	Electronic Address Text XML Tag: ElectronicMailAddressText	The text that describes an electronic mail address of the person who is the point of contact for the station.	N	A(100)	

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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules	
	<p><i>Station Binary Object(s)</i></p>	<p><i>Supports the inclusion of reference documents, images, photos, GIS data layers, and other objects within the data submission that pertain to the project. Multiple objects may be attached to the data submission for each station included in the submission.</i></p> <p><i>Object attachments will adhere to the technical standards specified by the Network Node Functional Specifications Version 1.1. In addition to the core NodeDocument object specified to be used for attached documents by the Specifications, a number of data elements have been used by the EDSC Laboratory Data Standard that is currently under development. While these two standards are not entirely consistent, the following data elements will be used for the Exchange DET. These elements incorporate the more comprehensive proposed EDSC standard and at the same time, include the NodeDocument object specified for this purpose by the Network technical standards.</i></p>			
3.42	<p>Binary Object File Name XML Tag: Name</p>	<p>Included in the NodeDocument object. The descriptive name for the object document, including file extension.</p>	c	A(255)	<p>Either the object itself must be provided or the URL. Where the object itself is provided, the file name, type and content elements must be provided.</p>
3.43	<p>Binary Object Type XML Tag: Type</p>	<p>Included in the NodeDocument object. Describes the general type of the document object. Values defined by the Network Node Functional Specification V.1.1. are: XML an XML document flat a flat text file bin a binary object ZIP a compressed file in ZIP format other an unspecified file format</p>	c	A(5)	<p>Either the object itself must be provided or the URL. Where the object itself is provided, the file name, type and content elements must be provided.</p>
3.44	<p>Binary Object Content XML Tag: Content</p>	<p>The value of this element is the actual document. If embedded in the XML payload, this will be base64 encoded. If the document is sent as an attachment, this element will be empty but with an href attribute of content ID referencing the attached document.</p>	c	base64 binary	<p>Either the object itself must be provided or the URL. Where the object itself is provided, the file name, type and content elements must be provided.</p>
3.45	<p>Binary Object URL XML Tag: BinaryObjectURL</p>	<p>Describes the location of the document where available on the Web.</p>	c	A(100)	<p>Either the object itself must be provided or the URL.</p>
3.46	<p>Binary Object Size XML Tag: BinaryObjectSize</p>	<p>Indicates the size in bytes of the binary object.</p>	N	N(14)	<p>May be useful for sender to determine how best to handle file.</p>
3.47	<p>Binary Object Title XML Tag: BinaryObjectTitleText</p>	<p>A name given to the resource.</p>	N	A(255)	<p>Example: "ABC Company NPDES Compliance Sampling Chain of Custody: 12/31/2003"</p>

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
3.48	Binary Object Creator XML Tag: BinaryObjectCreator	An entity primarily responsible for making the content of the resource.	N	A(100)	Examples of Creator include a person, an organization, or a service. Typically, the name of a Creator should be used to indicate the entity.
3.49	Binary Object Subject XML Tag: BinaryObjectSubject	A topic of the content of the resource.	N	A(100)	Typically, Subject will be expressed as keywords, key phrases, or classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme.
3.50	Binary Object Description XML Tag: BinaryObjectDescription	An account of the content of the resource.	N	A(2000)	Examples of Description include, but are not limited to, an abstract, table of contents, reference to a graphical representation of content or free-text account of the content.
3.51	Binary Object Publisher XML Tag: BinaryObjectPublisher	An entity responsible for making the resource available.	N	A(12)	Examples of Publisher include a person, an organization, or a service. Typically, the name of a Publisher should be used to indicate the entity.
3.52	Binary Object Contributor XML Tag: BinaryObjectContributor	An entity responsible for making contributions to the content of the resource.	N	A(50)	Examples of Contributor include a person, an organization, or a service. Typically, the name of a Contributor should be used to indicate the entity.
3.53	Binary Object Date XML Tag: BinaryObjectDate	A date of an event in the lifecycle of the resource.	N	Date	Typically, Date will be associated with the creation or availability of the resource. Recommended best practice for encoding the date value is defined in a profile of ISO 8601 [W3CDTF] and includes (among others) dates of the form YYYY-MM-DD.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
3.54	Binary Object Type XML Tag: BinaryObjectType	The nature or genre of the content of the resource.	N	A(100)	Type includes terms describing general categories, functions, genres, or aggregation levels for content. Recommended best practice is to select a value from a controlled vocabulary (for example, the DCMI Type Vocabulary [DCT]). To describe the physical or digital manifestation of the resource, use the Format element.
3.55	Binary Object Content Format XML Tag: BinaryObjectContentTypeText	The physical or digital manifestation of the resource.	N	A(100)	Typically, Format will include the media-type or dimensions of the resource. Format may be used to identify the software, hardware, or other equipment needed to display or operate the resource. Examples of dimensions include size and duration. Recommended best practice is to select a value from a controlled vocabulary (for example, the list of Internet Media Types [MIME] defining computer media formats). Examples: "image/jpeg", "text/html", "video/mpeg".
3.56	Binary Object Identifier XML Tag: BinaryObjectIdentifierText	An unambiguous reference to the resource within a given context.	N	A(12)	Recommended best practice is to identify the resource by means of a string or number conforming to a formal identification system. Formal identification systems include but are not limited to the Uniform Resource Identifier (URI) (including the Uniform Resource Locator (URL)), the Digital Object Identifier (DOI), and the International Standard Book Number (ISBN).



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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
3.57	Binary Object Source XML Tag: BinaryObjectSource	A reference to a resource from which the present resource is derived.	N	A(100)	The present resource may be derived from the Source resource in whole or in part. Recommended best practice is to identify the referenced resource by means of a string or number conforming to a formal identification system.
3.58	Binary Object Language XML Tag: BinaryObjectLanguage	A language of the intellectual content of the resource.	N	A(20)	Recommended best practice is to use RFC 3066 [RFC3066], which, in conjunction with ISO 639 [ISO639], defines two- and three-letter primary language tags with optional subtags. Examples include “en” or “eng” for English, “akk” for Akkadian and “en-GB” for English used in the United Kingdom.
3.59	Binary Object Relation XML Tag: BinaryObjectRelation	A reference to a related resource.	N	A(100)	Recommended best practice is to identify the referenced resource by means of a string or number conforming to a formal identification system.
3.60	Binary Object Coverage XML Tag: BinaryObjectCoverage	The extent or scope of the content of the resource.	N	A(100)	Typically, Coverage will include spatial location (a place name or geographic coordinates), temporal period (a period label, date, or date range), or jurisdiction (such as a named administrative entity). Recommended best practice is to select a value from a controlled vocabulary (for example, the Thesaurus of Geographic Names [TGN]) and to use, where appropriate, named places or time periods in preference to numeric identifiers such as sets of coordinates or date ranges.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
3.61	Binary Object Rights XML Tag: BinaryObjectRights	Information about rights held in and over the resource.	N	A(100)	Typically, Rights will contain a rights management statement for the resource, or reference a service providing such information. Rights information often encompasses Intellectual Property Rights (IPR), Copyright, and various Property Rights. If the Rights element is absent, no assumptions may be made about any rights held in or over the resource.
<b>4.0 Field Event Information</b>		<i>This group of data elements describes aspects of the field work that was conducted to gather a sample or samples of the environment or to perform some field assessment of the environment, at some location during a specific project. This assessment may include taking of samples for further analysis either in the field or in the laboratory, as well as recording of in situ measurements of the environment and observations of the field and sampling site conditions. All of the measurements and observations will be recorded as types of result.</i>			
<i>Field Event Details</i>					
4.1	Field Event Start Date XML Tag: FieldEventStartDate	The date and time on which the field activity was started.	Y	datetime	Date will be reported as 4-digit year, 2-digit month, and 2-digit day in YYYYMMDD format. Time will be reported as a 24-hour day with 2-digit hour, 2-digit minute and 2-digit second.
4.2	Field Event Start Time Zone XML Tag: FieldEventStartTimeZone	The time zone for the start time for the field activity.	Y	A(3)	
4.3	Field Event End Date XML Tag: FieldEventEndDate	The date and time when the field activity was completed.	Y	datetime	Date will be reported as 4-digit year, 2-digit month, and 2-digit day in YYYYMMDD format. Time will be reported as a 24-hour day with 2-digit hour, 2-digit minute and 2-digit second. Both the start date and the end date of the activity must be provided, but may be reported programmatically as the same value for many sampling events, e.g., grab samples.
4.4	Field Event End Time Zone XML Tag: FieldEventEndTimeZone	The time zone for the end time for the field activity.	Y	A(3)	

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
4.5	Field Activity Type Text XML Tag: FieldEventTypeText	Provides a description of the type of field activity that was conducted.	Y	A(80)	Valid values are: Routine In Situ Measurement/ Observation Replicate In Situ Measurement/Observation Sample -- Routine Sample Sample -- Field Blank Sample -- Field Replicate Sample -- Depletion Replicate Sample -- Integrated Time Series Sample -- Integrate Flow Proportioned Sample -- Integrate Horizontal Profile Sample -- Integrated Vertical Profile Sample -- Composite Without Parents Sample -- Positive Control Sample -- Negative Control Sample -- Grab Sample -- Confirmation Sample -- Repeat Sample -- Noncompliance Sample -- Other Sample -- Continuous Monitoring Routine Sample Sample -- Continuous Monitoring Field Replicate Sample Created from Sample Composite Sample with Parents  *(continued next page)*

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
					QC Sample -- Trip blank QC Sample -- Reagent Blank QC Sample -- Equipment Blank QC Sample -- Pre-preserved Blank QC Sample -- Post-preserved Blank QC Sample -- Field Spike QC Sample -- Field Blank QC Sample -- Reference Sample QC Sample -- Measurement Precision Sample QC Sample -- Blind Duplicate QC Sample -- Inter-lab split QC Sample -- Other
4.6	Sample Identification Text XML Tag: SampleIdentificationText	Text describing the unique name, number, or code assigned to identify the sample by the source organization or as agreed between the Exchange partners through the TPA.	N	A(12)	The data source may use this element to document whatever identifying information is appropriate for a sample.
4.7	Media Text XML Tag: MediaText	The environmental media that was assessed through sampling or other field activities at the monitoring site. The environmental material about which results are reported from either direct observation or collected samples. NOTE: For biological - tissue samples, the taxon being sampled can be provided at any taxonomic classification level (i.e., genus, family, etc.). For biological - population samples, the taxon can be provided at the level of the result value itself.	Y	A(30)	Valid values are: - Water - Sediment - Soil - Biological (tissue) - Biological (population) Further definition of the sample matrix or, in the case of biological sampling, the parts of the organism collected, have not been included in the Exchange template at this time.
4.8	Taxonomic Name XML Tag: BiologicalSystematicName	The name of the organism from which a tissue sample or field measurement was taken. This may be specified at any taxonomic level, for species or higher as known. Common names may also be provided. A context must be provided (see following data element) to indicate what type of naming standard is being used.	c	A(200)	Either a Media Taxonomic Name or a Media Taxonomic Identifier must be provided if the media sampled is "biological - tissue". This flexibility is intended to enable all Exchange partners to readily contribute information.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
4.9	Taxonomic Name Context XML Tag: BiologicalSystematicContextName	Describes the context for a taxonomic name. The context will indicate the name of the taxonomic classification system used to obtain the name provided in the "Media Taxonomic Name" element.	c	A(200)	Required if a taxonomic name is provided for the tissue media. Example contexts include, common name, ITIS - the Integrated Taxonomic Information System and ICTVdb - the International Committee on the Taxonomy of Viruses Database.
4.10	Taxonomic Identifier XML Tag: BiologicalSystematicIdentifier	A unique number that corresponds to the taxonomic name and which serves to uniquely describe the taxon being sampled or assessed in the environment.	c	A(15)	Either a Media Taxonomic Name or a Media Taxonomic Identifier must be provided if the media sampled is "biological - tissue". This flexibility is intended to enable all Exchange partners to readily contribute information.
4.11	Taxonomic Identifier Context XML Tag: BiologicalSystematicContextName	Describes the context for a taxonomic identifier. The context will indicate the name of the taxonomic classification system used to obtain the identifier provided in the "Media Taxonomic Identifier" element.	c	A(200)	Required if a taxonomic identifier is provided for the tissue media. Example contexts include, ITIS - the Integrated Taxonomic Information System and ICTVdb - the International Committee on the Taxonomy of Viruses Database.
4.12	Upper Depth of Sample/Field Activity XML Tag: FieldEventUpperDepthMeasure	A numerical measurement of the vertical location at which sample collection or field measurement began. For example, this might be used to describe the start point for a measurement or collection activity taking place throughout a portion of the water column.	N	N(9)	Elevation of sample can be derived from this if surface elevation is provided for the station. The reference point for the measurement will be taken to be that described for the elevation of the station unless additional comments are provided. If no depth is provided, it will be assumed that the activity took place at the elevation specified for the station itself.  Where the activity takes place at a single depth and not over a range, only the upper depth measurement will be specified.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
4.13	Lower Depth of Sample/Field Activity XML Tag: FieldEventLowerDepthMeasure	A numerical measurement of the vertical location at which sample collection or field measurement ended.	N	N(9)	Where the activity takes place at a single depth and not over a range, only the upper depth measurement will be specified.
4.14	Depth of Sample/Field Activity Unit of Measure XML Tag: FieldEventDepthUnitMeasureName	The code representing the name of the standard of measurement used for sample depth/altitude.	c	A(10)	Required when a depth of sample measurement is provided.
4.15	Depth of Sample/Field Activity Comment XML Tag: FieldEventDepthComment	Describes additional contextual detail about the depth measurement, to enable correct interpretation of any result values. For example, tidal condition, the degree of accuracy of the measurements.	N	A(1999)	
4.16	Field Notes XML Tag: FieldEventNotes	Describes the general conditions at the monitoring site when the field activity or sampling took place.	N	A(1999)	This element would be used to describe pertinent information about the activity location that would be important to someone reviewing the result information. For example, "A rusty barrel was found up river from the station at the time of the sampling event".
<i>Sampling Methods</i>					
4.17	Sample Collection Method Code XML Tag: MethodCode	Where a documented sample collection method has been employed, this element will be used to capture the identifying code for that method. This data element will enable the data provider to indicate the documented method that was employed during the field sample collection. In many cases, the sample collection method will best be described in the freeform data element "Sample Collection Method Description" below.	c	A(30)	Either "Sample Collection Method Code" or "Sample Collection Method Description" must be provided.
4.18	Sample Collection Method Context XML Tag: MethodContext	Describes the context for a code used to describe a sample collection method, such as the classification system used, e.g., EPA.	c	A(255)	Context is required when a code has been provided to describe the sample collection method employed.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
4.19	Sample Collection Method Description XML Tag: MethodDescription	Provides a description of the sample collection method employed. This may further describe a documented method already characterized using the "Sample Collection Method Code" element, or may provide details of a more informal process that may have been employed.	c	A(1999)	Either "Sample Collection Method Code" or "Sample Collection Method Description" must be provided. Example descriptions might include: (a) Surface Water. Values: (i) Grab (ii) Pump (iii) Collection filter - positive charge (iv) Collection filter - negative charge (v) In situ monitor (probe) (vi) Composite -- (A) Flow weighted (B) Proportional (C) Cross sectional (D) Integrated Depth (vii) Other entries as applicable (b) Ground Water (i) High flow submersible pump (specify water flow rate) (ii) Low flow submersible pump (specify water flow rate) (iii) Bladder pump (iv) Bailer (v) Other entries as applicable (c) Precipitation/Atmospheric (i) Grab (ii) Pump (iii) Collection filter - positive charge (iv) Collection filter - negative charge (v) Continuous (specify water flow rate)
4.20	Sample Preparation Method Code XML Tag: Method Code	Where a documented sample preparation method has been employed, this element will be used to capture the identifying code for that method. This element may be used to accommodate multiple preparation methods by reference to a Standard Operating Procedure where appropriate.	N	A(30)	This data element will enable the data provider to indicate the documented method that was employed during the sample preparation in the field. In many cases, the sample preparation method will best be described in the freeform data element "Sample Preparation Method Description" below.
4.21	Sample Preparation Method Context XML Tag: MethodContext	Describes the context for a code used to describe a sample preparation method, such as the classification system used, e.g., EPA.	c	A(255)	Context is required where a code is provided to describe the sample preparation method employed.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
4.22	Sample Preparation Method Description XML Tag: MethodDescription	Provides a description of the sample preparation method employed. This may further describe a documented method already characterized using the "Sample Preparation Method Code" element, or may provide details of a more informal process that may have been employed.	N	A(1999)	Possible descriptive information for filtration may include whether all, none, or a specific fraction of the sample was filtered; whether the sample was filtered in the field or in the lab, what type of filter was used, and maximum vacuum (if applicable). Possible descriptive information for homogenization may include sub-sampling, splitting, sieving, mixing, and/or grinding protocols. Possible descriptive information for chemical surrogate addition may include type and amount of surrogate added.
4.23	Sample Preservation Method Code XML Tag: MethodCode	Where a documented sample preservation method has been employed, this element will be used to capture the identifying code for that method. This element may be used to accommodate multiple preservation methods by reference to a Standard Operating Procedure where appropriate.	c	A(30)	Either "Sample Preservation Method Code" or "Sample Preservation Method Description" must be provided. This data element will enable the data provider to indicate the documented method that was employed during the sample preservation in the field. In many cases, the sample preservation method will best be described in the freeform data element "Sample Preservation Method Description" below.
4.24	Sample Preservation Method Context XML Tag: MethodContext	Describes the context for a code used to describe a sample preservation method, such as the classification system used, e.g., EPA.	c	A(255)	Context is required where a code is provided to describe the sample preservation method employed.



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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
4.25	Sample Preservation Method Description XML Tag: MethodDescription	Provides a description of the sample preservation method employed. This may further describe a documented method already characterized using the "Sample Preservation Method Code" element, or may provide details of a more informal process that may have been employed.	c	A(1999)	<p>Either "Sample Preservation Method Code" or "Sample Preservation Method Description" must be provided.</p> <p>Possible descriptive information for chemical preservation may include:                      (a) Chemical added. Values: (1) Acidification (2) Antioxidant (3) Mercuric oxide (4) Other (comment field)                      (b) None                      (c) Other entries as applicable</p> <p>Possible descriptive information for temperature preservation                      (a) Wet Ice (4 deg C)                      (b) Dry Ice (-78.5 deg C)                      (c) Cold Packs (4 deg C)                      (d) Refrigerated (4 deg C)                      (e) Frozen (0 deg C)                      (f) Frozen (-20 deg C)                      (g) Frozen (-50 deg C)                      (h) Freeze Dried                      (i) None</p>

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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules
	<p><i>Sampling Entity Contact Information</i></p>	<p><i>Data Elements describing the contact information for the individual or organization that conducted the field sampling or data collection activity through which the data was collected. More than one organization may be listed as the "Sampling Entity" for the data associated with the given sampling event. A "Sampling Entity" contact is NOT required.</i></p>		
4.26	<p>Entity Identifier XML Tag: ContactEntityIdentifier</p>	<p>A number or code used to uniquely identify the individual or organization for reference purposes.</p>	c	<p>A(30) Required when a sampling contact is provided. This element may be used by entities sharing data through the Exchange for reference purposes. The precise meaning of the data to be included in the element will be agreed by the Exchange partners during development of the Trading Partner Agreement. For example, two organizations may decide to use this field to exchange the relevant STORET identifier for the organization.</p>
4.27	<p>Organization Formal Name XML Tag: ContactOrganizationName</p>	<p>The legal, formal name and acronym of the organization that is the contact for the sampling event where appropriate.</p>	c	<p>A(80) Required where the Entity Type is not "individual".</p>
4.28	<p>Entity Type XML Tag: EntityType</p>	<p>Describes the general nature of the contact for the station for analysis purposes. This will indicate whether the contact is an individual or where the contact is an organization, it will describe the type of organization.</p>	c	<p>A(20) Required when a sampling contact is provided. Valid values are: - Individual - Federal - Tribal - State or Provincial - Local - Public or Volunteer - Non-profit - Educational - Commercial - Other</p>

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
4.29	Contact Name XML Tag: ContactIndividualName	The name of the individual who may be contacted for questions regarding the sampling event where appropriate, or, where the sampling event was conducted by an organization, the name of the individual at that organization who may be contacted.	c	A(70)	Required when a sampling contact is provided. A contact name will always be required for each organization, although a generic title may be provided if a specific individual is not known.
4.30	Mailing Address XML Tag: MailingAddress	The address where a mail piece is intended to be delivered, including urban-style street address, rural route, and PO Box.	N	A(50)	The address information will apply to the individual defined as the primary contact person.
4.31	Mailing Address City Name XML Tag: MailingAddressCityName	The name of the city, town, or village where the mail is delivered.	N	A(30)	
4.32	Mailing Address State Name XML Tag: MailingAddressStateName	The name of the state or province where mail is delivered.	N	A(35)	The mailing country will be derived from the State information, where, for Canadian addresses, the Province code will be used.
4.33	Mailing Address ZIP Code/ International Postal Code XML Tag: MailingAddressZIPCode	The combination of the 5-digit Zone Improvement Plan (ZIP) code and the four-digit extension code (if available) that represents the geographic segment that is a subunit of the ZIP code, assigned by the U.S. Postal Service to a geographic location to facilitate mail delivery; or the postal zone specific to the country, other than the U.S., where the mail is delivered.	N	A(14)	
4.34	Telephone Number XML Tag: TelephoneNumber	The telephone number including area code and extension of the person who is the point of contact for the sampling event.	c	A(15)	Required when a sampling contact is provided.
4.35	Electronic Address Text XML Tag: ElectronicMailAddressText	The text that describes an electronic mail address of the person who is the point of contact for the sampling event.	N	A(100)	

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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules
	<p><i>Field Event Binary Object(s)</i></p>			
4.36	<p>Binary Object File Name XML Tag: Name</p>	c	A(255)	<p>Either the object itself must be provided or the URL. Where the object itself is provided, the file name, type and content elements must be provided.</p>
4.37	<p>Binary Object Type XML Tag: Type</p>	c	A(5)	<p>Either the object itself must be provided or the URL. Where the object itself is provided, the file name, type and content elements must be provided.</p>
4.38	<p>Binary Object Content XML Tag: Content</p>	c	base64 binary	<p>Either the object itself must be provided or the URL. Where the object itself is provided, the file name, type and content elements must be provided.</p>
4.39	<p>Binary Object URL XML Tag: BinaryObjectURL</p>	c	A(100)	<p>Either the object itself must be provided or the URL.</p>
4.40	<p>Binary Object Size XML Tag: BinaryObjectSize</p>	N	N(14)	<p>May be useful for sender to determine how best to handle file.</p>

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
4.41	Binary Object Title XML Tag: BinaryObjectTitleText	A name given to the resource.	N	A(255)	Example: "ABC Company NPDES Compliance Sampling Chain of Custody: 12/31/2003"
4.42	Binary Object Creator XML Tag: BinaryObjectCreator	An entity primarily responsible for making the content of the resource.	N	A(100)	Examples of Creator include a person, an organization, or a service. Typically, the name of a Creator should be used to indicate the entity.
4.43	Binary Object Subject XML Tag: BinaryObjectSubject	A topic of the content of the resource.	N	A(100)	Typically, Subject will be expressed as keywords, key phrases, or classification codes that describe a topic of the resource. Recommended best practice is to select a value from a controlled vocabulary or formal classification scheme.
4.44	Binary Object Description XML Tag: BinaryObjectDescription	An account of the content of the resource.	N	A(2000)	Examples of Description include, but are not limited to, an abstract, table of contents, reference to a graphical representation of content or free-text account of the content.
4.45	Binary Object Publisher XML Tag: BinaryObjectPublisher	An entity responsible for making the resource available.	N	A(12)	Examples of Publisher include a person, an organization, or a service. Typically, the name of a Publisher should be used to indicate the entity.
4.46	Binary Object Contributor XML Tag: BinaryObjectContributor	An entity responsible for making contributions to the content of the resource.	N	A(50)	Examples of Contributor include a person, an organization, or a service. Typically, the name of a Contributor should be used to indicate the entity.
4.47	Binary Object Date XML Tag: BinaryObjectDate	A date of an event in the lifecycle of the resource.	N	Date	Typically, Date will be associated with the creation or availability of the resource. Recommended best practice for encoding the date value is defined in a profile of ISO 8601 [W3CDTF] and includes (among others) dates of the form YYYY-MM-DD.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
4.48	Binary Object Type XML Tag: BinaryObjectType	The nature or genre of the content of the resource.	N	A(100)	Type includes terms describing general categories, functions, genres, or aggregation levels for content. Recommended best practice is to select a value from a controlled vocabulary (for example, the DCMI Type Vocabulary [DCT]). To describe the physical or digital manifestation of the resource, use the Format element.
4.49	Binary Object Content Format XML Tag: BinaryObjectContentTypeText	The physical or digital manifestation of the resource.	N	A(100)	Typically, Format will include the media-type or dimensions of the resource. Format may be used to identify the software, hardware, or other equipment needed to display or operate the resource. Examples of dimensions include size and duration. Recommended best practice is to select a value from a controlled vocabulary (for example, the list of Internet Media Types [MIME] defining computer media formats). Examples: "image/jpeg", "text/html", "video/mpeg".
4.50	Binary Object Identifier XML Tag: BinaryObjectIdentifierText	An unambiguous reference to the resource within a given context.	N	A(12)	Recommended best practice is to identify the resource by means of a string or number conforming to a formal identification system. Formal identification systems include but are not limited to the Uniform Resource Identifier (URI) (including the Uniform Resource Locator (URL)), the Digital Object Identifier (DOI), and the International Standard Book Number (ISBN).

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
4.51	Binary Object Source XML Tag: BinaryObjectSource	A reference to a resource from which the present resource is derived.	N	A(100)	The present resource may be derived from the Source resource in whole or in part. Recommended best practice is to identify the referenced resource by means of a string or number conforming to a formal identification system.
4.52	Binary Object Language XML Tag: BinaryObjectLanguage	A language of the intellectual content of the resource.	N	A(20)	Recommended best practice is to use RFC 3066 [RFC3066], which, in conjunction with ISO 639 [ISO639], defines two- and three-letter primary language tags with optional subtags. Examples include “en” or “eng” for English, “akk” for Akkadian and “en-GB” for English used in the United Kingdom.
4.53	Binary Object Relation XML Tag: BinaryObjectRelation	A reference to a related resource.	N	A(100)	Recommended best practice is to identify the referenced resource by means of a string or number conforming to a formal identification system.
4.54	Binary Object Coverage XML Tag: BinaryObjectCoverage	The extent or scope of the content of the resource.	N	A(100)	Typically, Coverage will include spatial location (a place name or geographic coordinates), temporal period (a period label, date, or date range), or jurisdiction (such as a named administrative entity). Recommended best practice is to select a value from a controlled vocabulary (for example, the Thesaurus of Geographic Names [TGN]) and to use, where appropriate, named places or time periods in preference to numeric identifiers such as sets of coordinates or date ranges.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
4.55	Binary Object Rights XML Tag: BinaryObjectRights	Information about rights held in and over the resource.	N	A(100)	Typically, Rights will contain a rights management statement for the resource, or reference a service providing such information. Rights information often encompasses Intellectual Property Rights (IPR), Copyright, and various Property Rights. If the Rights element is absent, no assumptions may be made about any rights held in or over the resource.
<b>5.0 Result Information</b>		<p><i>These data elements describe the analytical or measured value of some characteristic of the environment being monitored.</i></p> <p><i>Both numeric and textual result values may be provided, each described by a characteristic.</i></p> <p><i>NOTE: The characteristics that may be reported will include measurements of the water level, well purge and discharge rates, sample temperature and surface to bottom depths for surface water and groundwater measurements. These are explicit attributes under the EDSC RWQRCMA Standard but will vary from field event to field event, and are therefore proposed to be represented in the Exchange template as variable result values.</i></p>			
5.1	Result Value XML Tag: ResultValueMeasure	Reportable numerical/textual measure of the result for the chemical or microbiological analyte, or other characteristic, being analyzed. This element may be used to record both simple numeric values such as the concentration of a given analyte in a sample, as well as more descriptive textual values such as a field observation concerning the site conditions at the time of sampling.	Y	A(1999)	For numeric values, this field should not include qualifiers such as "less than". This information should be included in the Result Qualifier element.
5.2	Result Value Significant Digits Number XML Tag: ResultValueSignificantDigitsNumber	For a numeric result value, will optionally indicate the number of significant digits to which the result value was reported.	N	N(2)	
5.3	Result Value Unit of Measure Name XML Tag: ResultUnitMeasureName	The code representing the name of the standard of measurement used for reporting the numerical measure of an analysis (e.g., g/L, pCi/L, CFU/100mL, etc.).	Y	A(10)	



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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
5.4	Result Qualifier XML Tag: ResultQualifier	Provides a description of certain result values that require additional qualification. For example, "approximately", "less than", or "greater than".	N	A(255)	
5.5	Analyte Name XML Tag: AnalyteName	The name assigned to a chemical, microbiological or radiological substance or feature that describes it in terms of its molecular composition or other characteristic.	Y	A(255)	The naming or identification system to be used for a given data submission will be agreed by the Exchange partners through the TPA. This data element will accommodate both raw and derived data, for example, both raw temperature measurements and daily average temperatures.
5.6	Analyte Name Context Name XML Tag: AnalyteContextName	The name of the classification system used to assign a systematic name to an analyte. For example, Chemical Abstract Service (CAS) index name, EPA Chemical Registry Name, STORET Characteristic Name.	Y	A(255)	Required if an Analyte Name is provided.
5.7	Analyte Identifier XML Tag: AnalyteIdentifier	The unique number assigned to the analyte. If the analyte is a chemical, the receiving system must be able to access and use other identifying information (CAS number, systematic name and EPA chemical registry name) linked to the EPA Chemical Internal tracking Number.	N	A(30)	
5.8	Analyte Identifier Context Name XML Tag: AnalyteContextName	The name of the classification system used to assign a systematic name to an analyte identifier. For example, EPA Chemical Internal Tracking Number, CAS number, EPA Identification Number, STORET number.	c	A(255)	Required if an Analyte Identifier is provided.
5.9	Taxonomic Name XML Tag: BiologicalSystematicName	The name of the organism for which the field measurement determined for population abundance determination. This may be specified at any taxonomic level, for species or higher as known. Common names may also be provided.	N	A(200)	The naming or identification system to be used for a given data submission will be agreed by the Exchange partners through the TPA.
5.10	Taxonomic Name Context XML Tag: BiologicalSystematicContextName	Describes the context for a taxonomic name. The context will indicate the name of the taxonomic classification system used to obtain the name provided in the "Media Taxonomic Name" element. For example, Linnaeus, Smith, ITIS.	c	A(200)	Required if a Taxonomic Name is provided.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
5.11	Taxonomic Identifier XML Tag: BiologicalSystematicIdentifier	A unique number that corresponds to the media name and which serves to uniquely describe the taxon being assessed in the sample.	N	A(15)	
5.12	Taxonomic Identifier Context XML Tag: BiologicalSystematicContextName	Describes the context for a taxonomic identifier. The context will indicate the name of the taxonomic classification system used to obtain the identifier provided in the "Media Taxonomic Identifier" element. For example, ITIS Taxonomic Serial Number, ICTVdB Taxon Identifier, EPA Biological Identification Number.	c	A(200)	Required if a Taxonomic Identifier is provided.
5.13	Result Quality Assessment XML Tag: ResultQualityAssessment	A general assessment of the quality of the monitoring result represented.	Y	A(255)	The following code values (exclusive of information in parentheses) will be allowed by the Exchange: A - Known good quality (meets established QA/QC criteria) B - Known suspect quality (Data may not meet established QC but is within marginal acceptance criteria or data value may be accurate, however controls used to measure Data Quality Objective elements failed i.e. batch failed to meet blank QC limit.) C - Known unacceptable quality (Values are discarded (Void) typically due to analytical failure.) D - Sample collection failure (No sample collected or no reportable results, typically due to sampling failure.) E - Unknown quality (No QA information is available, data could be valid however there is no evidence to prove either way (Educational Only, Very Questionable/Poor QA/QC)) F - Good quality non-representative sampling (i.e., results from probe in stream indicated really high temperatures, but it was because a forest fire occurred).

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
5.14	Result Status XML Tag: ResultStatus	Indicates whether the result value is in a confirmed or final state or is still a preliminary value pending further quality assurance checks.	Y	A(255)	The following code values will be allowed by the Exchange: Preliminary – data has not been quality assured Final – data has been quality assured
5.15	Availability Description XML Tag: ResultAvailabilityDescription	Provides a general indication of what access can be applied to this result information. This would be used by the Exchange trading partners to describe the sensitivity of the information and what kind of distribution restrictions there may be.	Y	A(255)	The following code values will be allowed by the Exchange: Routine – No restrictions Agreement - Restricted by agreement between partners Civil – Restricted due to ongoing civil enforcement action Criminal – Restricted due to ongoing criminal enforcement action
<b>6.0 Sample Analysis Information</b>		<i>These data elements identify the analysis and quality control parameters for the result value. Only a limited number of QA/QC-related data elements are included in this template, on the grounds that more detailed QA/QC information is only indirectly relevant to the result itself and that this information can be obtained from the laboratory directly if required.</i>			
6.1	Analytical Method Number XML Tag: MethodNumber	The number or code describing the analytical method used:	c	A(30)	Either a formal method code or number and context must be provided or where such a formal code is not available, a description must be provided.
6.2	Analytical Method Context XML Tag: MethodContext	Describes the context for the number or code used to describe a the analytical method, such as the classification system used, e.g., EPA.	c	A(255)	Required when a method number is provided. Possible values for the Exchange include: - EPA - ASTM - SM - Other methods as applicable
6.3	Analytical Method Description XML Tag: MethodDescription	Provides a description of the analytical method employed. This may further describe a formal method already characterized using the "Analytical Method Code" element, or may provide details of a more informal process that may have been employed.	c	A(1999)	Either a formal method code or number and context must be provided or where such a formal code is not available, a description must be provided.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
6.4	Detection / Quantitation Level Measure XML Tag: DetectionQuantitationLevelMeasure	The measure that describes the quantity of analyte below which the sample analysis equipment will not detect the analyte accurately. If the lowest numerical value that a laboratory can report reliably for a test result based on the laboratory's experience with the method and equipment is different than the Detection Limit Measure and set by Statute or Regulation, then it should be reported as the Regulatory Reporting Level.	N	N(14)	More than one set of detection limit information may be provided for a given analytical result.
6.5	Detection / Quantitation Level Unit of Measure Name XML Tag: DetectionQuantitationLevelUnitMeasureName	The code representing the name of the standard of measurement used for the quantity of analyte below which the sample analysis equipment will not detect the analyte accurately. Values include: g/L, pCi/L, CFU/mL, etc	c	A(10)	Required if a Detection Level Measure is provided.
6.6	Detection / Quantitation Level Type XML Tag: DetectionQuantitationLevelTypeText	Text describing the type of detection level used in the analysis of a chemical constituent.	c	A(60)	Required if a Detection Level Measure is provided. Possible values for the Exchange include: - Instrument detection level - Method detection level - Estimated detection level - Practical quantitation limit - Limit of detection - Long term method detection level - Drinking Water Maximum Contaminant Level - Water quality standard or criteria - Alternate concentration level - Other
6.7	QA/QC Exception Indicator XML Tag: QAQCExceptionIndicator	A flag indicating an exception to the stipulated analytical procedure used to generate the result.	Y	boolean	Will simply indicate through "true" or "false" values, whether an exception was identified.

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
6.8	QA/QC Exception Comment Text XML Tag: QAQCExceptionCommentText	Text describing the reasons for the QA/QC exception flag being set to Y. Where multiple exceptions were encountered for the same analysis result, these will all be combined into this description.	c	A(1999)	This will be required if the "QA/QC Exception Indicator" data element is "Y". Some possible explanations might include the following, although this is not to be considered a selection list. - Analyzed past holding time - Dual quantification difference > 40% RPD - Estimated value, quantification doesn't meet SOP criteria - Duplicate injection precision not met - Spike recovery outside of control limits - Spike out of calibration range - Other
<i>Laboratory Contact Information</i>		<i>Data Elements describing the contact information for the laboratory that conducted the analysis of a field sample. Only one organization may be listed as the "Laboratory" for the result data. A "Laboratory" contact is NOT required.</i>			
6.9	Entity Identifier XML Tag: ContactEntityIdentifier	A number or code used to uniquely identify the individual or organization for reference purposes.	c	A(30)	Required when a laboratory contact is provided. This element may be used by entities sharing data through the Exchange for reference purposes. The precise meaning of the data to be included in the element will be agreed by the Exchange partners during development of the Trading Partner Agreement. For example, two organizations may decide to use this field to exchange the relevant STORET identifier for the organization.
6.10	Organization Formal Name XML Tag: ContactOrganizationName	The legal, formal name and acronym of the organization that is the contact for the laboratory where appropriate.	c	A(80)	Required where the Entity Type is not "individual".

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
6.11	Entity Type XML Tag: EntityType	Describes the general nature of the contact for the station for analysis purposes. This will indicate whether the contact is an individual or where the contact is an organization, it will describe the type of organization.	c	A(20)	Required when a laboratory contact is provided. Valid values are: - Individual - Federal - Tribal - State or Provincial - Local - Public or Volunteer - Non-profit - Educational - Commercial - Other
6.12	Contact Name XML Tag: ContactIndividualName	The name of the individual who may be contacted for questions regarding the laboratory where appropriate, or, where the laboratory was conducted by an organization, the name of the individual at that organization who may be contacted.	c	A(70)	Required when a laboratory contact is provided. A contact name will always be required for each organization, although a generic title may be provided if a specific individual is not known.
6.13	Mailing Address XML Tag: MailingAddress	The address where a mail piece is intended to be delivered, including urban-style street address, rural route, and PO Box.	N	A(50)	The address information will apply to the individual defined as the primary contact person.
6.14	Mailing Address City Name XML Tag: MailingAddressCityName	The name of the city, town, or village where the mail is delivered.	N	A(30)	
6.15	Mailing Address State Name XML Tag: MailingAddressStateName	The name of the state or province where mail is delivered.	N	A(35)	The mailing country will be derived from the State information, where, for Canadian addresses, the Province code will be used.
6.16	Mailing Address ZIP Code/ International Postal Code XML Tag: MailingAddressZIPCode	The combination of the 5-digit Zone Improvement Plan (ZIP) code and the four-digit extension code (if available) that represents the geographic segment that is a subunit of the ZIP code, assigned by the U.S. Postal Service to a geographic location to facilitate mail delivery; or the postal zone specific to the country, other than the U.S., where the mail is delivered.	N	A(14)	

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
6.17	Telephone Number XML Tag: TelephoneNumber	The telephone number including area code and extension of the person who is the point of contact for the laboratory.	c	A(15)	Required when a laboratory contact is provided.
6.18	Electronic Address Text XML Tag: ElectronicMailAddressText	The text that describes an electronic mail address of the person who is the point of contact for the laboratory.	N	A(100)	

## Data Catalog DET

The following table describes each of the data elements that make up the proposed metadata schema. Many of these elements also appear in the Exchange DET described in the previous section. They are repeated in this metadata schema, since they serve to provide overall, high-level descriptive information about the data contained in the relevant data source. This DET replaces the previous Metadata Registry DET.

Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
<b>1.0 Providing Organization Information</b>		<i>These elements identify the organization that is making the data available to the Exchange. The providing organization will be used to identify any information passed across the Exchange.</i>			
1.1	Providing Organization Identifier XML Tag: ProvidingOrganizationIdentifier	A number or code used to uniquely identify the organization for reference purposes.	Y	A(30)	This must be unique to each organization providing data through the Exchange for reference purposes. This identifier will be assigned by the Data Catalog Administrator.
1.2	Providing Organization Name XML Tag: ProvidingOrganizationName	The legal, formal name and acronym of the organization that is providing the data being exchanged. This may represent the agency as a whole or some unit of the agency as deemed appropriate by the organization.	Y	A(80)	
1.3	Providing Organization Type XML Tag: EntityType	Describes the categorization of the organization for analysis purposes.	Y	A(20)	Valid values are: - Federal - Tribal - State or Provincial - Local - Public or Volunteer - Non-profit - Educational - Commercial - Other



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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
1.4	Providing Organization Contact Name XML Tag: ProvidingOrganizationContactName	The name of the individual at the organization who may be contacted for questions regarding the data or the data exchange submission. This may be the project lead for the data collection, the agency data manager or another individual as deemed appropriate by the organization depending on the data being exchanged.	Y	A(70)	A contact name will always be required for each organization, although a generic title may be provided if a specific individual is not known.
1.5	Mailing Address XML Tag: MailingAddress	The address where a mail piece is intended to be delivered, including urban-style street address, rural route, and PO Box.	N	A(50)	The address information will apply to the individual at the organization defined as the primary contact person.
1.6	Mailing Address City Name XML Tag: MailingAddressCityName	The name of the city, town, or village where the mail is delivered.	N	A(30)	
1.7	Mailing Address State Name XML Tag: MailingAddressStateName	The name of the state or province where mail is delivered.	N	A(35)	The mailing country will be derived from the State information, where, for Canadian addresses, the Province code will be used.
1.8	Mailing Address ZIP Code/ International Postal Code XML Tag: MailingAddressZIPCode	The combination of the 5-digit Zone Improvement Plan (ZIP) code and the four-digit extension code (if available) that represents the geographic segment that is a subunit of the ZIP code, assigned by the U.S. Postal Service to a geographic location to facilitate mail delivery; or the postal zone specific to the country, other than the U.S., where the mail is delivered.	N	A(14)	
1.9	Telephone Number XML Tag: TelephoneNumber	The telephone number including area code and extension of the person who is the point of contact for the organization.	Y	A(15)	
1.10	Electronic Address Text XML Tag: ElectronicMailAddressText	The text that describes an electronic mail address of the person who is the point of contact for the organization.	Y	A(100)	
1.11	Providing Organization Web URL XML Tag: ProvidingOrganizationURL	The text that describes a web address of the organization that is providing the data being exchanged. This web address may represent the home page of the organization, program, project, or other website as appropriate.	N	A(100)	
<i>Data Access Information</i>		<i>These data elements describe access to data sources available to the Exchange.</i>			
1.12	Data Source Name XML Tag: DataSourceName	The name by which the data source is commonly known.	Y	A(60)	Examples: "Washington Ecology EIM Database", "Exchange Host Database".

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
1.13	Data Source Access Method XML Tag: DataSourceAccessMethod	Describes the method by which the data set may be accessed.	Y	A(10)	Valid values are: - Node - Document - On Request
1.14	Data Source Location XML Tag: DataSourceLocation	Provides the Internet address at which the data source is located.	c	A(255)	This will be required when the Data Source Access Method is "Node" or "Document". For node-based data sources, this data element will provide the location at which the relevant node's Web services can be identified as the first step in accessing the data itself.
1.15	Availability Description XML Tag: AvailabilityDescription	Provides a general indication of what access can be applied to this result information. This would be used by the Exchange trading partners to describe the sensitivity of the information and what kind of distribution restrictions there may be.	N	A(255)	
1.16	Refresh Date XML Tag: RefreshDate	Date on which the metadata registry record for this data source was last updated.	Y	D(8)	Will be generated by Data Catalog upon data submission. Will be reported as 4-digit year, 2-digit month, and 2-digit day in YYYYMMDD format.
<b>2.0 Project Information</b>		For each providing organization, the Data Catalog will include summary details of each of the projects available to support search capabilities.			
2.1	Project Identifier XML Tag: ProjectIdentifier	A unique identifier given to the project by the providing organization. This code may conform to an information system standard or some other identifying reference scheme. In association with the identifier ascribed to the providing organization, this identifier will serve to uniquely identify a given project.	Y	A(30)	This element may be used by organizations sharing data through the Exchange for reference purposes.
2.2	Project Name XML Tag: ProjectName	The general name used by the providing organization for the monitoring project under which the data was collected. This may be the formal name used to describe the project for budgetary purpose, or some other name determined as appropriate by the project data source themselves.	Y	A(255)	

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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules	
2.3	Project Start Date XML Tag: ProjectStartDate	Y	date	Will be reported as 4-digit year, 2-digit month, and 2-digit day in YYYYMMDD format.	
2.4	Project End Date XML Tag: ProjectEndDate	N	date	Will be reported as 4-digit year, 2-digit month, and 2-digit day in YYYYMMDD format.	
2.5	Project Organization Formal Name XML Tag: ContactOrganizationName	Y	A(80)	For the purpose of the Data Catalog, only the Project Organization designated as the "Primary Data Source" will be provided.	
<b>3.0 Location Information</b>		For each project supplied, the Data Catalog will include summary details of each of the stations used by that project. This will support search capabilities.			
3.1	Station Identifier XML Tag: StationIdentifier	Y	A(30)	This element may be used by organizations sharing data through the Exchange for reference purposes.	
3.2	Station Name XML Tag: StationName	Y	A(255)		

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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules
3.3	<p>Station Type Name XML Tag: StationType</p>	Y	A(20)	<p>Valid values are:</p> <ul style="list-style-type: none"> <li>- Estuary</li> <li>- Groundwater</li> <li>- Intertidal</li> <li>- Lake or Pond</li> <li>- Reservoir or Quarry</li> <li>- Land</li> <li>- Ocean</li> <li>- Riparian Zone</li> <li>- Source</li> <li>- Spring</li> <li>- Stream or River</li> <li>- Wetland</li> <li>- Other</li> </ul> <p>These values represent a simplification of the list of values recommended by the EDSC RWQRCMA standards.</p>
3.4	<p>Station Location Descriptor Name XML Tag: LocationDescriptorName</p>	N	A(100)	<p>Multiple location descriptors may be provided for each station to describe its location using a variety of coding approaches as appropriate to the location and the needs and interests of the responsible organization. The specific types of codification or description provided will likely be defined by the trading partners through the establishment of a TPA. A context must be specified for each location descriptor that is provided.</p>

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Data Element		Description	Required (Y/N/c)	Data Type	Business Rules
3.5	Station Location Descriptor Context XML Tag: LocationDescriptorContext	Provides a contextual description for the relevant station location descriptor. For example, Hydrologic Unit Code. In combination with the previous station location descriptor field, this context will enable searching by specific type of geographic reference in addition to the point latitude and longitude data elements that are also included.	c	A(30)	A context must be provided for each Station Location Descriptor that is specified. Valid values are: - HUC - Waterbody - WRIA - Aquifer name - NRCS ID - Ecoregion - LLID - County - State - Congressional District - ZIP Code - Other
3.6	Latitude Measure XML Tag: LatitudeMeasure	The measure of the angular distance on a meridian north or south of the equator in decimal degrees.	Y	N(8,6)	Derived from EDR <i>Location Data Standard</i> . Will accommodate signed values. Example +78.123456
3.7	Longitude Measure XML Tag: LongitudeMeasure	The measure of the angular distance on a meridian east or west of the prime meridian in decimal degrees.	Y	N(9,6)	Derived from EDR <i>Location Data Standard</i> . Will accommodate signed values. Example -123.456789
3.8	Station Organization Formal Name XML Tag: ContactOrganizationName	The legal, formal name and acronym of the organization that is the contact for the station where appropriate.	N	A(80)	For the purpose of the Data Catalog, no more than one organization may be specified for a given station.

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Data Element	Description	Required (Y/N/c)	Data Type	Business Rules
<b>4.0 Field Event / Result Information</b>				
For each station monitored within a given project, the Data Catalog will include summary details of the field activities conducted and results obtained by that project/station combination. Within each project/station combination, date range and number of results will be derived for each unique set of sampled media type, sampled taxonomic name, monitored analyte, and field event organization formal name.				
4.1	Sampled Media Type XML Tag: MediaText	Y	A(30)	Valid values are: - Water - Sediment - Soil - Biological (tissue) - Biological (population)
4.2	Sampled Taxonomic Name XML Tag: BiologicalSystematicName	N	A(200)	
4.3	Monitored Analyte XML Tag: AnalyteName	Y	A(255)	
4.4	Field Event Organization Formal Name XML Tag: ContactOrganizationName	N	A(80)	For the purpose of the Data Catalog, no more than one organization may be specified for a given field event.
4.5	Minimum Field Event Start Date XML Tag: MinFieldEventStartDate	Y	date	Will be reported as 4-digit year, 2-digit month, and 2-digit day in YYYYMMDD format.
4.6	Maximum Field Event End Date XML Tag: ProjectEndDate	Y	date	Will be reported as 4-digit year, 2-digit month, and 2-digit day in YYYYMMDD format.
4.7	Number of Results XML Tag: NumberResults	Y	N(6)	