



National Hydrography Dataset - Reach Addressing Database Design and Development Support

Physical Design Document - Version 2.1

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1.0 OVERVIEW

The National Hydrography Dataset (NHD) is a database that interconnects and uniquely identifies the millions of stream segments or reaches that comprise the nations' surface water drainage system. It is based upon the USGS 1:100,000-scale Digital Line Graph (DLG) hydrography dataset integrated with reach-related information from the USEPA Reach File Version 3.0-Alpha release (RF3-Alpha). The NHD provides a national framework for assigning reach addresses to water quality related entities, such as industrial Clean Water Act Section 305(b) and 303(d) waterbodies, and Designated Uses, etc. Reach addresses establish the locations of these entities relative to one another within the NHD surface water drainage network in a manner similar to street addresses. The assignment of reach addresses is accomplished through a process known as reach indexing.

This document describes the physical structure for the NHD Reach Address Database (RAD) that stores NHD geometry and feature attribute tables along with reach indexed information as event tables. Event tables are the intermediary linkage between the NHD and EPA programmatic data stored in other databases such as Total Maximum Daily Load (TMDL) Tracking System, National Assessment Database, Water Quality Standards Database (WQSDB), and Envirofacts. The event tables in the RAD are implemented as two sets of tables: production data and archived data. The production tables contain only the current set of data. The archived data tables contain the current set of data as well as archived data and provide the ability to perform time series analysis within and across programs. The goal for the NHD RAD is to facilitate access by Web-based GIS applications. The technical architecture for this development is the Environmental Systems Research Institute's (ESRI) Spatial Database Engine (SDE) and Oracle. There will be a complete set of layers with features stored as binary Large Object (SDELOB) geometries, and a second complete duplicate set of layers with features stored as Oracle Spatial geometries. All attribute and tracking data will be stored in individual tables stored using standard Oracle table architecture.

This document contains a section describing the tablespace structure, the database design, and the data dictionary for the NHD RAD. The data dictionary details the data elements in each table in the database. The data, event, and metadata table structures are described in Appendix A. Each program system will contain thirty of the event and related metadata tables (twelve spatial tables stored as both SDELOB and Oracle Spatial Geometry, and six metadata tables). The index and constraint table structures are described in Appendix B.

2.0 TABLESPACE DESIGN AND SIZING

The NHD RAD will contain eleven tablespaces. This division of tablespaces provides separate locations in which to place each type of data in addition to supplying locations for required Oracle Spatial and SDE tables. The physical separation of a table and its indexes provides for increased performance as well as facilitating data management of the tables. Tables 1 and 2 show the tablespaces, sizes, and descriptions for the NHD RAD.

Tablespace Name	Size (MB)	Description
ATTRIBUTE_DATA	3,000	This tablespace holds all NHD and event non-spatial data including event and NHD metadata tables.
ATTR_INDEX	5,000	This tablespace holds all nonspatial attribute indexes.
EVT_DATA	400	This tablespace holds non-spatial related event tables.
EVT_SDE_DATA	6,000	This tablespace holds the event business tables and the related SDE "S" and "F" tables.
EVT_OS_DATA	10,000	This tablespace holds the event spatial data for all Oracle Spatial layers within the RAD.
RBS	500*	This tablespace is a system tablespace containing all Oracle rollback segments (RBS) for the RAD.
SDE	60	This is the default tablespace for the sde user. This tablespace houses the Version and Layers tables which are created the first time the SDE server is started for the Oracle instance (the RAD).
SDE_DATA	6,000	This tablespace holds the spatial data for all NHD SDE layers within the RAD. It contains the NHD business tables and the related SDE "S" and "F" tables.
SDE_INDEX	3,500	This tablespace holds the SDE coordinate bounding information for all SDE layers. This tablespace also contains all spatial data related indexes: A1_IX1, F1_UK1, S1_IX1, and S1_IX2.
OS_DATA	12,000	This tablespace holds the spatial data for all NHD OS layers within the RAD.
OS_INDEX	2,500	This tablespace holds the OS coordinate bounding information for all OS layers.
SYSTEM	500*	This tablespace holds the Oracle system information.
TEMP	500*	This is the temporary tablespace which is used by Oracle during operations such as sorts within Structured Query Language (SQL) queries.

* These are minimum sizes for the NHD RAD. The WATERS Oracle instance contains additional data outside of the RAD schema. The System tablespace contains the data dictionaries for all Oracle Spatial indexes as well.

Total Sizes for NHD RAD (Estimated)	Size (in MB)
NHD Portion of the NHD RAD	29,000
Event Table Portion of the NHD RAD	21,000
Total Size (CANYON Production)	50,000

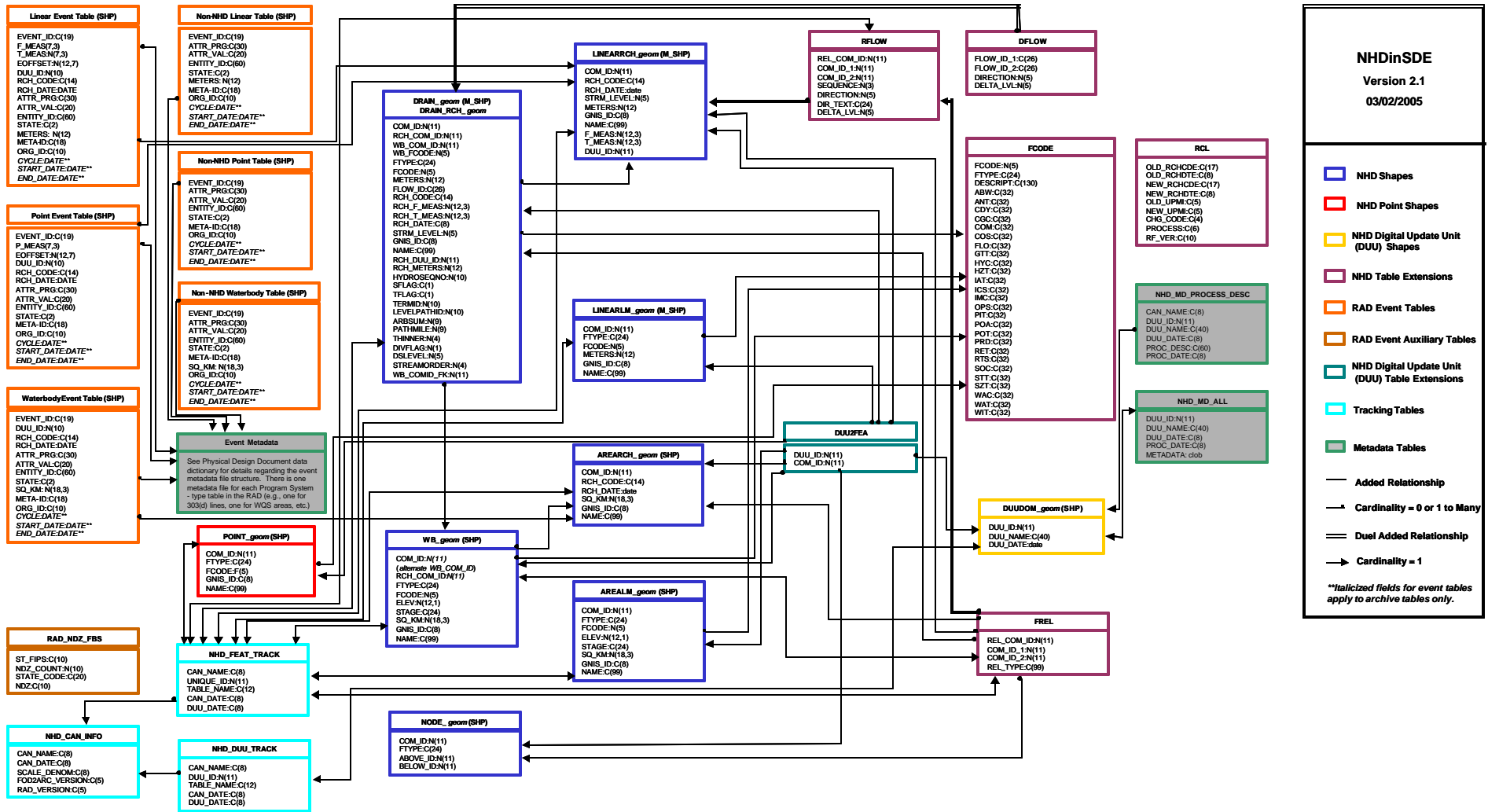
3.0 NHD RAD DATABASE DIAGRAM

The diagram on the following page shows the tables in the NHD RAD database as well as their relationship to each other. For the event tables, only one table of each type of NHD referenced event and custom shapes (point, line, and area) are shown; however, each program system in the database will have one table of each type. The archive tables match the structures of the production tables (tables containing only the current set of event data) with the addition of three columns: cycle, start_date, end_date. These are identified by italics with ** in the schema diagram. Similarly, the event metadata tables are represented by one graphic, however, there will be a single event metadata table for each

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program system type (ie. there will be one metadata table for 303d lines, one for 303d points, and one for 303d areas). Therefore, there will be one

NHD RAD 2.1 Schema



metadata table for each type of event table for each program system (both the NHD referenced and custom shape event tables link to the same metadata tables). This same implementation applies for the archive tables as well. There are too many columns in the metadata table to be shown on the diagram. For a complete list of the columns in the metadata tables, please refer to the data dictionary in Appendix A.

4.0 DATA DICTIONARY

The data dictionary resides in Appendix A and describes the tables that exist in the NHD RAD. These table descriptions contain information pertaining to column names, types, widths, descriptions, and sources. The following tables describe information pertaining to the sources of data in the NHD RAD, the existence of temporary tables relating to the NHD data load and to the Event Maintenance process, and a list of Program System Event data contained in the NHD RAD. For a more comprehensive description of the data dictionary contents and relationships please see Appendix A.

4.1 Data Content Sources

The “Source” column in the table descriptions refers to the source of the column and the data populating it. In some cases, the column can be traced to more than one source. In these cases, the description will provide additional clarification regarding the source contributions. The possible source values and their descriptions are found in Table 3.

Table 3. Source Descriptions	
Source Name	Description
FOD	These columns and their data come from the FOD and only change when the data in the FOD are updated.
SDE	These columns are required constructs of the SDE data model.
OS	These columns are required constructs of the Oracle Spatial data model.
NHDinARC	An ArcInfo construct which is a required part of the ArcInfo data structure. The values in these columns are not constant for a feature.
PROGSYS	These columns and their data come from EPA program system databases.
VALUE ADDED	The data contained in these columns have been calculated based on other NHD data attributes.
DUPLICATED	The data contained in these columns have been duplicated from data that exists in other columns from other tables in the NHD.
NATIVE	The data contained in these columns originated from the original source data and are attributes of that specific dataset.

(See Appendix A for Details)

4.2 NHD Load Temporary Tables

The NHD RAD contains a set of “temporary tables” that facilitate the use of data integrity checks before data are loaded into the production tables. These “temporary tables” are not truly temporary, but exist permanently and only contain data temporarily during the load process. There are two sets of temporary tables in the NHD RAD. There are temporary layers in the RAD that use the Oracle Spatial

geometry format and are then registered to ArcSDE. There are also temporary standard Oracle tables with an _dup naming convention that are used to facilitate the resolution of duplicate data during the load process. Table 4 contains a list of these “temporary tables” where the registered Oracle Spatial layers have the same structure as the Oracle Spatial production tables, plus an additional Objectid field created for the purpose of ArcSDE registration, and the <table>_dup are Oracle tables used during the load process to handle duplicate feature issues containing a unique_id field, can_date containing the date of the feature being loaded, and prod_date containing the date of the duplicate feature in the production database.

Table 4. Temporary NHD Load and Update Tables	
Table Name	Description
TEMP_AREALM	Temporary Oracle Spatial layer registered to ArcSDE for NHD load and update purposes.
TEMP_AREALM_DUP	Temporary Oracle table used to track duplicate features during the NHD load and update processes.
TEMP_AREARCH	Temporary Oracle Spatial layer registered to ArcSDE for NHD load and update purposes.
TEMP_AREARCH_DUP	Temporary Oracle table used to track duplicate features during the NHD load and update processes.
TEMP_DFLOW	Temporary Oracle table for NHD load and update purposes.
TEMP_DFLOW_DUP	Temporary Oracle table used to track duplicate records during the NHD load and update processes.
TEMP_DFLOW_ERRORS	Temporary Oracle table used during NHD load and update purposes.
TEMP_DRAIN	Temporary Oracle Spatial layer registered to ArcSDE for NHD load and update purposes.
TEMP_DRAIN_DUP	Temporary Oracle table used to track duplicate features during the NHD load and update processes.
TEMP_DUU2FEA	Temporary Oracle table for NHD load and update purposes.
TEMP_DUU2FEA_DUP	Temporary Oracle table used to track duplicate records during the NHD load and update processes.
TEMP_DUUDOM	Temporary Oracle Spatial layer for NHD load and update purposes.
TEMP_DUUDOM_DUP	Temporary Oracle table used to track duplicate records during the NHD load and update processes.
TEMP_FREL	Temporary Oracle table for NHD load and update purposes.
TEMP_FREL_DUP	Temporary Oracle table used to track duplicate records during the NHD load and update processes.
TEMP_ICUC_RFLOW	Temporary Oracle table for NHD load and update purposes.
TEMP_ICUC_RFLOW_DUP	Temporary Oracle table used to track duplicate features during the NHD load and update processes.
TEMP_LINEARLM	Temporary Oracle Spatial layer registered to ArcSDE for NHD load and update purposes.
TEMP_LINEARLM_DUP	Temporary Oracle table used to track duplicate features during the NHD load and update processes.
TEMP_LINEARRCH	Temporary Oracle Spatial layer registered to ArcSDE for NHD load and update purposes.
TEMP_LINEARRCH_DUP	Temporary Oracle table used to track duplicate features during the NHD load and update processes.
TEMP_NODE	Temporary Oracle Spatial layer registered to ArcSDE for NHD load and update purposes.

Table Name	Description
TEMP_NODE_DUP	Temporary Oracle table used to track duplicate features during the NHD load and update processes.
TEMP2_POINT	Temporary Oracle Spatial layer registered to ArcSDE for NHD load and update purposes.
TEMP_POINT_DUP	Temporary Oracle table used to track duplicate features during the NHD load and update processes.
TEMP_RCL	Temporary Oracle table for NHD load and update purposes.
TEMP_RCL_DUP	Temporary Oracle table used to track duplicate features during the NHD load and update processes.
TEMP_RFLOW	Temporary Oracle table for NHD load and update purposes.
TEMP_RFLOW_DUP	Temporary Oracle table used to track duplicate features during the NHD load and update processes.
TEMP_WB	Temporary Oracle Spatial layer registered to ArcSDE for NHD load and update purposes.
TEMP_WB_DUP	Temporary Oracle table used to track duplicate features during the NHD load and update processes.

4.3 Event Program Data

The NHD RAD contains a variety of program system data referred to as event data. Each program system set of events is made up of a set of tables that follow the standard event table structure. There are 30 Oracle tables that make up the standard event table structures for each program system, and certain program systems may contain auxiliary tables. There are three types of spatial layers: lines, points, and areas and each type exists as both SDELOB and Oracle Spatial Geometry type spatial layers. There are both NHD referenced events and custom shape events. Custom shape events are events that are not referenced to the NHD, but have been referenced from some other data source. The production tables (RAD_) are made up of 15 tables and contain only the current set of event data, and the archived data set of tables (ARCH_) are made up of 15 tables as well and contain both the current set of data and data that has been archived. The primary differences between the production tables and archived tables are data content and the date fields to track time series information in the archived tables. There are three metadata tables that link to both the NHD referenced and custom shape event layers associated with the production tables, and there are three metadata tables associated with the archive tables as well. Table 5 lists each program system contained in the NHD RAD, its abbreviation used in the event table naming convention and any additional notes of interest.

Program System	Abbreviation	Notes
303(d)	303d	Standard event table structure.
305(b)	305b	Standard event table structure.
Water Quality Standards	WQS	Standard event table structure.
Beaches	BEACH	Standard event table. Contains additional external attribute table with foreign key relationship.
Combined Sewer Overflow	CSO	Standard event table structure.

Program System	Abbreviation	Notes
Drinking Water Intakes	DWI	Standard event table structure. Contains additional external attribute table with foreign key relationship.
Fish Advisories	FISH	Standard event table structure.
Grants Reporting and Tracking System	GRTS	Standard event table structure.
No Discharge Zones	NDZ	Standard event table structure.
Permit Compliance System	PCS	Standard event table structure.
Source Water Protections Area	SWA	Standard event table structure. Contains additional external attribute table.
Special Appropriations Projects	SAAP	Standard event table structure.
WELLS	WELLS	Standard event table structure.

(See Appendix A for Details)

Every event table contains a column called ENTITY_ID. This column contains the event identifier (referred to as the Entity) and provides the link back to the external program system database. Future updates to the database will include data integrity checks such that the ENTITY_IDs within the RAD are checked against the ENTITY_IDs in the program system databases.

The event program look up table RAD_EVTPRG_LUT is based on the program system abbreviation naming convention and provides a description of the what the abbreviation means. The look up table also describes program system availability via the Download Service, and each program’s requirements for time series analysis and management by cycle year.

4.4 Event Maintenance Temporary Tables

For event maintenance, there is another set of temporary layers and tables not previously described that exist in the database. These layers and tables are considered temporary because they remain empty except during the event maintenance process. Table 6 contains a listing of these layers and tables and a brief description of their purpose.

Table Name	Description
TEMP_LINE	Intermediate layer used to load linear event data. The structure is the same as all linear event layers.
TEMP_POINT	Intermediate layer used to load point event data. The structure is the same as all point event layers.
TEMP_AREA	Intermediate layer used to load area event data. The structure is the same as all area event layers.
TEMP_NS_LINE	Intermediate layer used to load linear non-NHD event data. The structure is the same as all non-NHD linear event layers.
TEMP_NS_POINT	Intermediate layer used to load point non-NHD event data. The structure is the same as all non-NHD point event layers.

Table 6. Event Maintenance Temporary Tables	
Table Name	Description
TEMP_NS_AREA	Intermediate layer used to load area non-NHD event data. The structure is the same as all non-NHD area event layers.
TEMP_LINE_M	Intermediate table used to load linear metadata data. The structure is the same as all linear metadata tables.
TEMP_POINT_M	Intermediate table used to load point metadata data. The structure is the same as all point metadata tables.
TEMP_AREA_M	Intermediate table used to load area metadata data. The structure is the same as all area metadata tables.

Also included in the database is a states table called RAD_STATE_ps where “ps” refers to a particular program system. These RAD_STATE_ps tables contain the state information necessary to perform the event data replication from the Intranet to the Internet. Data to be made available in the Internet NHD RAD are determined on a state by state basis. All states listed in the RAD_STATE_ps table for a program system are made available in the Internet RAD, but when RAD_STATE_ps is empty data for all states are made available in the Internet RAD for that program system.

APPENDIX A

NHD RAD Table Data Dictionary

Appendix A contains the NHD RAD data dictionary. The NHD RAD data dictionary describes the NHD tables, the program system event tables, and the event metadata tables including column name, type, width, description, and source (note: spatial tables are designated by gt which refers to geometry type: SDELOB (sde) or Oracle Spatial (os)). The column names in bold indicate primary key fields. The NHD tables are presented first, followed by the event tables and the event metadata tables, and finally any auxiliary event tables. Each spatial layer object described in the data dictionary exists as both SDELOB and Oracle Spatial geometries so there is only one table entry in the data dictionary. Attribute tables exist as unique objects; i.e., there is only one of each described object. The temporary tables described in previous sections will have the same structure as their corresponding production tables unless previously noted (ie. NHD temporary spatial layer tables contain an additional Objectid column).

Most of the description text for the NHD tables is taken from The National Hydrography Dataset, Introducing the NHDinARC document which may be found at <http://nhd.usgs.gov/techref.html>.

For the event tables and event metadata tables each of the thirty event tables described are generic objects: one of each exists for each program system in the RAD, and each spatial layer exists as both SDELOB and Oracle Spatial Geometry. The metadata tables for the production and archive layers are identical and therefore listed only once.

All spatial layers have the column RID. This column plays a different role depending on the type of spatial layer. For Oracle Spatial layers the RID contains the geometric description of the geometry objects and is of type MDSYS.SDO_GEOMETRY. For SDELOB layers the RID contains the feature ids that link to the ArcSDE managed feature and spatial index tables. The ArcSDE managed feature table contains the geometric description of the geometry objects.

AREALM_gt				
Column Name	Data Type	Width	Description	Source
COM_ID	NUMBER	11	Unique permanent identifier per NHD feature.	FOD
FTYPE	VARCHAR2	24	Type of NHD feature.	FOD
FCODE	NUMBER	5	Numeric value that encodes the type and values for a set of characteristics for an NHD feature. This five digit code has two parts: the first three digits encode the feature type; the last two digits encode values for a set of characteristics associated with the feature.	FOD

AREALM_gt				
Column Name	Data Type	Width	Description	Source
ELEV	NUMBER	12.1	Elevation of the feature in meters above the vertical datum. In the initial release of NHD, only area to be submerged and inundation area in the landmark theme may have elevations. Most of these features do not have a value for elevation, so -9998 (unspecified) is the most common value. For all other feature types, the value for elevation is -9999 (not applicable).	FOD
STAGE	VARCHAR2	24	Height of the water surface which is the basis for the elevation.	FOD
SQ_KM	NUMBER	18.3	The area of the feature in square kilometers.	FOD
GNIS_ID	VARCHAR2	8	The GNIS identifier of the feature name. A null value means the name is not populated.	FOD
NAME	VARCHAR2	99	The text of the feature name. A null means that the name is not populated.	FOD
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

AREARCH_gt				
Column Name	Data Type	Width	Description	Source
COM_ID	NUMBER	11	Unique permanent identifier per NHD feature.	FOD
RCH_CODE	VARCHAR2	14	A numeric code that uniquely identifies a reach. This 14 digit code has two parts: the first eight digits are the HUC for the Sub-basin in which the reach is located; the last six digits are a sequentially-ordered randomly assigned number.	FOD
RCH_DATE	VARCHAR2	8	Date that the RCH_CODE was assigned (formatted: YYYYMMDD).	FOD
SQ_KM	NUMBER	18.3	The area of the feature in square kilometers.	FOD
GNIS_ID	VARCHAR2	8	The GNIS identifier of the feature name. A null value means the name is not populated.	FOD
NAME	VARCHAR2	99	The text of the feature name. A null means that the name is not populated.	FOD

AREARCH_gt				
Column Name	Data Type	Width	Description	Source
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS
DUU_ID	NUMBER	11	Unique identifier of the digital update unit.	FOD

DFLOW				
Column Name	Data Type	Width	Description	Source
FLOW_ID_1	VARCHAR2	26	An identifier that uniquely identifies a drain. This 26 character code has three parts: The first 14 characters are the RCH_CODE for the reach the drain is a part. The next six are the reach F_MEAS for that drain. The last six are the reach T_MEAS for that drain. The decimals have been removed from the measure values.	DUPLICATED
FLOW_ID_2	VARCHAR2	26	An identifier that uniquely identifies a drain. This 26 character code has three parts: The first 14 characters are the RCH_CODE for the reach the drain is a part. The next six are the reach F_MEAS for that drain. The last six are the reach T_MEAS for that drain. The decimals have been removed from the measure values.	DUPLICATED
DIRECTION	NUMBER	5	Integer code for direction of flow.	DUPLICATED
DELTA_LVL	NUMBER	5	The difference between the drain stream level of drains represented by Flow_id_1 and Flow_id_2	VALUE ADDED

DRAIN_gt / DRAIN_RCH_gt				
Column Name	Data Type	Width	Description	Source
COM_ID	NUMBER	11	Unique permanent identifier per NHD feature.	FOD
RCH_COM_ID	NUMBER	11	Unique identifier of the transport reach or coastline reach in the LINEARRCH table of which the network element is part.	FOD

DRAIN_gt / DRAIN_RCH_gt				
Column Name	Data Type	Width	Description	Source
WB_COM_ID	NUMBER	11	Unique identifier of the waterbody reach in AREARCH table that the network element (artificial path only) flows through. Records in this table may be related to the COM_ID column of the AREARCH table. Network elements which are not artificial paths through waterbodies will have values of -9999 (not applicable). In the initial release of NHD, this column is not populated, and all features have a value of -9998.	DUPLICATED
WB_FCODE	NUMBER	5	Numeric code that encodes the type and values for a set of characteristics for an NHD feature. This five digit code has two parts: the first three digits encode the feature type; the last two digits encode values for a set of characteristics associated with the feature. This applies to the Waterbody feature from which an artificial path belongs.	DUPLICATED
FTYPE	VARCHAR2	24	Type of NHD feature.	FOD
FCODE	NUMBER	5	Numeric code that encodes the type and values for a set of characteristics for an NHD feature. This five digit code has two parts: the first three digits encode the feature type; the last two digits encode values for a set of characteristics associated with the feature.	FOD
METERS	NUMBER	12	The length of the NHD feature in meters.	FOD
FLOW_ID	VARCHAR2	26	An identifier that uniquely identifies a drain. This 26 character code has three parts: The first 14 characters are the RCH_CODE for the reach the drain is a part. The next six are the reach F_MEAS for that drain. The last six are the reach T_MEAS for that drain. The decimals have been removed from the measure values.	NHDinARC
RCH_CODE	VARCHAR2	14	A numeric code that uniquely identifies a reach. This 14 digit code has two parts: the first eight digits are the HUC for the sub-basin in which the reach is located; the last six digits are a sequentially-ordered randomly assigned number.	DUPLICATED

DRAIN_gt / DRAIN_RCH_gt				
Column Name	Data Type	Width	Description	Source
RCH_F_MEAS	NUMBER	12.3	Start measure of the reach. Populated from minimum measure from reach sections.	DUPLICATED
RCH_T_MEAS	NUMBER	12.3	End measure of the reach. Populated from maximum measure from reach sections.	DUPLICATED
RCH_DATE	VARCHAR2	8	Date that the RCH_CODE was assigned (formatted: YYYYMMDD).	DUPLICATED
RCH_LEVEL	NUMBER	5	Stream Level. Has a value range of 1 to 99 and the value -9998 (unspecified). Populated from the Linearrch of which the network element is part.	DUPLICATED
DRAIN_LEVEL	NUMBER	5	Stream level of the drain.	VALUE ADDED
GNIS_ID	VARCHAR2	8	The GNIS identifier of the feature name. A null value means the name is not populated.	DUPLICATED
NAME	VARCHAR2	99	The text of the feature name. A null means that the name is not populated.	DUPLICATED
RCH_DUU_ID	NUMBER	11	Unique identifier of the digital update unit. Populated from DUU2FEA table related on RCH_COM_ID.	DUPLICATED
RCH_METERS	NUMBER	12	Length of the NHD Linearrch feature in meters of which the network element is part.	DUPLICATED
HYDROSEQNO	NUMBER	10	A sequential number which orders drains in hydrologic sequence.	VALUE ADDED
SFLAG	VARCHAR2	1	Start flag.	VALUE ADDED
TFLAG	VARCHAR2	1	Terminal flag.	VALUE ADDED
TERMID	NUMBER	10	Hydrologic sequence number of the terminal drain to which this drain flows.	VALUE ADDED
LEVELPATHID	NUMBER	10	Hydrologic sequence number of most downstream drain on current level path.	VALUE ADDED
ARBSUM	NUMBER	16.3	Sum of drain lengths upstream of the downstream end of this drain.	VALUE ADDED
PATHLENGTH	NUMBER	16.3	Sum of drain lengths along main path between this drain and its terminal drain.	VALUE ADDED
THINNER	NUMBER	4	Ordinal values which define progressively more dense stream displays.	VALUE ADDED
DIVFLAG	NUMBER	1	Divergence flag valued for the drains immediately downstream of a flow split.	VALUE ADDED

DRAIN_gt / DRAIN_RCH_gt				
Column Name	Data Type	Width	Description	Source
DSLEVEL	NUMBER	5	Downstream drain's stream level.	VALUE ADDED
STREAMORDER	NUMBER	4	Strahler stream order.	VALUE ADDED
WB_COMID_FK	NUMBER	11	Unique identifier of the waterbody reach in AREARCH table through which the network element (artificial path only) flows through. Records in this table may be related to the COM_ID column of the AREARCH table. Network elements which are not artificial paths through waterbodies will have values of -9999 (not applicable).	DUPLICATED
DSLEVELPATHID	NUMBER	10	Downstream level path ID.	VALUE ADDED
USLEVELPATHID	NUMBER	10	Upstream level path ID.	VALUE ADDED
USHYDROSEQNO	NUMBER	10	Upstream hydro sequence number.	VALUE ADDED
USMINHS	NUMBER	10	Minimum Hydrologic Sequence Number of all immediately upstream drains.	VALUE ADDED
DSCOUNT	NUMBER	10	Downstream count.	VALUE ADDED
DSMINORHS	NUMBER	10	At a divergence, the Hydrologic Sequence Number of the immediately downstream minor path drain.	VALUE ADDED
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

DUU2FEA				
Column Name	Data Type	Width	Description	Source
DUU_ID	NUMBER	11	Unique identifier of the digital update unit.	FOD
COM_ID	NUMBER	11	Unique permanent identifier per NHD feature.	FOD

DUUDOM_gt				
Column Name	Data Type	Width	Description	Source
DUU_ID	NUMBER	11	Unique identifier of the digital update unit.	FOD

DUUDOM_gt				
Column Name	Data Type	Width	Description	Source
DUU_NAME	VARCHAR2	40	Name of the digital update unit and the name of the ".met" file that contains the metadata entries for the digital update unit. For the cataloging unit, the DUU_NAME is the 8-digit sub-basin identifier; for the 1:100,000-scale quadrangle, the DUU_NAME is the 3-digit abbreviation for the 100K quadrangle.	FOD
DUU_DATE	VARCHAR2	8	Date that the DUU was created (formatted: YYYYMMDD).	FOD
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

FCODE				
Column Name	Data Type	Width	Description	Source
FCODE	NUMBER	5	Numeric code that encodes the type and values for a set of characteristics for an NHD feature. This five digit code has two parts: the first three digits encode the feature type; the last two digits encode values for a set of characteristics associated with the feature.	FOD
FTYPE	VARCHAR2	24	Type of NHD feature.	FOD
DESCRIPT	VARCHAR2	130	Textual definition of the FCODE value.	FOD
ABW	VARCHAR2	32	Above-water Portion.	FOD
ANT	VARCHAR2	32	Anchorage Type.	FOD
CDY	VARCHAR2	32	Canal/Ditch Type.	FOD
CGC	VARCHAR2	32	Glaciation Category.	FOD
COM	VARCHAR2	32	Construction Material.	FOD
COS	VARCHAR2	32	Cover Status.	FOD
FLO	VARCHAR2	32	Flow Status.	FOD
GTT	VARCHAR2	32	Gate Type.	FOD
HYC	VARCHAR2	32	Hydrographic Category.	FOD
HZT	VARCHAR2	32	Hazard Zone Category.	FOD
IAT	VARCHAR2	32	Inundation Area Type.	FOD
ICS	VARCHAR2	32	Inundation Control Status.	FOD
IMC	VARCHAR2	32	Ice Mass category.	FOD
OPS	VARCHAR2	32	Operational Status.	FOD
PIT	VARCHAR2	32	Pipeline Type.	FOD
POA	VARCHAR2	32	Positional Accuracy.	FOD
POT	VARCHAR2	32	Post Type.	FOD

FCODE				
Column Name	Data Type	Width	Description	Source
PRD	VARCHAR2	32	Product.	FOD
RET	VARCHAR2	32	Reservoir Type.	FOD
RTS	VARCHAR2	32	Relationship to Surface.	FOD
SOC	VARCHAR2	32	Sea/Ocean Category.	FOD
STT	VARCHAR2	32	Snag/Stump Type.	FOD
SZT	VARCHAR2	32	Special Use ZoneType.	FOD
WAC	VARCHAR2	32	Water Characteristics.	FOD
WAT	VARCHAR2	32	Wall Type.	FOD
WIT	VARCHAR2	32	Water Intake/Outflow Type.	FOD

FREL				
Column Name	Data Type	Width	Description	Source
REL_COM_ID	NUMBER	11	Unique identifier of the NHD relationship.	FOD
COM_ID_1	NUMBER	11	Unique identifier of the first NHD feature in the relationship.	FOD
COM_ID_2	NUMBER	11	Unique identifier of the second NHD feature in the relationship.	FOD
REL_TYPE	VARCHAR2	99	Type of relationship.	FOD

LINEARLM_gt				
Column Name	Data Type	Width	Description	Source
COM_ID	NUMBER	11	Unique permanent identifier per NHD feature.	FOD
FTYPE	VARCHAR2	24	Type of NHD feature.	FOD
FCODE	NUMBER	5	Numeric value that encodes the type and values for a set of characteristics for an NHD feature. This five digit code has two parts: the first three digits encode the feature type; the last two digits encode values for a set of characteristics associated with the feature.	FOD
METERS	NUMBER	12	Length of the NHD feature in meters.	FOD
GNIS_ID	VARCHAR2	8	The GNIS identifier of the feature name. A null value means the name is not populated.	FOD
NAME	VARCHAR2	99	The text of the feature name. A null means that the name is not populated.	FOD
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

LINEARRCH_gt				
Column Name	Data Type	Width	Description	Source
COM_ID	NUMBER	11	Unique permanent identifier per NHD feature.	FOD
RCH_CODE	VARCHAR2	14	A numeric code that uniquely identifies a reach. This 14 digit code has two parts: the first eight digits are the HUC for the sub-basin in which the reach is located; the last six digits are a sequentially-ordered randomly assigned number.	FOD
RCH_DATE	VARCHAR2	8	Date that the RCH_CODE was assigned (formatted: YYYYMMDD).	FOD
STRM_LEVEL	NUMBER	5	Stream Level. Has a value range of 1 to 99 and the value -9998 (unspecified).	FOD
METERS	NUMBER	12	Length of the NHD feature in meters.	FOD
GNIS_ID	VARCHAR2	8	The GNIS identifier of the feature name. A null value means the name is not populated.	FOD
NAME	VARCHAR2	99	The text of the feature name. A null means that the name is not populated.	FOD
F_MEAS	NUMBER	12.3	Start measure of the reach.	DUPLICATED
T_MEAS	NUMBER	12.3	End measure of the reach.	DUPLICATED
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS
DUU_ID	NUMBER	11	Unique identifier of the digital update unit.	FOD

NODE_gt				
Column Name	Data Type	Width	Description	Source
COM_ID	NUMBER	11	Unique permanent identifier per NHD feature.	FOD
FTYPE	VARCHAR2	24	Type of NHD feature.	FOD
ABOVE_ID	NUMBER	11	Unique identifier of the over passing NHD feature or reach.	FOD
BELOW_ID	NUMBER	11	Unique identifier of the under passing NHD feature or reach.	FOD
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

POINT_gt				
Column Name	Data Type	Width	Description	Source
COM_ID	NUMBER	11	Unique permanent identifier per NHD feature.	FOD
FTYPE	VARCHAR2	24	Type of NHD feature.	FOD
FCODE	NUMBER	5	Numeric value that encodes the type and values for a set of characteristics for an NHD feature. This five digit code has two parts: the first three digits encode the feature type; the last two digits encode values for a set of characteristics associated with the feature.	FOD
GNIS_ID	VARCHAR2	8	The GNIS identifier of the feature name. A null value means the name is not populated.	FOD
NAME	VARCHAR2	99	The text of the feature name. A null means that the name is not populated.	FOD
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

RCL				
Column Name	Data Type	Width	Description	Source
OLD_RCHCDE	VARCHAR2	17	The reach code prior to the change.	FOD
OLD_RCHDTE	VARCHAR2	8	The reach code assignment date for OLD_RCHCDE.	FOD
NEW_RCHCDE	VARCHAR2	17	The reach code after the change.	FOD
NEW_RCHDTE	VARCHAR2	8	The reach code assignment date for NEW_RCHCDE.	FOD
OLD_UPMI	VARCHAR2	5	The upstream marker index for OLD_RCHCDE. Only used when OLD_RCHCDE is an RF3-Alpha reach.	FOD
NEW_UPMI	VARCHAR2	5	The upstream marker index for NEW_RCHCDE. Only used when NEW_RCHCDE is an RF3-Alpha reach.	FOD
CHG_CODE	VARCHAR2	4	The type of change that caused the reach code to change.	FOD
PROCESS	VARCHAR2	6	The name of the process in which the reach code changed.	FOD
RF_VER	VARCHAR2	10	The reach file or NHD version in which the reach code change is effective.	FOD

RFLOW				
Column Name	Data Type	Width	Description	Source

RFLOW				
Column Name	Data Type	Width	Description	Source
REL_COM_ID	NUMBER	11	Unique identifier of the NHD relationship.	FOD
COM_ID_1	NUMBER	11	The first reach of the flow relationship. Relates to COM_ID in LINEARRCH table. Has value of "0" if DIR_TEXT is "Network Start".	FOD
COM_ID_2	NUMBER	11	The second reach of the flow relationship. Relates to COM_ID in LINEARRCH table. Has value of "0" if DIR_TEXT is "Network End".	FOD
SEQUENCE	NUMBER	3	This attribute is used to order the inflows and outflows along the interior of the second reach. When sequence number is 0, the first and second reaches touch end-to-end.	FOD
DIRECTION	NUMBER	5	Integer code for direction of flow.	FOD
DIR_TEXT	VARCHAR2	24	This attribute encodes the corresponding DIRECTION value in words.	FOD
DELTA_LVL	NUMBER	5	The difference in level from the first reach to the second reach (LEVEL of first reach minus LEVEL of second reach). The value will be -9999 (not applicable) when the value of the from reach or the to reach is "0". The value will be -9999 when the direction is "Network Start", "Network End", or "Non-flowing Connection".	FOD

WB_gt				
Column Name	Data Type	Width	Description	Source
COM_ID	NUMBER	11	Unique permanent identifier per NHD feature.	FOD
RCH_COM_ID	NUMBER	11	Unique identifier of the waterbody NHD reach in the AREARCH table.	FOD
FTYPE	VARCHAR2	24	Type of NHD feature.	FOD
FCODE	NUMBER	5	Numeric value that encodes the type and values for a set of characteristics for an NHD feature. This five digit code has two parts: the first three digits encode the feature type; the last two digits encode values for a set of characteristics associated with the feature.	FOD

WB_gt				
Column Name	Data Type	Width	Description	Source
ELEV	NUMBER	12.1	Elevation of the feature in meters above the vertical datum. In the initial release of NHD, only area to be submerged and inundation area in the landmark theme may have elevations. Most of these features do not have a value for elevation, so -9998 (unspecified) is the most common value. For all other feature types, the value for elevation is -9999 (not applicable).	FOD
STAGE	VARCHAR2	24	Height of the water surface which is the basis for the elevation.	FOD
SQ_KM	NUMBER	18.3	The area of the feature in square kilometers.	FOD
GNIS_ID	VARCHAR2	8	The GNIS identifier of the feature name. A null value means the name is not populated.	FOD
NAME	VARCHAR2	99	The text of the feature name. A null means that the name is not populated.	FOD
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

ICUC_RFLOW				
Column Name	Data Type	Width	Description	Source
REL_COM_ID	VARCHAR2	11	Unique identifier of NHD relation.	DUPLICATED
COM_ID_1	VARCHAR2	11	The first reach of the flow relationship. Relates to COM_ID in LINEARRCH table. Has value of "0" if DIR_TEXT is "Network End".	DUPLICATED
COM_ID_2	VARCHAR2	11	The second reach of the flow relationship. Relates to COM_ID in LINEARRCH table. Has value of "0" if DIR_TEXT is "Network End".	DUPLICATED
SEQUENCE	NUMBER	3	This attribute is used to order the inflows and outflows along the interior of the second reach. When sequence number is 0, the first and second reaches touch end-to-end.	DUPLICATED
DIRECTION	NUMBER	5	Integer code for direction of flow.	DUPLICATED
DIR_TEXT	VARCHAR2	24	This attribute encodes the corresponding DIRECTION value in words.	DUPLICATED

ICUC_RFLOW				
Column Name	Data Type	Width	Description	Source
DELTA_LVL	NUMBER	5	This difference in level from the first reach to the second reach (LEVEL of first reach minus LEVEL of second reach). The value will be -9999 (not applicable) when the value of the from reach or the to reach is "0". The value will be -9999 when the direction is "Network Start", "Network End", or "Non-flowing Connection".	DUPLICATED

DFLOW_ERRORS				
Column Name	Data Type	Width	Description	Source
TYPE1	VARCHAR2	1	Code to describe underlying arc direction at node for flow relationship. T for towards and F for from.	DUPLICATED
TYPE2	VARCHAR2	1	Code to describe underlying arc direction at node for flow relationship. T for towards and F for from.	DUPLICATED
RCH_COM_ID_1	NUMBER	11	Unique permanent identifier for NHD reach feature in flow relationship.	DUPLICATED
RCH_COM_ID_2	NUMBER	11	Unique permanent identifier for NHD reach feature in flow relationship.	DUPLICATED
DRN_COM_ID_1	NUMBER	11	Unique permanent identifier for NHD drain feature in flow relationship.	DUPLICATED
DRN_COM_ID_2	NUMBER	11	Unique permanent identifier for NHD drain feature in flow relationship.	DUPLICATED
DIRECTION	NUMBER	5	Integer code for direction of flow.	DUPLICATED

NHD_MD_PROCESS_DESC				
Column Name	Data Type	Width	Description	Source
CAN_NAME	VARCHAR2	8	Name for bundled data delivered from USGS. Currently restricted to distribution by sub-basin.	FOD
DUU_ID	NUMBER	11	Unique identifier of the digital update unit.	FOD
DUU_NAME	VARCHAR2	40	Name of the digital update unit and the name of the ".met" file that contains the metadata entries for the digital update unit. For the cataloging unit, the DUU_NAME is the 8-digit sub-basin identifier.	FOD
DUU_DATE	VARCHAR2	8	Date that the DUU was created (formatted: YYYYMMDD).	FOD

NHD_MD_PROCESS_DESC				
Column Name	Data Type	Width	Description	Source
PROC_DESC	VARCHAR2	60	The first 60 characters of each process description contained in the .met files for a particular can.	FOD
PROC_DATE	VARCHAR2	8	Date associated with the process description contained in the .met files for a particular can.	FOD

NHD_MD_ALL				
Column Name	Data Type	Width	Description	Source
DUU_ID	NUMBER	11	Unique identifier of the digital update unit.	FOD
DUU_NAME	VARCHAR2	40	Name of the digital update unit and the name of the “.met” file that contains the metadata entries for the digital update unit. For the cataloging unit, the DUU_NAME is the 8-digit sub-basin identifier.	FOD
DUU_DATE	VARCHAR2	8	Date that the DUU was created (formatted: YYYYMMDD).	FOD
PROC_DATE	VARCHAR2	8	Date associated with the process description contained in the .met files for a particular can.	FOD
METADATA	CLOB		The full metadata record contained in the .met file.	FOD

NHD_CAN_INFO				
Column Name	Data Type	Width	Description	Source
CAN_NAME	VARCHAR2	8	Name for bundled data delivered from USGS. Currently restricted to distribution by sub-basin.	FOD
CAN_DATE	VARCHAR2	8	Date can was created from the FOD.	FOD
SCALE_DENOM	VARCHAR2	8	Contains the denominator for reporting the scale of data contained within the can (ie. 100,000 would be 1/100,000 scale data).	FOD
FOD2ARC_VERSION	VARCHAR2	5	Version of FOD2ARC software used to extract the NHD data from the FOD and put into ArcInfo coverage format.	FOD
RAD_VERSION	VARCHAR2	5	Version of the RAD into which the can was loaded.	FOD

NHD_FEAT_TRACK				
Column Name	Data Type	Width	Description	Source
CAN_NAME	VARCHAR2	8	Name for bundled data delivered from USGS. Currently restricted to distribution by sub-basin.	FOD

UNIQUE_ID	NUMBER	11	Unique identifier for each feature. Relates to com_id for all features except duudom which relates to duu_id, and frel and rflow which relates to rel_com_id.	DUPLICATED
TABLE_NAME	VARCHAR2	12	Name of NHD RAD table to which the feature belongs.	DUPLICATED
CAN_DATE	VARCHAR2	8	Date can was created from the FOD.	FOD
DUU_DATE	VARCHAR2	8	Date that the DUU was created (formatted: YYYYMMDD).	FOD

NHD_DUU_TRACK				
Column Name	Data Type	Width	Description	Source
CAN_NAME	VARCHAR2	8	Name for bundled data delivered from USGS. Currently restricted to distribution by sub-basin.	FOD
DUU_ID	NUMBER	11	Unique identifier of the digital update unit.	DUPLICATED
TABLE_NAME	VARCHAR2	12	Name of NHD RAD table to which the feature belongs.	DUPLICATED
CAN_DATE	VARCHAR2	8	Date can was created from the FOD.	FOD
DUU_DATE	VARCHAR2	8	Date that the DUU was created (formatted: YYYYMMDD).	FOD

NEP_gt				
Column Name	Data Type	Width	Description	Source
NEP_ID	VARCHAR2	6	Feature ID	PRGSYS
NEP_NAME	VARCHAR2	55	Feature name	PRGSYS
YEAR_DESIG	VARCHAR2	10	Year designated in program	PRGSYS
RID	NUMBER / GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

AGG_ECO				
Column Name	Data Type	Width	Description	Source
AREA	NUMBER	18	Internal Area as calculated by ArcInfo	NHDinARC
PERIMETER	VARCHAR2	18	Internal Perimeter as calculated by ArcInfo	NHDinARC
AGG_DD_	NUMBER	11	Internal ArcInfo feature ID	NHDinARC
AGG_DD_ID	NUMBER	11	User assigned feature ID	NHDinARC
DIS	NUMBER	2	Dissolve code	NATIVE
CODE	VARCHAR2	5	Roman numeral code	NATIVE
NAME	VARCHAR2	60	Aggregated ecoregion name	NATIVE

AGG_ECO				
Column Name	Data Type	Width	Description	Source
FID	NUMBER	38	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column.	SDE

OMER_ECO				
Column Name	Data Type	Width	Description	Source
AREA	NUMBER	18	Internal area as calculated by ArcInfo	NHDinARC
PERIMETER	VARCHAR2	18	Internal perimeter as calculated by ArcInfo	NHDinARC
AGG_DD_	NUMBER	11	Internal ArcInfo feature ID	NHDinARC
AGG_DD_ID	NUMBER	11	User assigned feature ID	NHDinARC
ECO	NUMBER	2	Full ecoregion code	NATIVE
NAME	VARCHAR2	50	Ecoregion name	NATIVE
FID	NUMBER	38	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column.	SDE

CWNS_gt				
Column Name	Data Type	Width	Description	Source
AF_NBR	VARCHAR2	11	Authority/Facility identification number.	PROGSYS
NAME	VARCHAR2	35	Facility name.	PROGSYS
NPDES	NUMBER	9	National Pollution Discharge Elimination System (NPDES) number.	PROGSYS
NEEDS	NUMBER	21,5	EPA design year needs.	PROGSYS
CWNS_LAT	NUMBER	21,5	Original CWNS latitude.	PROGSYS
CWNS_LON	NUMBER	21,5	Original CWNS longitude.	PROGSYS
LAT	NUMBER	21,5	Latitude used based on match/no match with NPDES data.	PROGSYS
LON	NUMBER	21,5	Longitude used based on match/no match with NPDES data.	PROGSYS
FLAG	NUMBER	3	Flag indicating what Lat/Long were used.	PROGSYS
RID	NUMBER / GEOMETRY	8 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

DRINKING_WATER_GEOSPATIAL_gt				
Column Name	Data Type	Width	Description	Source
ENTITY_ID	VARCHAR2	60	Foreign key to external database: PWS_ID+“_”+ST_ASSGN_IDENT_C D	PROGSYS

DRINKING_WATER_GEOSPATIAL_gt				
Column Name	Data Type	Width	Description	Source
D_PWS_FED_TYP E_CD	VARCHAR2	4	A system-generated coded value which classifies the water system according to federal requirements.	PROGSYS
TYPE_CODE	VARCHAR2	2	A code value that identifies the type of owner for a public water system.	PROGSYS
WATER_TYPE	VARCHAR2	2	A coded value which categorizes the source water that is utilized by a water system.	PROGSYS
TINWSF_IS_NUM BER	NUMBER	22,7	A system-generated value which uniquely identifies the water system facility.	PROGSYS
TINWSYS_ST_CO DE	VARCHAR2	2	A coded value which identifies the state in which the water system is located.	PROGSYS
PWS_NAME	VARCHAR2	40	The name of the water system.	PROGSYS
SOURCE_NAME	VARCHAR2	40	The name of the water source to the system.	PROGSYS
PWS_ID	VARCHAR2	12	Uniquely identifies the water system within a specific state.	PROGSYS
ST_ASGN_IDENT_ CD	VARCHAR2	12	A state-assigned value which identifies the water system facility.	PROGSYS
TINWSYS_IS_NU MBER	NUMBER	22,7	A system-generated value which uniquely identifies the water system.	PROGSYS
PRIN_CNTY_SVD_ NM	VARCHAR2	40	Principal county served.	PROGSYS
PRIN_CNTY_SVD_ FIPS	VARCHAR2	10	County FIPS derived from principal county served.	PROGSYS
D_POPULATION_ CNT	NUMBER		A system-generated count of the total population served by a water system.	PROGSYS
LOC_CNTY_FIPS	VARCHAR2	10	County FIPS where source is located.	PROGSYS
WQS_DOC_PROTE CT	VARCHAR2	3	Flag indicating whether WQS protection for drinking water is documented.	PROGSYS
TRIBAL_FLAG	VARCHAR	1	Flag indicating if system is associated with a tribe based on SDWIS/Fed indicators.	PROGSYS
RID	NUMBER / GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

Event Tables

The event tables consist of production and archive tables. The production tables (with prefix RAD_) contain current data, and the archive tables (with prefix ARCH_) contain both current data and historical data that has been archived for any program system. From the aspect of time series analysis, the archive tables contain three additional fields, which are CYCLE, START_DATE, and

END_DATE. Twelve event tables are shown below: six for production tables and six for archive tables. The production tables and table structures for each program system are the same, regardless of program system. Similarly, the archive tables and table structures for each program system are the same, regardless of program system. Only the table name will change from one program system to the next. The Beaches program system contains an additional table called RAD_BEACH_INFO, and the No Discharge Zone program system contains an additional table called RAD_NDZ_FBS.

Note: ps is the program system abbreviation (e.g., 303d, 305b, WQS, etc.).

RAD_ps_L_gt (Linear Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique event identifier.	PROGSYS
F_MEAS	NUMBER	7.3	From measure.	PROGSYS
T_MEAS	NUMBER	7.3	To measure.	PROGSYS
EOFFSET	NUMBER	12.7	Event display offset.	PROGSYS
DUU_ID	NUMBER	10	NHD DUU identifier.	PROGSYS
RCH_CODE	VARCHAR2	14	NHD linear reach code: a numeric code that uniquely identifies a reach. This 14 digit code has two parts: the first eight digits are the HUC for the sub-basin in which the reach is located; the last six digits are a sequentially-ordered randomly assigned number.	PROGSYS
RCH_DATE	DATE		Date that the RCH_CODE was assigned (formatted: YYYYMMDD).	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute type/program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign key to external database.	PROGSYS
STATE	VARCHAR2	2	State abbreviation.	PROGSYS
METERS	NUMBER	12	Length of event in meters	PROGSYS
META_ID	VARCHAR2	18	Unique metadata identifier. Used as link to external metadata.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

RAD_ps_P_gt (Point Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique event identifier.	PROGSYS
P_MEAS	NUMBER	7.3	Point measure.	PROGSYS
EOFFSET	NUMBER	12.7	Event display offset	PROGSYS

RAD_ps_P_gt (Point Event Table)				
Column Name	Data Type	Width	Description	Source
DUU_ID	NUMBER	10	NHD DUU identifier.	PROGSYS
RCH_CODE	VARCHAR2	14	NHD linear reach code: a numeric code that uniquely identifies a reach. This 14 digit code has two parts: the first eight digits are the HUC for the sub-basin in which the reach is located; the last six digits are a sequentially-ordered randomly assigned number.	PROGSYS
RCH_DATE	DATE		Date that the RCH_CODE was assigned (formatted: YYYYMMDD).	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute type/program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign key to external database.	PROGSYS
STATE	VARCHAR2	2	State abbreviation.	PROGSYS
META_ID	VARCHAR2	18	Unique metadata identifier. Used as link to external metadata.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

RAD_ps_A_gt (Waterbody Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique event identifier.	PROGSYS
DUU_ID	NUMBER	10	NHD DUU identifier.	PROGSYS
RCH_CODE	VARCHAR2	14	NHD area reach code: a numeric code that uniquely identifies a reach. This 14 digit code has two parts: the first eight digits are the HUC for the sub-basin in which the reach is located; the last six digits are a sequentially-ordered randomly assigned number.	PROGSYS
RCH_DATE	DATE		Date that the RCH_CODE was assigned (formatted: YYYYMMDD).	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute type/program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign key to external database.	PROGSYS
STATE	VARCHAR2	2	State abbreviation.	PROGSYS
SQ_KM	NUMBER	18.3	Area of event in square kilometers.	PROGSYS
META_ID	VARCHAR2	18	Unique metadata identifier. Used as link to external metadata.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS

RAD_ps_A_gt (Waterbody Event Table)				
Column Name	Data Type	Width	Description	Source
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

RAD_NS_ps_L_gt (Non Standard Linear Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique Event Identifier.	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute Type/Program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute Value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign Key to external database.	PROGSYS
STATE	VARCHAR2	2	State Abbreviation.	PROGSYS
METERS	NUMBER	12.0	Length of event in meters.	PROGSYS
META_ID	VARCHAR2	18	Unique Metadata Identifier.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features	SDE/OS

RAD_NS_ps_P_gt (Non Standard Point Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique Event Identifier.	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute Type/Program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute Value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign Key to external database.	PROGSYS
STATE	VARCHAR2	2	State Abbreviation.	PROGSYS
META_ID	VARCHAR2	18	Unique Metadata Identifier.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

RAD_NS_ps_A_gt (Non Standard Waterbody Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique event identifier.	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute Type/Program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute Value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign Key to external database.	PROGSYS
STATE	VARCHAR2	2	State Abbreviation.	PROGSYS

SQ_KM	NUMBER	18.3	Area of event in square kilometers.	PROGSYS
META_ID	VARCHAR2	18	Unique Metadata Identifier.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

ARCH_ps_L_gt (Linear Archive Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique event identifier.	PROGSYS
F_MEAS	NUMBER	7.3	From measure.	PROGSYS
T_MEAS	NUMBER	7.3	To measure.	PROGSYS
EOFFSET	NUMBER	12.7	Event display offset.	PROGSYS
DUU_ID	NUMBER	10	NHD DUU identifier.	PROGSYS
RCH_CODE	VARCHAR2	14	NHD linear reach code: a numeric code that uniquely identifies a reach. This 14 digit code has two parts: the first eight digits are the HUC for the sub-basin in which the reach is located; the last six digits are a sequentially-ordered randomly assigned number.	PROGSYS
RCH_DATE	DATE		Date that the RCH_CODE was assigned (formatted: YYYYMMDD).	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute type/program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign key to external database.	PROGSYS
STATE	VARCHAR2	2	State abbreviation.	PROGSYS
METERS	NUMBER	12	Length of event in meters.	PROGSYS
META_ID	VARCHAR2	18	Unique metadata identifier. Used as link to external metadata.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS
CYCLE	DATE		Cycle year of data.	PROGSYS
START_DATE	DATE		Start date of data.	PROGSYS
END_DATE	DATE		End data of data.	PROGSYS
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

ARCH_ps_P_gt (Point Archive Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique event identifier.	PROGSYS
P_MEAS	NUMBER	7.3	Point measure.	PROGSYS

ARCH_ps_P_gt (Point Archive Event Table)				
Column Name	Data Type	Width	Description	Source
EOFFSET	NUMBER	12.7	Event display offset.	PROGSYS
DUU_ID	NUMBER	10	NHD DUU identifier.	PROGSYS
RCH_CODE	VARCHAR2	14	NHD linear reach code: a numeric code that uniquely identifies a reach. This 14 digit code has two parts: the first eight digits are the HUC for the sub-basin in which the reach is located; the last six digits are a sequentially-ordered randomly assigned number.	PROGSYS
RCH_DATE	DATE		Date that the RCH_CODE was assigned (formatted: YYYYMMDD).	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute type/program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign key to external database.	PROGSYS
STATE	VARCHAR2	2	State abbreviation.	PROGSYS
META_ID	VARCHAR2	18	Unique metadata identifier. Used as link to external metadata.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS
CYCLE	DATE		Cycle year of data.	PROGSYS
START_DATE	DATE		Start date of data.	PROGSYS
END_DATE	DATE		End data of data.	PROGSYS
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

ARCH_ps_A_gt (Waterbody Archive Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique event identifier.	PROGSYS
DUU_ID	NUMBER	10	NHD DUU identifier.	PROGSYS
RCH_CODE	VARCHAR2	14	NHD area reach code: a numeric code that uniquely identifies a reach. This 14 digit code has two parts: the first eight digits are the HUC for the sub-basin in which the reach is located; the last six digits are a sequentially-ordered randomly assigned number.	PROGSYS
RCH_DATE	DATE		Date that the RCH_CODE was assigned (formatted: YYYYMMDD).	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute type/program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign key to external database.	PROGSYS
STATE	VARCHAR2	2	State abbreviation.	PROGSYS

ARCH_ps_A_gt (Waterbody Archive Event Table)				
Column Name	Data Type	Width	Description	Source
SQ_KM	NUMBER	18.3	Area of event in square kilometers.	PROGSYS
META_ID	VARCHAR2	18	Unique metadata identifier. Used as link to external metadata.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS
CYCLE	DATE		Cycle year of data.	PROGSYS
START_DATE	DATE		Start date of data.	PROGSYS
END_DATE	DATE		End data of data.	PROGSYS
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

ARCH_NS_ps_L_gt (Non Standard Linear Archive Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique Event Identifier.	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute Type/Program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute Value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign Key to external database.	PROGSYS
STATE	VARCHAR2	2	State Abbreviation.	PROGSYS
METERS	NUMBER	12.0	Length of event in meters.	PROGSYS
META_ID	VARCHAR2	18	Unique Metadata Identifier.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS
CYCLE	DATE		Cycle year of data.	PROGSYS
START_DATE	DATE		Start date of data.	PROGSYS
END_DATE	DATE		End data of data.	PROGSYS
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spatial representations of the features.	SDE/OS

ARCH_NS_ps_P_gt (Non Standard Point Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique Event Identifier.	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute Type/Program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute Value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign Key to external database.	PROGSYS
STATE	VARCHAR2	2	State Abbreviation.	PROGSYS
META_ID	VARCHAR2	18	Unique Metadata Identifier.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS
CYCLE	DATE		Cycle year of data.	PROGSYS
START_DATE	DATE		Start date of data.	PROGSYS
END_DATE	DATE		End data of data.	PROGSYS

ARCH_NS_ps_P_gt (Non Standard Point Event Table)				
Column Name	Data Type	Width	Description	Source
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spacial representations of the features.	SDE/OS

ARCH_NS_ps_A_gt (Non Standard Waterbody Archive Event Table)				
Column Name	Data Type	Width	Description	Source
EVENT_ID	VARCHAR2	19	Unique event identifier.	PROGSYS
ATTR_PRG	VARCHAR2	30	Attribute Type/Program being indexed.	PROGSYS
ATTR_VAL	VARCHAR2	20	Attribute Value being indexed.	PROGSYS
ENTITY_ID	VARCHAR2	60	Foreign Key to ext ernal database.	PROGSYS
STATE	VARCHAR2	2	State Abbreviation.	PROGSYS
SQ_KM	NUMBER	18.3	Area of event in square kilometers.	PROGSYS
META_ID	VARCHAR2	18	Unique Metadata Identifier.	PROGSYS
ORG_ID	VARCHAR2	10	Organization abbreviation.	PROGSYS
CYCLE	DATE		Cycle year of data.	PROGSYS
START_DATE	DATE		Start date of data.	PROGSYS
END_DATE	DATE		End data of data.	PROGSYS
RID	NUMBER/ GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spacial representations of the features.	SDE/OS

RAD_STHUC_STATUS_gt				
Column Name	Data Type	Width	Description	Source
HUC	VARCHAR2	40	8 digit hydrologic unit code	PROGSYS
ST	VARCHAR2	2	2 digit state identifier	PROGSYS
NAME	VARCHAR2	60	State name	PROGSYS
STATE	VARCHAR2	2	2 character state abbreviation	PROGSYS
HUC_CHAR	VARCHAR2	8	8 digit hydrologic unit code	PROGSYS
ST_HUC	VARCHAR2	10	State-huc combination based on STATE and HUC_CHAR with no separators	PROGSYS
ST_DASH_HUC	VARCHAR2	11	State-huc combination based on STATE and HUC_CHAR with '-' separator	PROGSYS
SQ_KM	NUMBER	19,3	Area of st/huc in measured in kilometers	PROGSYS
UNIQ_ID	NUMBER	7	Unique identifier	PROGSYS
RID	NUMBER / GEOMETRY	38 / NA	Manages the relationship between the business table and the feature table. Maintained by SDE and unique for the spatial column. / Contains spacial representations of the features.	SDE/OS

S_<prg_sys>	NUMBER	1	Flag indicating program system data exists	PROGSYS
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RAD_EVTPRG_LUT				
Column Name	Data Type	Width	Description	Source
PROGRAM		30	Program system abbreviation	PROGSYS
DESCRIPTION	VARCHAR2	99	Program system description	PROGSYS
RESTRICTION	VARCHAR2	10	Indicator for Download service restriction	PROGSYS
CYCLE_YEAR	VARCHAR2	3	Indicator for data management by cycle year	PROGSYS
TIME_SERIES	VARCHAR2	3	Indicator for data archived when updated	PROGSYS

RAD_NDZ_FBS (Additional NDZ Attribute Table)				
Column Name	Data Type	Width	Description	Source
ST_FIPS	VARCHAR2	10	FIPS code.	PROGSYS
NDZ_COUNT	NUMBER	10	Count of No Discharge Zones by state.	PROGSYS
STATE_CODE	VARCHAR2	20	State abbreviation.	PROGSYS
NDZ	VARCHAR2	10	No Discharge Zone ID.	PROGSYS

Event Metadata

There are six metadata tables associated with each program system. Three are associated with the production tables and three are associated with the archive tables. There is one for lines, points and areas. All four spatial layers (SDELOB and Oracle Spatial NHD referenced and SDELOB and Oracle Spatial custom shape) relate to a single metadata table of the same datatype. The archive tables metadata contain only the most current metadata record by meta_id. The archive metadata table structures match those for the production tables and therefore are not listed below.

Four of the attribute metadata sets (five rows for each set) appear only in selected event type metadata files. Two sets (ATTR9, ATTR11) are included in the L and P type files only, one set (ATTR10) are included in the L type files only, and one set (ATTR 12) is included in the L and A type files only.

Note: ps is the program system abbreviation (e.g., 303d, 305b, WQS, etc.) and type refers to the event type (i.e., L for line, A for area, and P for point).

RAD_ps_type_M				
Column Name	Data Type	Width	Description	Source
META_ID	VARCHAR2	18	ID of the metadata entry.	PROGSYS
ORIGIN	VARCHAR2	50	Person who created the data.	PROGSYS
PUBDATE	DATE		When the data source was released to the public.	PROGSYS
TITLE	VARCHAR2	30	Title of the metadata entry.	PROGSYS

RAD_ps_type_M				
Column Name	Data Type	Width	Description	Source
ABSTRACT	VARCHAR2	254	Brief description of the content in the data.	PROGSYS
PURPOSE	VARCHAR2	30	Intended purpose of the data.	PROGSYS
SUPPLINFO	VARCHAR2	254	Additional information describing the data content.	PROGSYS
NATIVE	VARCHAR2	30	Contains the version of the RIT used to create the events.	PROGSYS
BEGDATE	DATE		When the content was initially created.	PROGSYS
ENDDATE	DATE		When the content was last updated.	PROGSYS
D_CURRENT	VARCHAR2	35	The basis on which the time period of content information is determined.	PROGSYS
PROGRESS	VARCHAR2	30	Specifies if the content is currently worked on.	PROGSYS
D_UPDATE	VARCHAR2	30	Describes how often the data content is updated.	PROGSYS
ACCCONST	VARCHAR2	7	Restrictions and legal prerequisites for accessing the data set.	PROGSYS
USECONST	VARCHAR2	7	Restrictions and legal prerequisites for using the data set after access is granted.	PROGSYS
WESTBC	NUMBER	20.8	The most westerly coordinate.	PROGSYS
SOUTHBC	NUMBER	20.8	The most south coordinate.	PROGSYS
NORTHBC	NUMBER	20.8	The most north coordinate.	PROGSYS
EASTBC	NUMBER	20.8	The most easterly coordinate.	PROGSYS
THEMEKT	VARCHAR2	4	Reference to a formally registered thesaurus or a similar authoritative source of theme keyword.	PROGSYS
THEMEKEY1	VARCHAR2	40	Common-use word or phrase used to describe the subject of the data set (1st).	PROGSYS
THEMEKEY2	VARCHAR2	40	Common-use word or phrase used to describe the subject of the data set (2nd).	PROGSYS
THEMEKEY3	VARCHAR2	40	Common-use word or phrase used to describe the subject of the data set (3rd).	PROGSYS
THEMEKEY4	VARCHAR2	40	Common-use word or phrase used to describe the subject of the data set (4th).	PROGSYS
THEMEKEY5	VARCHAR2	40	Common-use word or phrase used to describe the subject of the data set (5th).	PROGSYS
PLACEKT	VARCHAR2	4	Reference to a formally registered thesaurus or a similar authoritative source of place keyword.	PROGSYS
PLACEKEY1	VARCHAR2	40	The geographic name of a location covered by a data set (1st).	PROGSYS
PLACEKEY2	VARCHAR2	40	The geographic name of a location covered by a data set (2nd).	PROGSYS

RAD_ps_type_M				
Column Name	Data Type	Width	Description	Source
PLACEKEY3	VARCHAR2	40	The geographic name of a location covered by a data set (3rd).	PROGSYS
CNTPER	VARCHAR2	50	Name of contact person, if there are questions concerning the data.	PROGSYS
CNTORG	VARCHAR2	50	Organization for which the person works.	PROGSYS
ADDRTYPE	VARCHAR2	15	Type of address given (mail/physical).	PROGSYS
ADDRESS	VARCHAR2	100	Address of contact person.	PROGSYS
CITY	VARCHAR2	25	City of contact person.	PROGSYS
STATE	VARCHAR2	30	State of contact person.	PROGSYS
POSTAL	VARCHAR2	11	Zip code.	PROGSYS
CNTVOICE	VARCHAR2	10	Voice phone number.	PROGSYS
CNTFAC	VARCHAR2	10	Fax phone number.	PROGSYS
CNTEMAIL	VARCHAR2	75	E-mail of contact person.	PROGSYS
ATTRACCR	VARCHAR2	254	Accuracy of the data.	PROGSYS
HORIZPAR	VARCHAR2	254	Explanation of the accuracy of the horizontal coordinate measurements and a description of the tests used.	PROGSYS
LOGIC	VARCHAR2	7	Explanation of the fidelity of relationships in the data set and tests used.	PROGSYS
COMPLETE	VARCHAR2	7	Information about omissions, selection criteria, generalization, definitions used, and other rules used to derive the data set.	PROGSYS
PROCDESC	VARCHAR2	254	Process used to create the data.	PROGSYS
PROCDATE	DATE		Date the data was processed.	PROGSYS
SRCUSED	VARCHAR2	20	Sources used to create the data.	PROGSYS
ENTTYPD	VARCHAR2	254	Description of the entity type.	PROGSYS
ENTTYPDS	VARCHAR2	55	Description of the entity type.	PROGSYS
MAPPROJN	VARCHAR2	50	Projection of the data.	PROGSYS
FEAST	NUMBER	20.10	False easting information of coordinate system.	PROGSYS
FNORTH	NUMBER	20.10	False northing information of coordinate system.	PROGSYS
STDPARLL1	NUMBER	12.8	1 st standard parallel of coordinate system.	PROGSYS
STDPARLL2	NUMBER	12.8	2 nd standard parallel of coordinate system.	PROGSYS
LONGCM	NUMBER	12.8	Central meridian of coordinate system.	PROGSYS
LATPROJ	NUMBER	12.8	Central parallel of coordinate system.	PROGSYS
SFEQUAT	NUMBER	12.8	Scale factor of projection.	PROGSYS
HORIZDN	VARCHAR2	40	Datum of projection.	PROGSYS
UNIT	VARCHAR2	10	Units of projection/coordinate system.	PROGSYS
DIRECT	VARCHAR2	6	System of objects used to represent space in the dataset.	PROGSYS

RAD_ps_type_M				
Column Name	Data Type	Width	Description	Source
S_NUMBER	NUMBER	1.0	Number of sources used.	PROGSYS
ORIGINX ¹	VARCHAR2	30	Originator of X th source.	PROGSYS
TITLEX ¹	VARCHAR2	150	Title/description of X th source.	PROGSYS
SRCSCALEX ¹	VARCHAR2	12	Scale of X th source.	PROGSYS
TYPESRCX ¹	VARCHAR2	20	Media of X th source.	PROGSYS
BEGDATEX ¹	DATE		Creation date of X th source.	PROGSYS
ENDDATEX ¹	DATE		Finish date of X th source.	PROGSYS
SRCCURRX ¹	VARCHAR2	35	Currentness of X th source.	PROGSYS
SRCCITEAX ¹	VARCHAR2	20	Abbreviation of X th source.	PROGSYS
SRCCONTRX ¹	NUMBER	3.0	A value in % describing the contribution of the source to the data.	PROGSYS
ATTRLABL1	VARCHAR2	8	Label for the 1 st field in the table.	PROGSYS
ATTRDEF1	VARCHAR2	170	Definition of the 1 st field in the table.	PROGSYS
ATTRDEFS1	VARCHAR2	21	Source of the values for the 1 st field.	PROGSYS
RDOMMIN1	VARCHAR2	19	Minimum value.	PROGSYS
RDOMMAX1	VARCHAR2	19	Maximum value.	PROGSYS
ATTRLABL2	VARCHAR2	6	Label for the 2 nd field in the table.	PROGSYS
ATTRDEF2	VARCHAR2	65	Definition of the 2 nd field in the table.	PROGSYS
ATTRDEFS2	ARCHAR2	3	Source of the values for the 2 nd field.	PROGSYS
RDOMMIN2	VARCHAR2	10	Minimum value.	PROGSYS
RDOMMAX2	VARCHAR2	10	Maximum value.	PROGSYS
ATTRLABL3	VARCHAR2	8	Label for the 3 rd field in the table.	PROGSYS
ATTRDEF3	VARCHAR2	254	Definition of the 3 rd field in the table.	PROGSYS
ATTRDEFS3	VARCHAR2	3	Source of the values for the 3 rd field.	PROGSYS
CODESETN3	VARCHAR2	15	Title of the codeset.	PROGSYS
CODESETS3	VARCHAR2	8	Authority for the codeset.	PROGSYS
ATTRLABL4	VARCHAR2	8	Label for the 4 th field in the table.	PROGSYS
ATTRDEF4	VARCHAR2	65	Definition of the 4 th field in the table.	PROGSYS
ATTRDEFS4	VARCHAR2	3	Source of the values for the 4 th field.	PROGSYS
RDOMMIN4	VARCHAR2	8	Minimum value.	PROGSYS
RDOMMAX4	VARCHAR2	8	Maximum value.	PROGSYS
ATTRLABL5	VARCHAR2	5	Label for the 5 th field in the table.	PROGSYS
ATTRDEF5	VARCHAR2	50	Definition of the 5 th field in the table.	PROGSYS
ATTRDEFS5	VARCHAR2	10	Source of the values for the 5 th field.	PROGSYS
CODESETN5	VARCHAR2	40	Title of the codeset.	PROGSYS
CODESETS5	VARCHAR2	40	Authority for the codeset.	PROGSYS
ATTRLABL6	VARCHAR2	9	Label for the 6 th field in the table.	PROGSYS
ATTRDEF6	VARCHAR2	130	Definition of the 6 th field in the table.	PROGSYS
ATTRDEFS6	VARCHAR2	7	Source of the values for the 6 th field.	PROGSYS
CODESETN6	VARCHAR2	12	Title of the codeset.	PROGSYS
CODESETS6	VARCHAR2	5	Authority for the codeset.	PROGSYS
ATTRLABL7	VARCHAR2	8	Label for the 7 th field in the table.	PROGSYS
ATTRDEF7	VARCHAR2	55	Definition of the 7 th field in the table.	PROGSYS
ATTRDEFS7	VARCHAR2	7	Source of the values for the 7 th field.	PROGSYS
CODESETN7	VARCHAR2	12	Title of the codeset.	PROGSYS
CODESETS7	VARCHAR2	5	Authority for the codeset.	PROGSYS
ATTRLABL8	VARCHAR2	8	Label for the 8 th field in the table.	PROGSYS

RAD_ps_type_M				
Column Name	Data Type	Width	Description	Source
ATTRDEF8	VARCHAR2	65	Definition of the 8 th field in the table.	PROGSYS
ATTRDEFS8	VARCHAR2	7	Source of the values for the 8 th field.	PROGSYS
CODESETN8	VARCHAR2	12	Title of the codeset.	PROGSYS
CODESETS8	VARCHAR2	5	Authority for the codeset.	PROGSYS
ATTRLABL9 (L & P type only)	VARCHAR2	6	Label for the 9 th field in the table.	PROGSYS
ATTRDEF9 (L & P type only)	VARCHAR2	55	Definition of the 9 th field in the table.	PROGSYS
ATTRDEFS9 (L & P type only)	VARCHAR2	20	Source of the values for the 9 th field.	PROGSYS
RDOMMIN9 (L & P type only)	VARCHAR2	1	Minimum value.	PROGSYS
RDOMMAX9 (L & P type only)	VARCHAR2	3	Maximum value.	PROGSYS
ATTRLABL10 (L type only)	VARCHAR2	6	Label for the 10 th field in the table.	PROGSYS
ATTRDEF10 (L type only)	VARCHAR2	55	Definition of the 10 th field in the table.	PROGSYS
ATTRDEFS10 (L type only)	VARCHAR2	20	Source of the values for the 10 th field.	PROGSYS
RDOMMIN10 (L type only)	VARCHAR2	1	Minimum value.	PROGSYS
RDOMMAX10 (L type only)	VARCHAR2	3	Maximum value.	PROGSYS
ATTRLABL11 (L & P type only)	VARCHAR2	10	Label for the 11 th field in the table.	PROGSYS
ATTRDEF11 (L & P type only)	VARCHAR2	200	Definition of the 11 th field in the table.	PROGSYS
ATTRDEFS11 (L & P type only)	VARCHAR2	20	Source of the values for the 11 th field.	PROGSYS
CODESETN11 (L & P type only)	VARCHAR2	20	Minimum value.	PROGSYS
CODESETS11 (L & P type only)	VARCHAR2	20	Maximum value.	PROGSYS
ATTRLABL12 (L & A type only)	VARCHAR2	10	Label for the 12 th field in the table.	PROGSYS
ATTRDEF12 (L & A type only)	VARCHAR2	52	Definition of the 12 th field in the table.	PROGSYS
ATTRDEFS12 (L & A type only)	VARCHAR2	20	Source of the values for the 12 th field.	PROGSYS
CODESETN12 (L & A type only)	VARCHAR2	20	Minimum value.	PROGSYS
CODESETS12 (L & A type only)	VARCHAR2	20	Maximum value.	PROGSYS
METD	DATE		Date when the metadata was created.	PROGSYS
M_CNTPER	VARCHAR2	50	Name of the contact person, if there are questions concerning the data.	PROGSYS
M_CNTORG	VARCHAR2	50	Organization for which the person works.	PROGSYS

RAD_ps_type_M				
Column Name	Data Type	Width	Description	Source
M_ADDRTYPE	VARCHAR2	15	Type of address given below.	PROGSYS
M_ADDRESS	VARCHAR2	100	Address of contact person.	PROGSYS
M_CITY	VARCHAR2	25	City of contact person.	PROGSYS
M_STATE	VARCHAR2	30	State of contact person.	PROGSYS
M_POSTAL	VARCHAR2	11	Zip code.	PROGSYS
M_CNTVOICE	VARCHAR2	10	Voice phone number.	PROGSYS
M_CNTFAC	VARCHAR2	10	Fax phone number.	PROGSYS
M_CNTEMAIL	VARCHAR2	75	E-mail of contact person.	PROGSYS
METSTDN	VARCHAR2	55	The name of the metadata standard used to document the data set.	PROGSYS
METSTDV	VARCHAR2	45	Identification of the version of the metadata standard used to document the data set.	PROGSYS

RAD_STATE_ps				
Column Name	Data Type	Width	Description	Source
STATE	VARCHAR2	2	State abbreviation used to determine which states are approved for replication to the Internet version of the RAD.	PROGSYS

APPENDIX B

NHD RAD Index and Constraint Data Dictionary

The following table contains a list of the indexes, unique, primary and foreign key constraints for all NHD RAD tables. Note that these do not include the various indexes and constraints managed by SDE and Oracle Spatial for the NHD RAD. The gt refers to the type of table: Oracle Spatial (OS) or SDE Binary (SDE). The ps refers to the specific program system for those event data.

Table Name	Constraint/Index Name	Type	Description
RAD_ps_A_gt	RAD_ps_A_gt_ENT	index	index on entity_id
RAD_ps_A_gt	RAD_ps_A_gt_RCH	index	index on rch_code
RAD_ps_A_gt	RAD_ps_A_gt_STATE	index	index on state
RAD_ps_A_gt	RAD_ps_A_gt_METAID	index	index on meta_id
RAD_ps_A_gt	RAD_ps_A_gt_ORGID	index	index on org_id
RAD_ps_A_OS	RADps_A_SPIDX	spatial index	index on rid
RAD_ps_L_gt	RAD_ps_L_gt_ENT	index	index on entity_id
RAD_ps_L_gt	RAD_ps_L_gt_RCH	index	index on rch_code
RAD_ps_L_gt	RAD_ps_L_gt_STATE	index	index on state
RAD_ps_L_gt	RAD_ps_L_gt_METAID	index	index on meta_id
RAD_ps_L_gt	RAD_ps_L_gt_ORGID	index	index on org_id
RAD_ps_L_OS	RADps_L_SPIDX	spatial index	index on rid
RAD_ps_P_gt	RAD_ps_P_gt_ENT	index	index on entity_id
RAD_ps_P_gt	RAD_ps_P_gt_RCH	index	index on rch_code
RAD_ps_P_gt	RAD_ps_P_gt_STATE	index	index on state
RAD_ps_P_gt	RAD_ps_P_gt_METAID	index	index on meta_id
RAD_ps_P_gt	RAD_ps_P_gt_ORGID	index	index on org_id
RAD_ps_P_OS	RADps_P_SPIDX	spatial index	index on rid
RAD_NS_ps_A_gt	RAD_NS_ps_A_gt_ENT	index	index on entity_id
RAD_NS_ps_A_gt	RAD_NS_ps_A_gt_STATE	index	index on state
RAD_NS_ps_A_gt	RAD_NS_ps_A_gt_METAID	index	index on meta_id
RAD_NS_ps_A_gt	RAD_NS_ps_A_gt_ORGID	index	index on org_id
RAD_NS_ps_A_OS	RADNSps_A_SPIDX	spatial index	index on rid
RAD_NS_ps_L_gt	RAD_NS_ps_L_gt_ENT	index	index on entity_id
RAD_NS_ps_L_gt	RAD_NS_ps_L_gt_STATE	index	index on state
RAD_NS_ps_L_gt	RAD_NS_ps_L_gt_METAID	index	index on meta_id
RAD_NS_ps_L_gt	RAD_NS_ps_L_gt_ORGID	index	index on org_id
RAD_NS_ps_L_OS	RADNSps_L_gt_SPIDX	spatial index	index on rid
RAD_NS_ps_P_gt	RAD_NS_ps_P_gt_ENT	index	index on entity_id
RAD_NS_ps_P_gt	RAD_NS_ps_P_gt_STATE	index	index on state
RAD_NS_ps_P_gt	RAD_NS_ps_P_gt_METAID	index	index on meta_id
RAD_NS_ps_P_gt	RAD_NS_ps_P_gt_ORGID	index	index on org_id
RAD_NS_ps_P_OS	RADNSps_P_gt_SPIDX	spatial index	index on rid
ARCH_ps_A_gt	ARCH_ps_A_gt_ENT	index	index on entity_id
ARCH_ps_A_gt	ARCH_ps_A_gt_EVTID	index	index on event_id
ARCH_ps_A_gt	ARCH_ps_A_gt_METAID	spatial index	index on meta_id
ARCH_ps_A_gt	ARCH_ps_A_gt_RCH	index	index on rch_code

Table Name	Constraint/Index Name	Type	Description
ARCH_ps_A_gt	ARCH_ps_A_gt_STATE	index	index on state
ARCH_ps_A_gt	ARCH_ps_A_gt_STARTDATE	index	index on start_date
ARCH_ps_A_gt	ARCH_ps_A_gt_ENDDATE	index	index on end_date
ARCH_ps_A_gt	ARCH_ps_A_gt_CYCLE	index	index on cycle
ARCH_ps_A_gt	ARCH_ps_A_gt_ORGID	index	index on org_id
ARCH_ps_A_OS	ARCHps_A_SPIDX	spatial index	index on rid
ARCH_ps_L_gt	ARCH_ps_L_gt_EVTID	index	index on event_id
ARCH_ps_L_gt	ARCH_ps_L_gt_ENT	index	index on entity_id
ARCH_ps_L_gt	ARCH_ps_L_gt_METAID	index	index on meta_id
ARCH_ps_L_gt	ARCH_ps_L_gt_RCH	index	index on rch_code
ARCH_ps_L_gt	ARCH_ps_L_gt_STATE	index	index on state
ARCH_ps_L_gt	ARCH_ps_L_gt_STARTDATE	index	index on start_date
ARCH_ps_L_gt	ARCH_ps_L_gt_ENDDATE	index	index on end_date
ARCH_ps_L_gt	ARCH_ps_L_gt_CYCLEspatial	index	index on cycle
ARCH_ps_L_gt	ARCH_ps_L_gt_ORGID	index	index on org_id
ARCH_ps_L_OS	ARCHps_L_SPIDX	spatial index	index on rid
ARCH_ps_P_gt	ARCH_ps_P_gt_EVTID	index	index on event_id
ARCH_ps_P_gt	ARCH_ps_P_gt_ENT	index	index on entity_id
ARCH_ps_P_gt	ARCH_ps_P_gt_METAID	index	index on meta_id
ARCH_ps_P_gt	ARCH_ps_P_gt_RCH	index	index on rch_code
ARCH_ps_P_gt	ARCH_ps_P_gt_STATE	index	index on state
ARCH_ps_P_gt	ARCH_ps_P_gt_STARTDATE	index	index on start_date
ARCH_ps_P_gt	ARCH_ps_P_gt_ENDDATE	index	index on end_date
ARCH_ps_P_gt	ARCH_ps_P_gt_CYCLE	index	index on cycle
ARCH_ps_P_gt	ARCH_ps_P_gt_ORGID	index	index on org_id
ARCH_ps_P_OS	ARCHps_P_SPIDX	spatial index	index on rid
ARCH_NS_ps_A_gt	ARCH_NS_ps_A_gt_EVTID	index	index on event_id
ARCH_NS_ps_A_gt	ARCH_NS_ps_A_gt_ENT	index	index on entity_id
ARCH_NS_ps_A_gt	ARCH_NS_ps_A_gt_METAID	index	index on meta_id
ARCH_NS_ps_A_gt	ARCH_NS_ps_A_gt_STATE	index	index on state
ARCH_NS_ps_A_gt	ARCH_NS_ps_A_gt_STARTDATE	index	index on start_date
ARCH_NS_ps_A_gt	ARCH_NS_ps_A_gt_ENDDATE	index	index on end_date
ARCH_NS_ps_A_gt	ARCH_NS_ps_A_gt_CYCLE	index	index on cycle
ARCH_NS_ps_A_gt	ARCH_NS_ps_A_gt_ORGID	index	index on org_id
ARCH_NS_ps_A_OS	ARCHNSps_A_SPIDX	spatial index	index on rid
ARCH_NS_ps_L_gt	ARCH_NS_ps_L_gt_EVTID	index	index on event_id
ARCH_NS_ps_L_gt	ARCH_NS_ps_L_gt_ENT	index	index on entity_id
ARCH_NS_ps_L_gt	ARCH_NS_ps_L_gt_METAID	index	index on meta_id
ARCH_NS_ps_L_gt	ARCH_NS_ps_L_gt_STATE	index	index on state
ARCH_NS_ps_L_gt	ARCH_NS_ps_L_gt_STARTDATE	index	index on start_date
ARCH_NS_ps_L_gt	ARCH_NS_ps_L_gt_ENDDATE	index	index on end_date
ARCH_NS_ps_L_gt	ARCH_NS_ps_L_gt_CYCLE	index	index on cycle
ARCH_NS_ps_L_gt	ARCH_NS_ps_L_gt_ORGID	index	index on org_id

Table Name	Constraint/Index Name	Type	Description
ARCH_NS_ps_L_OS	ARCHNSps_L_SPIDX	spatial index	index on rid
ARCH_NS_ps_P_gt	ARCH_NS_ps_P_gt_EVTID	index	index on event_id
ARCH_NS_ps_P_gt	ARCH_NS_ps_P_gt_ENT	index	index on entity_id
ARCH_NS_ps_P_gt	ARCH_NS_ps_P_gt_METAID	index	index on meta_id
ARCH_NS_ps_P_gt	ARCH_NS_ps_P_gt_STATE	index	index on state
ARCH_NS_ps_P_gt	ARCH_NS_ps_P_gt_STARTDATE	index	index on start_date
ARCH_NS_ps_P_gt	ARCH_NS_ps_P_gt_ENDDATE	index	index on end_date
ARCH_NS_ps_P_gt	ARCH_NS_ps_P_gt_CYCLE	index	index on cycle
ARCH_NS_ps_P_gt	ARCH_NS_ps_P_gt_ORGID	index	index on org_id
ARCH_NS_ps_P_OS	ARCHNSps_P_SPIDX	spatial index	index on rid
AREALM_gt	RAD_AREALM_gt_FCODE	index	index on fcode
AREARCH_gt	RAD_AREARCH_gt_RCH_CODE	index	index on rch_code
DFLOW	RAD_DFLOW_FLOWID1	index	index on flow_id_1
DFLOW	RAD_DFLOW_FLOWID2	index	index on flow_id_2
DRAIN_gt	RAD_DRAIN_FCODE_gt	index	index on fcode
DRAIN_gt	RAD_DRAIN_FLOWID_gt	index	index on flow_id
DUU2FEA	RAD_DUU2FEA_COM_ID	index	index on com_id
FCODE	RAD_FCODE_FCODE	index	index on fcode
LINEARLM_gt	RAD_LINEARLM_FCODE_gt	index	index on fcode
LINEARRCH_gt	RAD_LINEARRCH_RCH_CODE_gt	index	index on rch_code
NODE_gt	RAD_NODE_ABOVE_ID_gt	index	index on above_id
NODE_gt	RAD_NODE_BELOW_ID_gt	index	index on below_id
POINT_gt	RAD_POINT_FCODE_gt	index	index on fcode
RFLOW	RAD_RFLOW_COM_ID1	index	index on com_id_1
RFLOW	RAD_RFLOW_COM_ID2	index	index on com_id_2
WB_gt	RAD_WB_FCODE_gt	index	index on fcode
WB_gt	RAD_WB_RCH_COM_ID_gt	index	index on com_id
AREARCH_gt	UK_gt_AREARCH_RCHCODE	unique	unique constraint on rch_code
LINEARRCH_gt	UK_gt_LINEARRCH_RCHCODE	unique	unique constraint on rch_code
AREALM_gt	FK_gt_AREALM_FCODE	foreign	foreign key constraint from fcode to fcode.fcode
DRAIN_gt	FK_gt_DRAIN_FCODE	foreign	foreign key constraint from fcode to fcode.fcode
DRAIN_gt	FK_gt_DRAIN_WBCOMIDFK	foreign	foreign key constraint from wb_comid_fk to wb_gt.com_id
DUU2FEA	FK_gt_DUU2FEA_DUUDID	foreign	foreign key constraint from duu_id to duudom_gt.duu_id
LINEARLM_gt	FK_gt_LINEARLM_FCODE	foreign	foreign key constraint from fcode to fcode.fcode
POINT_gt	FK_gt_POINT_FCODE	foreign	foreign key constraint from fcode to fcode.fcode
WB_gt	FK_gt_WB_FCODE	foreign	foreign key constraint from fcode to fcode.fcode

Table Name	Constraint/Index Name	Type	Description
RFLOW	FK_ATTR_RFLOW_COMID1	foreign	foreign key constraint from com_id_1 to linearrch_gt.com_d: implemented post load
RFLOW	FK_ATTR_RFLOW_COMID2	foreign	foreign key constraint from com_id_2 to linearrch_gt.com_d: implemented post load
AREALM_gt	PK_gt_AREALM_COMID	primary	primary key constraint on com_id
AREARCH_gt	PK_gt_AREARCH_COMID	primary	primary key constraint on com_id
WB_gt	PK_gt_WB_COMID	primary	primary key constraint on com_id
LINEARLM_gt	PK_gt_LINEARLM_COMID	primary	primary key constraint on com_id
LINEARRCH_gt	PK_gt_LINEARRCH_COMID	primary	primary key constraint on com_id
DRAIN_gt	PK_gt_DRAIN_COMID	primary	primary key constraint on com_id
DUUDOM_gt	PK_gt_DUUDOM_DUUID	primary	primary key constraint on duu_id
NODE_gt	PK_gt_NODE_COMID	primary	primary key constraint on com_id
POINT_gt	PK_gt_POINT_COMID	primary	primary key constraint on com_id
FCODE	PK_ATTR_FCODE_FCODE	primary	primary key constraint on fcode
FREL	PK_ATTR_FREL_RELCOMID	primary	primary key constraint on rel_com_id
RFLOW	PK_ATTR_RFLOW_RELCOMID	primary	primary key constraint on rel_com_id
NHD_MD_ALL	PK_NHD_MD_ALL_DUUNAME	primary	primary key constraint on duu_name
NHD_CAN_INFO	PK_NHD_CAN_INFO	primary	primary key constraint on can_name
NHD_FEAT_TRACK	PK_NHD_FEAT_TRACK	primary	primary key constraint on can_name, unique_id
RAD_ps_L_gt	FK_PT_ps_L_gt_META_ID	foreign	foreign key constraint from meta_id to rad_ps_l_m.meta_id
RAD_ps_L_gt	FK_PT_ps_L_gt_DUU_ID	foreign	foreign key constraint from duu_id to duudom.duu_id
RAD_ps_L_gt	FK_PT_ps_L_gt_RCH_CODE	foreign	foreign key constraint from rch_code to linearrch.rch_code
RAD_ps_L_gt	FK_PT_ps_L_gt_STATE	foreign	foreign key constraint from state to states.state

Table Name	Constraint/Index Name	Type	Description
RAD_ps_P_gt	FK_PT_ps_P_gt_META_ID	foreign	foreign key constraint from meta_id to rad_ps_p_m.meta_id
RAD_ps_P_gt	FK_PT_ps_P_gt_DUU_ID	foreign	foreign key constraint from duu_id to duudom.duu_id
RAD_ps_P_gt	FK_PT_ps_P_gt_RCH_CODE	foreign	foreign key constraint from rch_code to linearrch.rch_code
RAD_ps_P_gt	FK_PT_ps_P_gt_STATE	foreign	foreign key constraint from state to states.state
RAD_ps_A_gt	FK_PT_ps_A_gt_META_ID	foreign	foreign key constraint from meta_id to rad_ps_a_m.meta_id
RAD_ps_A_gt	FK_PT_ps_A_gt_DUU_ID	foreign	foreign key constraint from duu_id to duudom.duu_id
RAD_ps_A_gt	FK_PT_ps_A_gt_RCH_CODE	foreign	foreign key constraint from rch_code to arearch.rch_code
RAD_ps_A_gt	FK_PT_ps_A_gt_STATE	foreign	foreign key constraint from state to states.state
RAD_NS_ps_L_gt	FK_PT_NS_ps_L_gt_STATE	foreign	foreign key constraint from state to states.state
RAD_NS_ps_L_gt	FK_PT_NS_ps_L_gt_META_ID	foreign	foreign key constraint from meta_id to rad_ps_l_m.meta_id
RAD_NS_ps_P_gt	FK_PT_NS_ps_P_gt_STATE	foreign	foreign key constraint from state to states.state
RAD_NS_ps_P_gt	FK_PT_NS_ps_P_gt_META_ID	foreign	foreign key constraint from meta_id to rad_ps_p_m.meta_id
RAD_NS_ps_A_gt	FK_PT_NS_ps_A_gt_STATE	foreign	foreign key constraint from state to states.state
RAD_NS_ps_A_gt	FK_PT_NS_ps_A_gt_META_ID	foreign	foreign key constraint from meta_id to rad_ps_a_m.meta_id
TEMP_LINE	FK_T_LINE_DUU_ID	foreign	foreign key constraint from duu_id to duudom.duu_id
TEMP_LINE	FK_T_LINE_RCH_CODE	foreign	foreign key constraint from rch_code to linearrch.rch_code
TEMP_LINE	FK_T_LINE_STATE	foreign	foreign key constraint from state to states.state
TEMP_POINT	FK_T_POINT_DUU_ID	foreign	foreign key constraint from duu_id to duudom.duu_id
TEMP_POINT	FK_T_POINT_RCH_CODE	foreign	foreign key constraint from rch_code to linearrch.rch_code

Table Name	Constraint/Index Name	Type	Description
TEMP_POINT	FK_T_POINT_STATE	foreign	foreign key constraint from state to states.state
TEMP_AREA	FK_T_AREA_DUU_ID	foreign	foreign key constraint from duu_id to duudom.duu_id
TEMP_AREA	FK_T_AREA_RCH_CODE	foreign	foreign key constraint from rch_code to arearch.rch_code
TEMP_AREA	FK_T_AREA_STATE	foreign	foreign key constraint from state to states.state
TEMP_NS_LINE	FK_T_NS_LINE_STATE	foreign	foreign key constraint from state to states.state
TEMP_NS_POINT	FK_T_NS_POINT_STATE	foreign	foreign key constraint from state to states.state
TEMP_NS_AREA	FK_T_NS_AREA_STATE	foreign	foreign key constraint from state to states.state