

**National Mapping Program
Technical Instructions**

Part 2 Hydrography

**Standards for 1:24,000-Scale
Digital Line Graphs and
Quadrangle Maps**

**U.S. Department of the Interior
U.S. Geological Survey
National Mapping Division**

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

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ANCHORAGE - An area where a vessel anchors or may anchor, either because of suitability or designation.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Anchorage Type	Function or purpose
Explosives Isolation	Area designated for the detainment of ships carrying explosives
Quarantine	Area designated for the detainment of quarantined ships
Seaplane	Area designated for the anchoring of seaplanes
Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required

DELINEATION

The limit of ANCHORAGE is the extent of the area suitable or designated for anchoring.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If ANCHORAGE is for seaplanes,
 Then ANCHORAGE is represented as a 0-dimensional basic feature object.

If ANCHORAGE is for explosives isolation or quarantine,
 Then ANCHORAGE is represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

For topographic/bathymetric editions only, if ANCHORAGE is on the final compilation provided to USGS by NOS,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

Graphic

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Postscript image not in the database.  Symbol#: ANCHORAGE_P001
 Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Anchorage Type	Seaplane	N/A	N/A
Name	(Alphanumeric) or Unspecified		

Postscript image not in the database.  Symbol#: ANCHORAGE_A001
 Dimension: 2

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Anchorage Type	Explosives Isolation	<u>Dashed Area Perimeter</u> Color: Black	Anchorage Type and Name: Color: Black
Name	(Alphanumeric) or Unspecified	Lineweight: 0.005" Dash Length: 0.1" Dash Spacing: 0.02"	Style: UI C/lc Size: 7 Spacing: 0

Postscript image not in the database.



Symbol#: ANCHORAGE_A002
 Dimension: 2

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Anchorage Type	Quarantine	<u>Dashed Area Perimeter</u>	Anchorage Type and Name:
Name	(Alphanumeric) or Unspecified	Color: Black Lineweight: 0.01" Dash Length: 0.1" Dash Spacing: 0.02"	Color: Black Style: UI C/lc Size: 7 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

AREA OF COMPLEX CHANNELS - An area where a stream or river flows in an intricate network of interlacing channels.

ATTRIBUTE/ATTRIBUTE VALUE LIST

N/A

DELINEATION

The limit of AREA OF COMPLEX CHANNELS is the outer bank of the outermost channel.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Connects To		CONNECTOR JUNCTION
Flows To		CONNECTOR JUNCTION
Is Above		UNDERPASS

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If AREA OF COMPLEX CHANNELS contains at least five subchannels and is ≥ 0.88 " along the shortest axis and ≥ 2.64 " along the longest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If AREA OF COMPLEX CHANNELS coincides with SWAMP/MARSH or with a 2-dimensional STREAM/RIVER,
Then capture both AREA OF COMPLEX CHANNELS and the other feature.

If AREA OF COMPLEX CHANNELS is part of WATERCOURSE,
Then collect the name with WATERCOURSE.

Graphic

Brown sand areas within AREA OF COMPLEX CHANNELS are captured as BARREN LAND (Nonvegetative Surface Cover theme).

Revision - General

Revision - Standard

Revision - Limited

Do not add new features. Modify existing features only if there are obvious changes in the stream channels.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

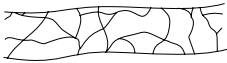
Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization



Symbol#: AREA_OF_COMPLEX_CHANNELS_A001
 Dimension: 2

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	Area Fill Color: Blue Pattern: USGS 27 Area Perimeter Color: Blue Lineweight: 0.008"	N/A

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If AREA OF COMPLEX CHANNELS coincides 2-dimensional CANAL/DITCH, INUNDATION AREA, LAKE/POND, or 2-dimensional STREAM/RIVER, Then do not plot Area Fill for AREA OF COMPLEX CHANNELS where coincident.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Cameron, MT

AREA TO BE SUBMERGED - The known extent of the intended lake that will be created behind a dam under construction.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Elevation (Integer Value)	The vertical distance from a given datum Minimum Value: -1289 Maximum Value: 29030 Precision: 0 Length: 5 Increment: 1 Units: feet
Name (Alphanumeric)	Proper name, specific term, or expression Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of **AREA TO BE SUBMERGED** is the line corresponding to the average water elevation of the intended lake.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If AREA TO BE SUBMERGED is $\geq 0.5''$ along the shortest axis and the perimeter coincides DAM/WEIR that meets capture conditions,
 Then capture.

Attribute Information

Source Interpretation Guidelines

All

All features inside of AREA TO BE SUBMERGED will be captured as they normally would, if they meet capture conditions.

Graphic

Capture all.

DAM/WEIR under construction on an existing graphic may be completed by the time it is captured digitally. Regardless, remain true to the date of the graphic and capture DAM/WEIR with Operational Status = Under Construction and the intended lake as AREA TO BE SUBMERGED.

Revision - General

Revision - Standard

Revision - Limited

The limits for AREA TO BE SUBMERGED and the values for the Attributes of Elevation and Name may have to be obtained from the operating agency or other ancillary sources.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: AREA_TO_BE_SUBMERGED_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Elevation	(Integer)	<u>Area Fill</u> Color: Blue Pattern: USGS 17	Elevation: Color: Blue Style: UI Size: 5 Spacing: 0
Name	(Alphanumeric) or Unspecified	<u>Area Perimeter</u> Color: Blue Lineweight: 0.008"	Name: Color: Blue Style: SLI CAPS or C/lc Size: 8-12 Spacing: 0-15

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If AREA TO BE SUBMERGED coincides 2-dimensional CANAL/DITCH, INUNDATION AREA, LAKE/POND, or 2-dimensional STREAM/RIVER, Then do not plot Area Fill for AREA TO BE SUBMERGED where coincident.

If AREA TO BE SUBMERGED coincides RESERVOIR and Reservoir Type = Aquaculture, Decorative

Pool, Disposal with Disposal Type = Unspecified, Treatment, or Water Storage,
Then do not plot Area Fill for AREA TO BE SUBMERGED where coincident.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Avant SE, OK
Huttig, AR-LA (AREA TO BE SUBMERGED and INUNDATION AREA)
Lanett North, GA-AL

BAY/INLET - A water area that is an opening of the sea/ocean into the land, or of an estuary, lake, or river into its shore.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of BAY/INLET is SHORELINE of ESTUARY, LAKE/POND, SEA/OCEAN, or STREAM/RIVER, and the extension of shoreline across the mouth of BAY/INLET and across any area where a river enters BAY/INLET.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If BAY/INLET is named,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

The feature BAY/INLET is included in the GNIS feature class "bay". According to GNIS, bays can be described by about 40 generics. GNIS maintains a list of feature classes and related generics. Contact GNIS for more information.

If BAY/INLET meets capture conditions,
Then capture BAY/INLET, and ESTUARY, LAKE/POND, SEA/OCEAN, or STREAM/RIVER.

Graphic

Revision - General

Revision - Standard

Revision - Limited

Do not collect new features. Modify existing features to accommodate a change in SHORELINE.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: BAY_INLET_A001
Dimension: 2

NAM

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric)	N/A	Name: Color: Blue Style: SLI CAPS or C/lc Size: 8-18 Spacing: 0-28

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

BRIDGE - A structure spanning and providing passage over a waterway, railroad, or other obstacle.

ATTRIBUTE/ATTRIBUTE VALUE LIST

→	Name	Proper name, specific term, or expression	←
	(Alphanumeric)	Length Value: 99	
	Unspecified	The value is not known and is not required	
	Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment	
	Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required	
	Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks	

DELINEATION

The limit of BRIDGE is the extent of the span as defined by the edges of the deck and the end abutments.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Is Above		UNDERPASS

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If BRIDGE is captured from a graphic, and is a covered bridge, and is shown without wing ticks, and crosses a 1-dimensional feature,
 Then BRIDGE is represented as a 0-dimensional basic feature object.

If BRIDGE is < 0.0625 " along the shortest axis, and does not meet the Representation Conditions for a 0-dimensional basic feature object,
 Then BRIDGE is represented as a 1-dimensional basic feature object.

If BRIDGE IS ≥ 0.0625 " along the shortest axis, and does not meet the Representation Conditions for a 0-dimensional basic feature object,
 Then BRIDGE is represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If BRIDGE is ≥ 0.12 " along the longest axis and carries a hydrographic feature,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If BRIDGE meets capture conditions and carries CANAL/DITCH.
Then capture both BRIDGE and CANAL/DITCH.

If a bridge does not meet capture conditions and carries RAILWAY, ROAD, or TRAIL over
CANAL/DITCH or STREAM/RIVER,
Then capture only RAILWAY, ROAD, or TRAIL.

If a bridge does not meet capture conditions and carries CANAL/DITCH over another
CANAL/DITCH or STREAM/RIVER,
Then capture CANAL/DITCH and UNDERPASS to allow definition of the relationship between
CANAL/DITCH and the feature over which it passes.

If BRIDGE carries multiple features,
Then it is delineated and represented at the greatest horizontal extent.

If BRIDGE carries a transportation feature,
Then collect in the theme Transportation.

If BRIDGE is captured,
Then also capture UNDERPASS.

Graphic

Named BRIDGES over double-line drains, symbolized without bridge wing ticks, are captured from
shoreline to shoreline.

BRIDGES symbolized with bridge wing ticks are captured from wing tick to wing tick.

Revision - General

Revision - Standard

Revision - Limited

Deck Status = Unspecified for newly collected BRIDGES, if the number of decks is not readily discernible. Retain Deck Status on existing BRIDGES.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: BRIDGE_P001
 Dimension: 0

NAM
 Covered
 Bridge

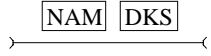
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Cover Status	Covered	N/A	Label and Name: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Name	(Alphanumeric) or Unspecified		

Symbol#: BRIDGE_L001
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Cover Status	Covered	<u>Headline</u> Color: Black Lineweight: 0.003" Positioning: placed at each end of line, perpendicular to line Headline Length: 0.02" unless width of symbol entering BRIDGE is \geq 0.02", then length = width of symbol entering BRIDGE	Label and Name: Color: Black Style: UI CAPS Size: 7 Spacing: 0
Name	(Alphanumeric) or Unspecified	<u>Line</u> Color: Black Lineweight: 0.003" <u>Wing Ticks</u> Color: Black Lineweight: 0.003" Length: 0.023" Positioning: placed at each end of headline, pointing in opposite direction of line, at 135 degrees from headline (inside angle between wing tick and headline)	

Symbol#: BRIDGE_L002
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Cover Status	Not Covered	<u>Headline</u> Color: Black Lineweight: 0.003"	Deck Status and Name: Color: Black Style: UI CAPS Size: 7 Spacing: 0
Deck Status	Double Decked, Not Decked	Positioning: placed at each end of line, perpendicular to line <u>Headline Length: 0.02"</u> unless width of symbol entering BRIDGE is $\geq 0.02"$, then length = width of symbol entering BRIDGE	
Name	(Alphanumeric) or Unspecified	<u>Line</u> Color: Black Lineweight: 0.003"	
		<u>Wing Ticks</u> Color: Black Lineweight: 0.003" Length: 0.023" Positioning: placed at each end of headline, pointing in opposite direction of line, at 135 degrees from headline (inside angle between wing tick and headline)	

Symbol#: BRIDGE_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Cover Status	Not Covered	<u>Area Perimeter</u> Color: Black	Deck Status and Name: Color: Black Style: UI CAPS Size: 7 Spacing: 0
Deck Status	Double Decked, Not Decked	Lineweight: 0.003"	
Name	(Alphanumeric) or Unspecified	<u>Headline</u> Color: Black Lineweight: 0.003" Positioning: placed at each end of area, perpendicular to center line of BRIDGE Headline Length: equal to the width of symbol entering BRIDGE <u>Wing Ticks</u> Color: Black Lineweight: 0.003" Length: 0.023" Positioning: placed at each end of headline, pointing in opposite direction of line, at 135 degrees from headline (inside angle between wing tick and headline)	

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If BRIDGE coincides CANAL/DITCH, RAILWAY, or ROAD,
 Then suppress_section.

If BRIDGE is < 0.12" and coincides DRAWSPAN,
 Then suppress_section.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

If Deck Status = Not Decked,
Then do not show Deck Status label.

Placement

If Name or Label cannot be positioned parallel to symbol,
Then change to:

Style: UL C/lc
Size: 7
Spacing: 0

EXAMPLES

Alexandria, VA (Woodrow Wilson Memorial Bridge)
Leola, PA (Covered BRIDGE)
North Shore, LA (Footbridges (unlabeled))
San Fransisco North, CA (Double decked BRIDGE)
Seattle South, WA (Double decked viaduct)
Waipahu, HI (Footbridge)

CANAL/DITCH - An artificial open waterway constructed to transport water, to irrigate or drain land, to connect two or more bodies of water, or to serve as a waterway for watercraft.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Canal/Ditch Type	Function or purpose
Aqueduct	A structure designed to transport domestic or industrial water from a supply source to a distribution point, often by gravity
Unspecified	The value is not known and is not required
Elevation (Integer Value)	The vertical distance from a given datum Minimum Value: -1289 Maximum Value: 29030 Precision: 0 Length: 5 Increment: 1 Units: feet
Stage	Height of water surface
Normal Pool	The stage of an artificially impounded water body that prevails for the greater part of the year
Not Applicable	The attribute does not apply and therefore cannot be valued
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of CANAL/DITCH is the top of the banks of the artificial waterway.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Connects To		CONNECTOR JUNCTION
Flows To		CONNECTOR JUNCTION
Is Above		UNDERPASS

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		< 0.025"	
2-dimensional		≥ 0.025"	

Special Conditions:

To accommodate variations in the shortest axis of CANAL/DITCH:

If shortest axis of CANAL/DITCH is:

< 0.025" but ≥ 0.01" for a distance < 2.64", and is connected at both ends to a 2-dimensional CANAL/DITCH,
 Then CANAL/DITCH is represented as a 2-dimensional basic feature object.

< 0.025" but ≥ 0.01" for a distance ≥ 2.64", or < 0.01" regardless of distance, and is connected at both ends to a 2-dimensional CANAL/DITCH,
 Then CANAL/DITCH is represented as a 1-dimensional basic feature object.

≥ 0.025" but < 0.04" for a distance < 2.64", and is connected at both ends to a 1-dimensional CANAL/DITCH,
 Then CANAL/DITCH is represented as a 1-dimensional basic feature object.

≥ 0.025" but < 0.04" for a distance ≥ 2.64", or ≥ 0.04" regardless of distance, and is connected at both ends to a 1-dimensional CANAL/DITCH,
 Then CANAL/DITCH is represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If CANAL/DITCH is named,
Or
If CANAL/DITCH is ≥ 0.005 " along the shortest axis,
Then capture.

Attribute Information

If water level of CANAL/DITCH is controlled by GATE with Gate Type = Lock, and CANAL/DITCH is ≥ 0.025 " along the shortest axis and ≥ 0.5 " along the longest axis and is not coincident with LOCK CHAMBER,
Then Elevation = (Integer Value),
Else Elevation = Not Applicable.

Source Interpretation Guidelines

All

If CANAL/DITCH is part of WATERCOURSE,
Then collect the name with WATERCOURSE.

If CANAL/DITCH meets capture conditions, and coincides with BRIDGE, LOCK CHAMBER, or TUNNEL,
Then capture both CANAL/DITCH and the other feature.

If CANAL/DITCH meets capture conditions, and coincides with a structure, but that structure does not meet the definition and capture conditions for another feature (BRIDGE, FLUME, PIPELINE with Pipeline Type = Siphon, TUNNEL),
Then capture CANAL/DITCH and, if required, capture UNDERPASS to allow definition of the relationship between CANAL/DITCH and the feature over or under which it passes.

Structures which carry CANAL/DITCH over another feature are captured as FLUME or BRIDGE.

Do not capture underground aqueducts that are not in TUNNEL as CANAL/DITCH. See PIPELINE with Product = Water, Pipeline Type = Aqueduct, and Relationship to Surface = Underground.

Do not capture rivers that have been channelized to control flooding or erosion, or to maintain flow for navigation as CANAL/DITCH. See STREAM/RIVER. Capture as CANAL/DITCH only those inland navigation waterways that are cut through land to bypass outcrops or rapids, or to connect two bodies of water.

If a canal or ditch passes through a siphon that meets capture conditions for PIPELINE with Pipeline Type = Siphon,

Then do not capture CANAL/DITCH. See PIPELINE.

Do not capture ditches associated with a cranberry bog.

If 2-dimensional CANAL/DITCH meets capture conditions, and coincides with NONEARTHEN SHORE or WALL,
Then capture both CANAL/DITCH and the other feature.

Graphic

Capture all, except ditches associated with a cranberry bog.

Revision - General

Revision - Standard

Revision - Limited

Use ancillary source when the collection of Elevation is required.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

	Symbol#: CANAL_DITCH_L001 Dimension: 1
--	---

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Canal/Ditch Type	Unspecified	<u>Line</u> Color: Blue Lineweight: 0.004"	N/A

	Symbol#: CANAL_DITCH_L002 Dimension: 1
--	---

AQUEDUCT

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Canal/Ditch Type	Aqueduct	<u>Line</u> Color: Blue Lineweight: 0.008"	Label: Color: Blue Style: UI CAPS Size: 5-7 Spacing: 0

Symbol#: CANAL_DITCH_A001
 Dimension: 2

ELE

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Canal/Ditch Type	Unspecified	<u>Area Fill</u> Color: Blue	Elevation: Color: Blue
Elevation	(Integer) or Not Applicable	Screen: 8%, 120-line at 105°	Style: UI CAPS Size: 5-7 Spacing: 0
		<u>Area Perimeter</u> Color: Blue Lineweight: 0.008"	

Symbol#: CANAL_DITCH_A002
 Dimension: 2

AQUEDUCT

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Canal/Ditch Type	Aqueduct	<u>Area Fill</u> Color: Blue	Label: Color: Blue
		Screen: 8%, 120-line at 105°	Style: UI CAPS Size: 5-7 Spacing: 1
		<u>Area Perimeter</u> Color: Blue Lineweight: 0.008"	

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If CANAL/DITCH with Canal/Ditch Type = Aqueduct, coincides BRIDGE,
 Then label "Elevated".

If CANAL/DITCH coincides FLUME, NON-EARTHEN SHORE, or TUNNEL,
 Then suppress_section.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

If Label cannot be positioned parallel to feature,
Then change to:

Style: UL C/lc
Size: 7
Spacing: 0

EXAMPLES

Camino, CA
Jordan Narrows, UT
Kendall, NY
Ocean City, NJ
Phoenix, AZ
Pitsford, NY
Rough and Ready, CA
San Luis Dam, CA (Aqueduct)
Sheridan, MT
Silverwood Lake, CA (Aqueduct)

CONNECTOR - A known, but nonspecific, connection between two nonadjacent network segments.

ATTRIBUTE/ATTRIBUTE VALUE LIST

N/A

DELINEATION

The limit of CONNECTOR is the imaginary line connecting two nonadjacent network segments.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Connects To		AREA OF COMPLEX CHANNELS CANAL/DITCH ESTUARY LAKE/POND SEA/OCEAN STREAM/RIVER
Flows To		AREA OF COMPLEX CHANNELS CANAL/DITCH ESTUARY LAKE/POND SEA/OCEAN STREAM/RIVER

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If CONNECTOR is required to maintain connectivity between two network feature objects that represent AREA OF COMPLEX CHANNELS, CANAL/DITCH, ESTUARY, LAKE/POND, RESERVOIR, SEA/OCEAN, or STREAM/RIVER,
Then capture.

Attribute Information

N/A

Source Interpretation Guidelines

All

The following list of conditions indicates when and why the capture of CONNECTOR is important:

- 1) When CONNECTOR is part of a network that is represented as being connected.
- 2) When there is a gap with no collected network feature object between pieces of the network, for example, at a 2-dimensional DAM/WEIR that causes a gap between an upstream LAKE/POND and a downstream STREAM/RIVER.
- 3) When there are multiple paths of connection past a barrier such as a lock, a power station, and a spillway at a dam. In this case CONNECTOR alone is used to model the connection. (Do NOT capture JUNCTION for the portion(s) of the connection represented by network features, such as STREAM/RIVER in a LOCK CHAMBER.)

Do not capture CONNECTOR between SINK/RISE (or STREAM/RIVER disappearing at SINK/RISE) and STREAM/RIVER.
CONNECTOR should not be used to model an underground stream.

Graphic

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: CONNECTOR
Dimension: N/A

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	N/A	N/A

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

CREVASSE FIELD - An area of deep fissures in the surface of an ice mass caused by breaking or parting.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of CREVASSE FIELD is the extent of the field.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If outline of CREVASSE FIELD is provided to NMD by USGS Geologic Division,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

Graphic

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: CREVASSE_FIELD_A001
 Dimension: 2

NAM
 Crevasse
 Field

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	Area Fill Color: Blue Pattern: TBD	Label and Name: Color: Blue Style: UI C/lc Size: 6 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Mount Cartier, MT
Mount Daniel, WA

DAM/WEIR - A barrier constructed to control the flow or raise the level of water.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Construction Material	Predominant material used
Earthen	Constructed of earth, or a combination of earth and rock
Nonearthen	Constructed of concrete, brick or stone
Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Operational Status	State or condition
Operational	Usable and intended for use
Under Construction	Construction has begun but is not completed
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of DAM/WEIR is the extent of the exposed built-up barrier.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		< 0.02"	
2-dimensional		≥ 0.02"	

Special Conditions:

DATA EXTRACTION

Capture Conditions

- If DAM/WEIR is earthen, and is named, and is ≥ 0.02" along the shortest axis,
- Or
- If DAM/WEIR is nonearthen and is named,
- Or
- If the DAM/WEIR is nonearthen and is ≥ 0.05" along the longest axis,
- Then capture.

Attribute Information

Source Interpretation Guidelines

All

If DAM/WEIR with Construction Material = Nonearthen meets capture conditions,
 Then capture DAM/WEIR and NONEARTHEN SHORE.

If a dam/weir does not meet capture conditions,
 Then capture only SHORELINE.

If DAM/WEIR with Construction Material = Earthen meets capture conditions,
 Then capture both DAM/WEIR and SHORELINE.

If DAM/WEIR covers part of the same area as SPILLWAY,
 Then capture both DAM/WEIR and SPILLWAY where the features overlap.

If DAM/WEIR has an overflow spillway,
Then capture only DAM/WEIR (do not capture as SPILLWAY).

If there is flow from a feature impounded by DAM/WEIR,
Then capture both DAM/WEIR, and JUNCTION or CONNECTOR.

SPILLWAY may exist completely apart from the feature DAM/WEIR.

If DAM/WEIR meets capture conditions and carries ROAD that meets capture conditions,
Then capture both DAM/WEIR and ROAD.

Do not capture check dams as DAM/WEIR. See EMBANKMENT (Built-up theme).

If a lock and DAM/WEIR share a name, as in "Lock and Dam #6,"
Then only collect the name with DAM/WEIR.

If DAM/WEIR is 1-dimensional,
Then capture NONEARTHEN SHORE or SHORELINE only for the portion of DAM/WEIR that separates land from water.

Graphic

If named earthen dams are shown by contours,
Then capture DAM/WEIR as the area defined by the portion of the shoreline that runs parallel to the squared-off contours and the arbitrary line surrounding the built-up barrier as indicated by the contours.

Revision - General

If Operational Status = Under Construction,
Then the limits of DAM/WEIR must be obtained from the operating agency.

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

NAM

Symbol#: DAM_WEIR_L001
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Nonearthen	<u>Line</u> Color: Black	Name: Color: Black
Name	(Alphanumeric) or Unspecified	Lineweight: 0.01"	Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-5
Operational Status	Operational		

NAM

(Under Construction)

Symbol#: DAM_WEIR_L002
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Nonearthen	N/A	Label and Name: Color: Black
Name	(Alphanumeric)		Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-5
Operational Status	Under Construction		

Symbol#: DAM_WEIR_L003
 Dimension: 1

Dam Under Construction

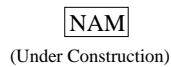
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Nonearthen	N/A	Label: Color: Black
Name	Unspecified		Style: UL CAPS or C/lc Size: 7-10
Operational Status	Under Construction		Spacing: 0-5

Symbol#: DAM_WEIR_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Nonearthen	<u>Area Fill</u> Color: Black	Name: Color: Black
Name	(Alphanumeric) or Unspecified	Screen: 8%, 120-line at 105°	Style: UL CAPS or C/lc Size: 7-10
Operational Status	Operational	<u>Area Perimeter</u> Color: Black Lineweight: 0.003"	Spacing: 0-5

Symbol#: DAM_WEIR_A002
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Earthen or Nonearthen	N/A	Label and Name: Color: Black
Name	(Alphanumeric)		Style: UL CAPS or C/lc Size: 7-10
Operational Status	Under Construction		Spacing: 0-5

Symbol#: DAM_WEIR_A003
 Dimension: 2

Dam Under Construction

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Nonearthen	N/A	Label: Color: Black
Name	Unspecified		Style: UL CAPS or C/lc Size: 7-10
Operational Status	Under Construction		Spacing: 0-5

Symbol#: DAM_WEIR_A004
 Dimension: 2

NAM

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Earthen	N/A	Name: Color: Black
Name	(Alphanumeric) or Unspecified		Style: UL CAPS or C/lc Size: 7-10
Operational Status	Operational		Spacing: 0-5

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If DAM/WEIR coincides ROAD,
 Then suppress_segment.

If DAM/WEIR with Construction Material = Nonearthen coincides SPILLWAY,
 Then suppress_segment.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Alden, OK
Avant SE, OK (DAM/WEIR under construction)
Camino, CA
Coopertown, OK
Clermont, IN
Fort Peck, MT
Frankfort, AL
Honesdale, PA
Huttig, AR (DAM/WEIR under construction)

ESTUARY - The lower end of a river, or a semienclosed coastal body of water with access to the open ocean, which is affected by the tides and where fresh and salt water mix.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of ESTUARY is the extent of the area where fresh and salt water mix, as defined by National Wetlands Inventory.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Connects To		CONNECTOR JUNCTION
Flows To		CONNECTOR JUNCTION

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If ESTUARY has been identified as an Estuarine area by National Wetlands Inventory (NWI),
 Then capture.

Attribute Information

If ESTUARY has a Name which applies to ESTUARY itself, and not to WATERCOURSE of which
 ESTUARY is a part,
 Then Name = (Alphanumeric),
 Else Name = Unspecified.

Source Interpretation Guidelines

All

The minimum size for islands within ESTUARY is 0.03" along the shortest axis.

ESTUARY is similar in form to LAKE/POND and SEA/OCEAN. Therefore, when ESTUARY is
 intersected by other network features it will not be broken with JUNCTIONS.

Graphic

Revision - General

Revision - Standard

Revision - Limited

Do not collect new features. Modify existing features to accomodate a change in SHORELINE.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization



Symbol#: ESTUARY_A001
 Dimension: 2

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Area Fill</u> Color: Blue Screen: 8%, 120-line at 105°	Name: Color: Blue Style: SLI CAPS or C/lc Size: 8-18 Spacing: 0-28

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Boston, MA-RI-CT
Chincoteague, VA-MD
Corpus Christie, TX
Tappahannock, VA-MD

FISH LADDER - A facility consisting of a series of small pools, each one slightly higher than the preceding, built around an obstruction to enable fish to make their way upstream.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of FISH LADDER is the extent of the small pools.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		< 0.025"	< 0.25"
1-dimensional		< 0.025"	≥ 0.25"
2-dimensional		≥ 0.025"	

Special Conditions:

DATA EXTRACTION

Capture Conditions

If FISH LADDER is ≥ 0.1 " along the longest axis,
Then capture.

Attribute Information

N/A

Source Interpretation Guidelines

All

Displace segments of FISH LADDER that overlap each other.

Graphic

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Fish Ladder 	Symbol#: FISH_LADDER_P001 Dimension: 0
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<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	<u>Line</u> Color: Black Lineweight: 0.007" Length: 0.04" <u>Symbol Orientation</u> Orientation: perpendicular to STREAM/RIVER Origin: center of symbol	Label: Color: Black Style: UL C/lc Size: 5-7 Spacing: 0

Fish Ladder _____	Symbol#: FISH_LADDER_L001 Dimension: 1
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<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	<u>Line</u> Color: Black Lineweight: 0.008"	Label: Color: Black Style: UL C/lc Size: 5-7 Spacing: 0

Symbol#: FISH_LADDER_A001
 Dimension: 2

Fish Ladder



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	<u>Area Fill</u> Color: Blue Screen: 8%, 120-line at 105° <u>Area Perimeter</u> Color: Black Lineweight: 0.003"	Label: Color: Black Style: UL C/lc Size: 5-7 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

- Beverly, WA
- Rufus, OR-WA
- The Dalles South, OR-WA
- Umatilla, OR-WA
- Vantage, WA

FLUME - An open, inclined, artificial channel constructed of wood, metal, or concrete; generally elevated.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of FLUME is the extent of the structure.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Is Above		UNDERPASS

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		< 0.025"	
2-dimensional		≥ 0.025"	

Special Conditions:

DATA EXTRACTION

Capture Conditions

If FLUME is ≥ 0.12 " along the longest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If FLUME meets capture conditions and carries CANAL/DITCH that meets capture conditions,
Then capture FLUME, CANAL/DITCH, and UNDERPASS.

If a flume does not meet capture conditions and carries CANAL/DITCH,
Then capture CANAL/DITCH and, if required, capture UNDERPASS to allow definition of the
relationship between CANAL/DITCH and the feature over which it passes.

Graphic

If a section of CANAL/DITCH is labeled "AQUEDUCT" where it passes over another feature,
Then capture that section as CANAL/DITCH, and BRIDGE or FLUME, if capture conditions are met.

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

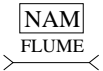
All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

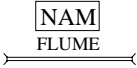
Symbolization

Symbol#: FLUME_L001
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Line</u> Color: Blue Lineweight: 0.008" <u>Wing Ticks</u> Color: Blue Lineweight: 0.003" Length: 0.023" Positioning: pair of ticks meet at each end of line, apex pointing toward line, at 45 degrees (inside angle between ticks) Angle: 45°	Label and Name: Color: Blue Style: UI CAPS Size: 5-7 Spacing: 0

Symbol#: FLUME_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Area Fill</u> Color: Blue Pattern: USGS 8B <u>Area Perimeter</u> Color: Blue Lineweight: 0.008" <u>Headline</u> Color: Black Lineweight: 0.003" Positioning: placed at each end of line, perpendicular to line Headline Length: .02" unless width of entering feature is \geq .02", then length = width of symbol entering FLUME <u>Wing Ticks</u> Color: Black Lineweight: 0.003" Length: 0.023" Positioning: placed at each end of headline, pointing in opposite direction of line, at 135 degrees from headline (inside angle between wing tick and headline)	Label and Name: Color: Blue Style: UI CAPS Size: 5-7 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

If Name or Label cannot be positioned parallel to symbol,
Then change to:

Style: UL CAPS or C/lc
Size: 7
Spacing: 0

EXAMPLES

Grizzly Mountain, OR
Koko Head, HI
Rough and Ready, CA
Waipahu, HI

FORESHORE - The part of a seashore between high-water and low-water marks.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of FORESHORE is the approximate line of mean high water, and the approximate line of mean lower low water.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if FORESHORE is on the final compilation provided to USGS by NOS,

Or

If FORESHORE is ≥ 0.1 " along the longest axis and ≥ 0.04 " along the shortest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If FORESHORE is captured,
Then also capture ESTUARY, LAKE/POND, SEA/OCEAN, or STREAM/RIVER, and capture BARREN LAND to describe the composition of the area.

FORESHORE does not have to be attached to the shore.

Areas that uncover and are within or alongside REEF are captured as FORESHORE.

Graphic

All black sand stipple (USGS 17) should be captured as FORESHORE if it meets the capture conditions. (This does not include oil sumps that are shown with the same pattern.)

Revision - General

Revision - Standard

Revision - Limited

Do not collect new features. Modify existing features to accommodate a change in SHORELINE.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale


Symbolization

Symbol#: FORESHORE_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	N/A	Name: Color: Black Style: UI CAPS or C/lc Size: 7-14 Spacing: 0-20

Symbol#: FORESHORE_A002
 Dimension: 2

Postscript image not in the database. 

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	N/A	Name: Color: Black Style: UI CAPS or C/lc Size: 7-14 Spacing: 0-20

NOTE: This symbol applies only to topographic/bathymetric editions.

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Arlington, FL
Arsenicker Keys, FL (Pelican Bank)
Bar Harbor, ME
Card Sound, FL (Small FORESHORE, away from shore)
Damariscotta, ME (FORESHORE on Damariscotta River and on REEFS)
Ocean City, NJ

FUMAROLE - A hole in the earth's crust from which steam and gases are emitted.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of FUMAROLE is the extent of the hole from which vapors are emitted.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If FUMAROLE is not within an area of closely spaced fumaroles,

Or

If FUMAROLE is within an area of closely spaced fumaroles, and is necessary to accurately represent the pattern of fumaroles (see Source Interpretation Guidelines to determine how to accurately represent the pattern),

Then capture.

Attribute Information

Source Interpretation Guidelines

All

The feature FUMAROLE is not a GNIS feature class. According to GNIS, FUMAROLE is included in the GNIS feature class "geyser". However, not all GNIS "geysers" can be classified as the feature FUMEROLE.

If FUMAROLE is in an area of closely spaced fumaroles,

Then first capture named FUMAROLEs, then those that are on the perimeter of the area, then those that are most prominent, then finally capture a representative pattern of FUMAROLEs internal to the area. Capture as many as can be shown in correct position. The symbols must not overlap.

Graphic

If a geyser or water well symbol is shown in a geothermal area and is labeled "vent" or "gas vent",
Then capture as FUMAROLE.

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: FUMAROLE_P001
 Dimension: 0



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Circle</u> Color: Blue Lineweight: 0.004" Diameter: 0.04" <u>Symbol Orientation</u> Origin: center of symbol	Label and Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Cactus Peak, CA

Lower Geyser Basin, WY (unlabeled FUMEROLE shown with spring symbol)

Norris Junction, WY (FUMEROLE labeled "vent" and shown with water well symbol)

Norris Junction, WY 1:62,500 (FUMEROLE labeled "gas vent" and shown with water well symbol)

GAGING STATION - A structure used to measure the characteristics of a hydrographic feature.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Gage Type	Function or purpose
Tide	Used for measuring the rise and fall of the tide
Operational Status	State or condition
Dismantled	Structure has been taken down
Operational	Usable and intended for use
Station Designator	Four digit station identification number, shown as the last four digits in the NOAA index of tide stations.
(Integer Value)	Minimum Value: 0 Maximum Value: 9999 Precision: 0 Length: 4 Increment: 1 Units:
Unspecified	The value is not known and is not required
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of GAGING STATION is the extent of the housing of the equipment.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If GAGING STATION is published in the most recent "USGS Water Resources Data for (State)" report or is a tide station recognized by NOS, and it is permanent, automatic, continuous reading, and housed,

Or

If GAGING STATION is on the compilation manuscript provided by the State of Florida,

Then capture.

Attribute Information

Operational Status = Dismantled, only if a nonexistent station has been positioned on the compilation manuscript by the State of Florida.

Station Designator = (Integer Value), only if a value is provided on a compilation manuscript by the State of Florida.

Source Interpretation Guidelines

All

If two or more GAGING STATIONS are closely spaced,

Then capture as many as can be shown in correct position. The symbols must not overlap.

Graphic

Capture all.

A spot elevation adjacent to or on GAGING STATION is captured as SPOT ELEVATION.

Revision - General

Revision - Standard

Revision - Limited

Revise only when a compilation manuscript is provided by the State of Florida. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

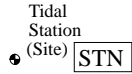
PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: GAGING_STATION_P001
 Dimension: 0



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Gage Type	Tide	<u>Circle</u> Color: Black Lineweight: 0.003" Diameter: 0.05"	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Operational Status	Operational	<u>Fill</u> Color: Black Screen: 100%, in NW and SE quadrants	Station Designator: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Station Designator	(Integer)	<u>Symbol Orientation</u> Origin: center of symbol	



Symbol#: GAGING_STATION_P002
 Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Gage Type	Tide	<u>Circle</u> Color: Black Lineweight: 0.003" Diameter: 0.05"	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Operational Status	Dismantled		
Station Designator	(Integer)	<u>Fill</u> Color: Black Screen: 100%, in NW and SE quadrants <u>Symbol Orientation</u> Origin: center of symbol	Station Designator: Color: Black Style: UL C/lc Size: 7 Spacing: 0



Symbol#: GAGING_STATION_P003
 Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Gage Type	Unspecified	<u>Circle</u> Color: Black Lineweight: 0.003" Diameter: 0.05" <u>Fill</u> Color: Black Screen: 100%, in NW and SE quadrants <u>Symbol Orientation</u> Origin: center of symbol	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

If GAGING STATION coincides control station,
Then the "B.M." plus "elevation" label takes the primary label position and the "Gaging Station" label takes the secondary label position.

If GAGING STATION coincides SPOT ELEVATION,
Then GAGING STATION label takes the primary label position and the SPOT ELEVATION label takes the secondary label position.

EXAMPLES

Apra Harbor, GU (Tidal station)
San Fernando, CA

GATE - A structure that may be swung, drawn, or lowered to block an entrance or passageway.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Gate Type	Function or purpose
Drydock	Gate at the entrance to a drydock
Floodgate	Gate placed across/along a channel to control floodwater or a gate across a roadway in a levee
Lock	Gate at either end of a lock chamber, to control the flow of water through the lock
Tidegate	Gate with a free-swinging barrier that is placed near or at the outlet of a conduit flowing into a body of water subject to high water from tides in order to separate fresh from salt water
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of **GATE** is the extent of the structure.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If GATE is associated with a 1-dimensional feature,
 Then GATE is represented as a 0-dimensional basic feature object.

If GATE is associated with a 2-dimensional feature,
 Then GATE is represented as a 1-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If GATE is a floodgate or of unspecified type and is ≥ 0.02 " along the longest axis,
 Or
 If GATE is a tidegate and is on a 2-dimensional STREAM/RIVER which is ≥ 1.32 " along the longest axis,
 Or
 If GATE is a drydock gate and it is associated with a non-floating DRYDOCK that meets capture conditions,
 Or
 If GATE is a lock gate and is associated with a LOCK CHAMBER that is ≥ 0.025 " along the shortest axis,
 Then capture.

Attribute Information

Source Interpretation Guidelines

All

If GATE is associated with a hydrographic feature,
 Then collect in the theme Hydrography.

GATE is captured as a straight chain across the end of LOCK CHAMBER.

If GATE is associated with a transportation feature,

Then collect in the theme Transportation.

If GATE is captured,
Then also capture JUNCTION.

Graphic

If GATE has been symbolized by a single V-shaped symbol and is on a 2-dimensional feature (such as a DRYDOCK gate),
Then capture GATE as a line from bank to bank, tangent to the apex of the symbol and perpendicular to a line bisecting the symbol.

Revision - General

Revision - Standard

Revision - Limited



Revise only if associated with LOCK CHAMBER on a 2-dimensional CANAL/DITCH or STREAM/RIVER. Otherwise, retain existing features.



DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization


PRODUCT GENERATION at 1:24,000 scale

Symbolization


Symbol#: GATE_P001
 Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Gate Type	Lock	<u>Line</u> Color: Black Lineweight: 0.007" Length: 0.04" <u>Symbol Orientation</u> Orientation: perpendicular to associated feature Origin: center of symbol	N/A

NOTE: This symbol applies only to the theme Hydrography.

		Symbol#: GATE_P002 Dimension: 0	
			
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Gate Type	Floodgate or Tidegate	<u>Line</u> Color: Black Lineweight: 0.007" Length: 0.04" <u>Symbol Orientation</u> Orientation: perpendicular to associated feature Origin: center of symbol	Gate Type: Color: Black Style: UL C/lc Size: 7 Spacing: 0

NOTE: This symbol applies only to the theme Hydrography

		Symbol#: GATE_P003 Dimension: 0	
			
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Access Restrictions	Toll	<u>Line</u> Color: Black Lineweight: 0.007" Length: 0.04" <u>Symbol Orientation</u> Orientation: perpendicular to ROAD Origin: center of symbol	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Gate Type	Road		

NOTE: This symbol applies only to the theme Transportation.

Gate

Symbol#: GATE_P004
Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Access Restrictions	Restricted	<u>Line</u> Color: Black Lineweight: 0.007" Length: 0.04"	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Gate Type	Road	<u>Symbol Orientation</u> Orientation: perpendicular to ROAD Origin: center of symbol	

NOTE: This symbol applies only to the theme Transportation.

Gate

Symbol#: GATE_P005
Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Gate Type	Unspecified	<u>Line</u> Color: Black Lineweight: 0.007" Length: 0.04"	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0
		<u>Symbol Orientation</u> Orientation: perpendicular to associated feature Origin: center of symbol	

NOTE: This symbol applies only to the theme Hydrography.



Symbol#: GATE_L001
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Gate Type	Floodgate or Tidegate	<u>Line</u> Color: Black Lineweight: 0.007"	Gate Type: Color: Black Style: UL C/lc Size: 7 Spacing: 0

NOTE: This symbol applies only to the theme Hydrography.



Symbol#: GATE_L002
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Access Restrictions	Toll	<u>Line</u> Color: Black Lineweight: 0.007"	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Gate Type	Road		

NOTE: This symbol applies only to the theme Transportation.



Symbol#: GATE_L003
 Dimension: 1


<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Access Restrictions	Restricted	<u>Line</u> Color: Black Lineweight: 0.007"	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Gate Type	Road		

NOTE: This symbol applies only to the theme Transportation.

	Symbol#: GATE_L004 Dimension: 1
---	------------------------------------

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Gate Type	Unspecified	<u>Line</u> Color: Black Lineweight: 0.007"	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0

NOTE: This symbol applies only to the theme Hydrography.

	Symbol#: GATE_L005 Dimension: 1
---	------------------------------------

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Gate Type	Lock or Drydock	<u>Line</u> Color: Black Lineweight: 0.007"	N/A

NOTE: This symbol applies only to the theme Hydrography

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If GATE, with Gate Type = Tidegate coincides ROAD,
 Then suppress_symbol.

If GATE, with Gate Type = Tidegate coincides ROAD and ROAD coincides EMBANKMENT,
 Then suppress_symbol and show label only.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Boston South, MA (Tollgate)
Creole, LA (Floodgate)
Eldorado, MS (Floodgate)
Jacks Gap, GA (Road restriction)
Jersey City, NJ-NY
Laurel, FL
North Bend, OR (Tidegate)
Philedelphia, PA-NJ (2-D tollgate)
San Luis Dam, CA

GEYSER - A natural fountain that intermittently ejects a column of water into the air from a hole in the Earth's crust.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of GEYSER is the extent of the hole from which the eruption occurs.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If GEYSER is not within an area of closely spaced geysers,

Or

If GEYSER is within an area of closely spaced geysers and is necessary to accurately represent the pattern of geysers (see Source Interpretation Guidelines to determine how to accurately represent the pattern),
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If GEYSER is in an area of closely spaced geysers,
Then first capture named GEYSERS, then those that are on the perimeter of the area, then those that are most prominent, then finally capture a representative pattern of GEYSERS internal to the area.
Capture as many as can be shown in correct position. The symbols must not overlap.

If a group of GEYSERS is named,
Then the group name is captured on the feature LOCALE (Built-up theme).

Graphic

An elevation on GEYSER is captured as SPOT ELEVATION.

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: GEYSER_P001
 Dimension: 0

NAM

o Geyser

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Circle</u> Color: Blue Lineweight: 0.004" Diameter: 0.04" <u>Symbol Orientation</u> Origin: center of symbol	Label and Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

GEYSER

Placement

TBD

EXAMPLES

Old Faithful, WY
The Geysers, CA

HAZARD ZONE - An area identified as a danger to maritime navigation.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Hazard Zone Category	Form or nature
Crib Area	Containing one or more cribs, (frames of logs or beams filled with heavy material that are sunk and used as foundations or retaining walls for docks, piers or similar structures, or as supports for pipelines)
Foul Ground	Area where the holding qualities for an anchor are poor, or where danger exists of striking or fouling the ground or other obstructions
Mine Danger Area	Area having a danger from unexploded ordnance
Piling Area	Containing one or more structures consisting of piles (long heavy timbers or sections of steel, concrete etc., forced into the earth to serve as a support, as for a pier)
Platform Area	Containing one or more platforms (horizontal surfaces raised above the level of the surrounding area for the purpose of supporting equipment used in drilling)
Reef Area	Containing one or more chains of rocks or coral, at or near the surface of the water
Rock Area	Containing one or more rocks
Shoal	Containing an underwater offshore ridge, bank or bar
Snag/Stump Area	Containing one or more tree trunks or stems near the surface of the water
Unspecified	The value is not known and is not required
Well Area	Containing one or more wells
Wreckage	Containing the ruined remains of one or more vessels
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field

checks, if required

Photorevised

Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of HAZARD ZONE is the extent of the area that is dangerous to navigation. This extent is provided to the USGS by NOS.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	-------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If HAZARD ZONE contains rocks, shoals (bars), or wreckage; and HAZARD ZONE is on an existing NOS chart,
 Or
 For a topographic/bathymetric edition only, if HAZARD ZONE is on the final compilation provided to USGS by NOS,
 Then capture.

Attribute Information

Source Interpretation Guidelines

All

Graphic

Capture HAZARD ZONE as the area enclosed by the dotted line symbol.

Any symbols within the dotted line are captured independently under the appropriate feature. (e.g. ROCK, REEF, WELL etc.)

There will be features on topographic edition maps produced prior to 2/1/61, that do not meet capture conditions. These will not be captured. (Anchorages, barges, buoys, dolphins, duck blinds, dumping grounds, fish stakes, fish traps, foul areas, harbor limits, lightships, limiting danger lines, measured courses, pilings, project depths of channels, restricted areas, sailing lines, sewage outlets, snags, sunken rocks, sunken wrecks, tide rips, breakers, types of offshore bottom).

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: HAZARD_ZONE_A001
 Dimension: 2




<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Hazard Zone Category	Shoal or Wreckage	<u>Dotted Area Perimeter</u> Color: Black Dot Spacing: 0.017" Dot Diameter: 0.008"	Hazard Zone Type: Color: Black Style: UL C/lc Size: 6 Spacing: 0

Symbol#: HAZARD_ZONE_A002
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Hazard Zone Category	Rock Area	<u>Dotted Area Perimeter</u> Color: Black Dot Spacing: 0.017" Dot Diameter: 0.008"	N/A

Postscript image not in the database. 

Symbol#: HAZARD_ZONE_A003
 Dimension: 2

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Hazard Zone Category	Crib Area, Foul Ground, Mine Danger Area, Piling Area, Platform Area, Reef Area, Snag/Stump Area, Unspecified, Well Area, Shoal, or Wreckage	<u>Dotted Area Perimeter</u> Color: Black Dot Spacing: 0.017" Dot Diameter: 0.008"	Hazard Zone Type: Color: Black Style: UL C/lc Size: 6 Spacing: 0

NOTE: This symbol applies only to Topographic-Bathymetric editions.

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

If HAZARD ZONE, with Hazard Zone Category = Wreckage coincides WRECK,
 Then delete label "Wreckage".

Placement

TBD

EXAMPLES

ICE MASS - A field of ice, formed in regions of perennial frost.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Ice Mass Category	Form or nature
Alpine Glacier	Body of ice and snow, originating in a mountain range, showing evidence of past or present flow
Continental Glacier	
Continental Glaciation Category	Form or nature
Ice Shelf	Seaward extension of an Ice Sheet, floating but attached to the land on at least one side and bounded on the seaward side by a steep cliff rising 2 to 50 m or more above sea level
Inland Ice Sheet	Very thick ice, completely covering and obscuring over 50,000 sq km of land
Pack Ice	Areas of floating broken ice driven and jammed together
Snowfield	Broad expanse of permanent snow
Unspecified	The value is not known and is not required
Ice Mass Movement	Change in position of glacier
Advancing	Moving forward from previous position
Receding	Moving backward from previous position
Unspecified	The Ice Mass Movement is not known and not required
Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks



DELINEATION

The limit of ICE MASS is the extent of the ice or snow.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If ICE MASS is ≥ 0.0625 square inches,
 Then capture.

Attribute Information

For all ICE MASSES within the Continental United States,
 Ice Mass Category = Alpine Glacier.



Ice Mass Movement is only associated with Ice Mass Category = Alpine Glacier and Continental Glaciation
 Category = Inland Ice sheet

If ICE MASS has advanced ≥ 0.1 ",
 Then Ice Mass Movement = Advancing.

If ICE MASS has receded ≥ 0.1 ",
 Then Ice Mass Movement = Receding.

If ICE MASS has not moved or has moved < 0.1 ",
 Then Ice Mass Movement = Unspecified.



Source Interpretation Guidelines

All

If named Glaciers are contiguous,
Then the dividing line is the approximate line of divergence or confluence, as determined by the topography of the ice masses, or by the changes in color or texture, or both.

Graphic

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: ICE_MASS_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Ice Mass Category	Alpine Glacier	<u>Dashed Area Perimeter</u>	Name:
Name	(Alphanumeric) or Unspecified	Color: Blue Lineweight: 0.005" Dash Length: 0.07" Dash Spacing: 0.02"	Color: Blue Style: SLI Size: 8-18 Spacing: 0-35

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Broken Top, OR
Fremont Peak South, WY
Kenai (A-1), AK
Lime Mountain, WA
Mount Jefferson, OR
Mount Tom, CA
Split Mountain, CA
Seldoviva (D-1), AK
Valdez (A-6), AK

INUNDATION AREA - An area of land subject to flooding.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Elevation (Integer Value)	The vertical distance from a given datum Minimum Value: -1289 Maximum Value: 29030 Precision: 0 Length: 5 Increment: 1 Units: feet
Stage Flood Elevation	Height of water surface The stage of an artificially impounded water body as determined by the highest controlling structure
Unspecified	The value is not known and is not required
Inundation Control Status Controlled	Existence of functional control structures Structures, such as DAM/WEIR or EMBANKMENT, exist to control the water and inundate specific areas
Inundation Area Type	Function or purpose
Debris Basin	Area to catch and temporarily store debris and sediment from runoff
Dewatering Area	Area that is seasonally drained by TVA to control mosquitoes
Duck Pond	Commercially developed areas, inundated for duck hunting (normally found along the Pacific Coast Flyway)
General Case	Common use
Percolation Basin	Area to temporarily store excess runoff and return water to the ground-water reservoir; also called spreading ground
Retarding Basin	Basin or embanked area for retarding the flow of flood waters
Not Controlled	No controlling structures exist. Flooding is natural and periodic

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

In flat coastal areas where the shoreline varies with the tide and meteorological conditions, the limit of INUNDATION AREA is the approximate mean low or mean lower low water line, and the approximate limit of flooding.

The limit of INUNDATION AREA controlled by DAM/WEIR is the average water line and the line corresponding to the highest controlling structure.

For all other controlled INUNDATION AREAS, the limit is the average water line and the crest of EMBANKMENT or, if there is no EMBANKMENT, the limit of flooding.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If INUNDATION AREA is controlled and is ≥ 0.06 " along the shortest axis,
 Or
 If INUNDATION AREA is uncontrolled, and is ≥ 0.06 " along the shortest axis, and is along
 SEA/OCEAN or ESTUARY,
 Then capture.

Attribute Information

If Inundation Control Status = Controlled, and Inundation Area Type = General Case,
 Then Elevation = (Integer Value),
 Else Elevation = Unspecified.

If Name applies to INUNDATION AREA only, and not to an associated LAKE/POND or
 STREAM/RIVER,
 Then Name = (Alphanumeric),
 Else Name = Unspecified.

Source Interpretation Guidelines

All

All features inside INUNDATION AREA will be captured as they normally would, if they meet capture conditions.

Graphic

Revision - General

Revision - Standard

Revision - Limited

Do not collect new features. Modify existing features to accommodate a change in SHORELINE.

The limits for INUNDATION AREA and the values for the Attributes of Elevation and Name may have to be obtained from the operating agency or other ancillary sources.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

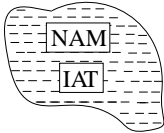
All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: INUNDATION_AREA_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Inundation Area Type	Debris Basin, Duck Pond, Percolation Basin, or Retarding Basin	<u>Area Fill</u> Color: Blue Pattern: USGS 19B	Inundation Area Type and Name: Color: Black Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-5
Inundation Control Status	Controlled	<u>Area Perimeter</u> Color: Blue Lineweight: 0.004"	
Name	(Alphanumeric) or Unspecified		

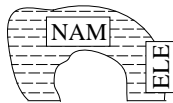
INUNDATION AREA

Symbol#: INUNDATION_AREA_A002
 Dimension: 2



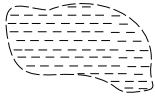
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Inundation Area Type	Dewatering Area	<u>Area Fill</u> Color: Blue	Name: Color: Black
Inundation Control Status	Controlled	Pattern: USGS 19B	Style: SLI CAPS or C/lc
Name	(Alphanumeric) or Unspecified	<u>Area Perimeter</u> Color: Blue Lineweight: 0.004"	Size: 6-16 Spacing: 0-28

Symbol#: INUNDATION_AREA_A003
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Elevation	(Integer)	<u>Area Fill</u> Color: Blue	Elevation: Color: Blue
Inundation Area Type	General Case	Pattern: USGS 19B	Style: UI CAPS
Inundation Control Status	Controlled	<u>Area Perimeter</u> Color: Blue Lineweight: 0.004"	Size: 5 Spacing: 0
Name	(Alphanumeric) or Unspecified		Name: Color: Blue Style: SLI CAPS or C/lc Size: 8-12 Spacing: 0-3

Symbol#: INUNDATION_AREA_A004
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Inundation Control Status	Not Controlled	<u>Area Fill</u> Color: Blue Pattern: USGS 19B <u>Dashed Area Perimeter</u> Color: Blue Lineweight: 0.004" Dash Length: 0.07" Dash Spacing: 0.02"	N/A

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If INUNDATION AREA coincides 2-dimensional CANAL/DITCH, LAKE/POND, or 2-dimensional STREAM/RIVER,
 Then do not plot Area Fill for INUNDATION AREA where coincident.

If INUNDATION AREA with Inundation Control Status = Not Controlled coincides SHORELINE,
 Then suppress_section.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

Show Elevation label centered along Perimeter Line. If two labels are necessary. place at least 3" apart.

EXAMPLES

- Anaheim, CA (Retarding basin)
- Bat Cave, TX
- Corpus Christie, TX (Coastal)
- Huttig, AR-LA (INUNDATION AREA and AREA TO BE SUBMERGED)
- Keyesport, IL

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Part 2: Hydrography

INUNDATION AREA

Little Grape Creek, TX
Piru, CA (Percolation basin)
San Fernando, CA (Percolation basin and Debris basin)
San Louis Ranch, CA (Duck pond)
Stafford Springs, CT

JUNCTION - An intersection or confluence of two or more adjacent network segments, or a terminus of a single network segment. Network segments are those links in a roadway network or drainage network that have direction of flow or carry traffic.

ATTRIBUTE/ATTRIBUTE VALUE LIST

N/A

DELINEATION

The limit of JUNCTION is the imaginary point or line at the terminal end of a network segment,
 Or
 The imaginary point or line that separates two adjacent network segments,
 Or
 The imaginary point or spoke-shaped set of lines that separate three or more network segments at an intersection, confluence, merge point, or decision point.

In general, the limit of JUNCTION delineated with lines is the shortest straight line or shortest set of spoke-shaped lines that separates the adjacent network segments.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Connects To		AREA OF COMPLEX CHANNELS CANAL/DITCH ESTUARY LAKE/POND SEA/OCEAN STREAM/RIVER
Flows To		AREA OF COMPLEX CHANNELS CANAL/DITCH ESTUARY LAKE/POND SEA/OCEAN STREAM/RIVER

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If all of the network feature objects that Flow To or Connect To JUNCTION are represented as

1-dimensional basic feature objects, or are represented as 2-dimensional basic feature objects that taper down to a point,
Then JUNCTION is represented as a 0-dimensional basic feature object.

If at least two of the network feature objects that Flow To or Connect To JUNCTION are represented as 2-dimensional basic feature objects (and they do not taper down to a point),
Then JUNCTION is represented as a 1-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If JUNCTION occurs at the isolated beginning or ending (terminus) of CANAL/DITCH or STREAM/RIVER,

Or

If JUNCTION occurs where AREA OF COMPLEX CHANNELS, CANAL/DITCH, ESTUARY, LAKE/POND, SEA/OCEAN, STREAM/RIVER, or RESERVOIR joins or intersects AREA OF COMPLEX CHANNELS, CANAL/DITCH, ESTUARY, LAKE/POND, SEA/OCEAN, STREAM/RIVER, or RESERVOIR,

Or

If JUNCTION occurs where STREAM/RIVER is interrupted by SPRING/SEEP or WATERFALL,

Or

If JUNCTION occurs where AREA OF COMPLEX CHANNELS is interrupted by SPRING/SEEP,

Or

If JUNCTION occurs where DAM/WEIR, or GATE associated with LOCK CHAMBER separates AREA OF COMPLEX CHANNELS, CANAL/DITCH, ESTUARY, LAKE/POND, SEA/OCEAN, STREAM/RIVER, or RESERVOIR from AREA OF COMPLEX CHANNELS, CANAL/DITCH, ESTUARY, LAKE/POND, SEA/OCEAN, STREAM/RIVER, or RESERVOIR,

Then capture.

Attribute Information

N/A

Source Interpretation Guidelines

All

The limit of JUNCTION must match the limits of adjacent network segments. For example, the location of JUNCTION must match the limits as described in other templates:

- (1) "The limit of STREAM/RIVER where it enters or leaves LAKE/POND is determined by the conformation of the land."
- (2) "The limit of STREAM/RIVER where it enters SEA/OCEAN is where the conformation of the land and water make the division obvious, or, if the land and water do not suggest an obvious limit, the limit is where the stream reaches a width of 1 nautical mile with no further constrictions."
- (3) "The limit of STREAM/RIVER where it enters ESTUARY is where ESTUARY ends."

Do not capture JUNCTION where two network segments cross at different grades (that is, are vertically separated).

JUNCTION will only occur at some locations where STREAM/RIVER represented as a 2-dimensional feature object splits to go around an island and again where STREAM/RIVER merges past the island. Use JUNCTIONS for islands that are at least as wide as half the width of STREAM/RIVER above or below the island, or for islands that are at least five times as long as STREAM/RIVER is wide. JUNCTIONS are also needed when channels around islands are related to different WATERCOURSES.

The effect of STREAM/RIVER entering LAKE/POND is different than the effect of STREAM/RIVER entering STREAM/RIVER. STREAM/RIVER enters (or exits) LAKE/POND at JUNCTION, but the LAKE/POND is not broken into two LAKE/POND feature objects. STREAM/RIVER enters a wide STREAM/RIVER at JUNCTION, and that JUNCTION also breaks the wide STREAM/RIVER into two STREAM/RIVER feature objects (the upstream portion and the downstream portion). ESTUARY and SEA/OCEAN are treated like LAKE/POND. AREA OF COMPLEX CHANNELS is treated like STREAM/RIVER.

Capture JUNCTION where SPRING/SEEP is connected to STREAM/RIVER or AREA OF COMPLEX CHANNELS, and at WATERFALL.

Graphic

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: JUNCTION_P001
 Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	N/A	N/A

Symbol#: JUNCTION_L001
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	N/A	N/A

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

N/A

Placement

N/A

EXAMPLES

LAKE/POND - A standing body of water with a predominantly natural shoreline surrounded by land.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Elevation (Integer Value)	The vertical distance from a given datum Minimum Value: -1289 Maximum Value: 29030 Precision: 0 Length: 5 Increment: 1 Units: feet
Stage	Height of water surface
Average Water Elevation	The stage of a natural water body that prevails for the greater part of the year
Date of Photography	The stage that exists at the date of photography
High Water Elevation	The stage that prevails when a natural water body is at or near capacity
Normal Pool	The stage of an artificially impounded water body that prevails for the greater part of the year
Spillway Elevation	The stage of an artificially impounded water body as determined by the spillway
Unspecified	The value is not known and is not required
Hydrographic Category	Portion of the year the feature contains water
Intermittent	Contains water for only part of the year, but more than just after rainstorms and at snowmelt
Perennial	Contains water throughout the year, except for infrequent periods of severe drought
Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required

Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Water Characteristics	Distinctive properties of the water
Salt	
Unspecified	The value is not known and is not required

DELINEATION

The limit of LAKE/POND where STREAM/RIVER enters or leaves, is determined by the conformation of the land.

The limit of a naturally formed, perennial LAKE/POND is the position of SHORELINE when the water is at the stage that prevails for the greater part of the year (Average Water Elevation), or if this limit cannot be determined, the visible edge of the water body (Date of Photography).

The limit of an artificially formed, perennial LAKE/POND is the position of SHORELINE when the water is at the stage that prevails for the greater part of the year (Normal Pool), or if this limit cannot be determined, the limits defined by the spillway (Spillway Elevation), or the visible edge of the water body (Date of Photography).

The limit of an intermittent LAKE/POND is the position of SHORELINE when the water is at the stage that prevails when the feature is at or near capacity (High Water Elevation) or, if this limit cannot be determined, the visible edge of the water body (Date of Photography).

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Connects To		CONNECTOR JUNCTION
Flows To		CONNECTOR JUNCTION

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		< 0.025"	
1-dimensional			
2-dimensional		≥ 0.025"	

Special Conditions

DATA EXTRACTION

Capture Conditions

If LAKE/POND is in an arid area,
 Or
 If LAKE/POND is ≥ 0.025 " along the shortest axis and ≥ 0.0025 square inches (10,000 square feet at 1:24,000-scale),
 Then capture.

Attribute Information

If Hydrographic Category = Intermittent,
 Then Stage = High Water Elevation,
 Or
 If High Water Elevation cannot be determined,
 Then Stage = Date of Photography.

If LAKE/POND is a natural lake, and Hydrographic Category = Perennial,
 Then Stage = Average Water Elevation,
 Or
 If Average Water Elevation cannot be determined,
 Then Stage = Date of Photography.

If LAKE/POND is an artificially impounded lake, and Hydrographic Category = Perennial, and the water level is reasonably constant,

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LAKE/POND

Then Stage = Normal Pool.



If Stage = Normal Pool or Spillway Elevation,
Then Water Characteristics = Unspecified.



If LAKE/POND is an artificially impounded lake, and Hydrographic Category = Perennial, and the water level is not reasonably constant,
Then Stage = Spillway Elevation.

If LAKE/POND is an artificially impounded lake, and Hydrographic Category = Perennial, and the Normal Pool or Spillway Elevation cannot be determined,
Then Stage = Date of Photography.

See INUNDATION AREA for capture of flood elevation.

If LAKE/POND has a printed elevation on a 1:24,000-scale graphic,
Then Elevation = (Integer Value)
Else Elevation = Unspecified.

Source Interpretation Guidelines

All

Do not capture dry lakes as LAKE/POND. See PLAYA.

Refer to the feature definition to decide how to categorize a given feature instance. Do not use the proper name of the feature as a guide. Many features that are known as "Reservoirs" or labeled on the graphic as "Reservoirs" will be captured as LAKE/PONDS. "Stock Tanks" may be RESERVOIR or LAKE/POND depending on their form. As a general rule, if a water body has a geometric shape or other information indicates it is contained by a constructed basin, capture it as RESERVOIR. If it does not appear to be contained by a constructed basin, capture it as LAKE/POND.

The minimum size for islands within LAKE/POND is 0.03" along the shortest axis.

Graphic

If Elevation shown on map is preceded by "Spillway",
Then Stage = Spillway.

If Elevation is collected from the graphic, and LAKE/POND is artificially impounded, and "Spillway (elevation)" is not printed,
Then Stage = Normal Pool.

Revision - General

If image shows lower than average water level,
Then capture LAKE/POND at a normal pool or average water level by using ancillary sources or evidence of water marks on images.

If image shows lower than average water level and the average water elevation or normal pool elevation cannot be determined,
Then capture LAKE/POND at the visible edge of the water body.

If image shows higher than average water level,
Then capture LAKE/POND at a normal pool or average water level by using ancillary sources.

If image shows higher than average water level and the average water elevation or normal pool elevation cannot be determined,
Then capture LAKE/POND at the visible edge of the water body.

Within a newly added manmade LAKE/POND, retain contours, single and double-line drains, blue water tint, drain names, PLSS subdivisions, and civil boundaries. All other features are deleted.

Revision - Standard

Revision - Limited

Use ancillary source when the collection of Elevation is required.

Value Hydrographic Category by looking at the surrounding drainage.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

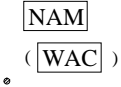
Symbolization

Symbol#: LAKE_POND_P001
 Dimension: 0

NAM
 ◦ (WAC)

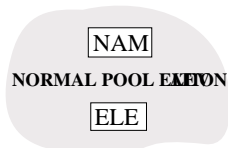
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Hydrographic Category	Perennial	<u>Circle</u> Color: Blue Lineweight: 0.004" Diameter: 0.03"	Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0
Name	(Alphanumeric) or Unspecified		
Water Characteristics	Salt or Unspecified	<u>Fill</u> Color: Blue Screen: 8%, 120-line at 105° <u>Symbol Orientation</u> Origin: center of symbol	Water Characteristics: Color: Blue Style: UL C/lc Size: 7 Spacing: 0

Symbol#: LAKE_POND_P002
 Dimension: 0



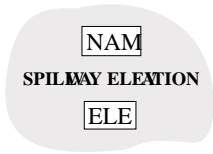
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Hydrographic Category	Intermittent	<u>Circle</u> Color: Blue Lineweight: 0.004" Diameter: 0.03"	Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0
Name	(Alphanumeric) or Unspecified		
Water Characteristics	Salt or Unspecified	<u>Fill</u> Color: Blue Pattern: USGS 17 <u>Symbol Orientation</u> Orientation: center of symbol	Water Characteristics: Color: Blue Style: UL C/lc Size: 7 Spacing: 0

Symbol#: LAKE_POND_A001
 Dimension: 2



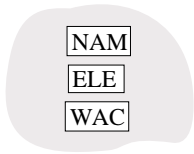
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Elevation	(Integer)	<u>Area Fill</u> Color: Blue Screen: 8%, 120-line at 105°	Elevation and Label: Color: Blue Style: UI CAPS Size: 5 Spacing: 0
Hydrographic Category	Perennial		
Name	(Alphanumeric) or Unspecified		
Stage	Normal Pool		Name: Color: Blue Style: SLI CAPS or C/lc Size: 8-12 Spacing: 0-3

Symbol#: LAKE_POND_A002
 Dimension: 2



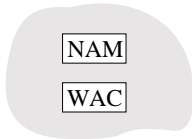
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Elevation	(Integer)	Area Fill Color: Blue	Elevation and Label: Color: Blue
Hydrographic Category	Perennial	Screen: 8%, 120-line at 105°	Style: UI CAPS Size: 5 Spacing: 0
Name	(Alphanumeric) or Unspecified		Name: Color: Blue
Stage	Spillway Elevation		Style: SLI CAPS or C/lc Size: 8-12 Spacing: 0-3

Symbol#: LAKE_POND_A003
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Elevation	(Integer) or Unspecified	Area Fill Color: Blue Screen: 8%, 120-line at 105°	Elevation: Color: Blue Style: UI Size: 5 Spacing: 0
Hydrographic Category	Perennial		
Name	(Alphanumeric) or Unspecified		Name: Color: Blue Style: SLI CAPS or C/lc Size: 8-12 Spacing: 0-3
Stage	Average Water Elevation or Date of Photography		
Water Characteristics	Salt or Unspecified		Water Characteristics: Color: Blue Style: UL C/lc Size: 7 Spacing: 0

Symbol#: LAKE_POND_A004
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Hydrographic Category	Intermittent	<u>Area Fill</u> Color: Blue	Name: Color: Blue
Name	(Alphanumeric) or Unspecified	Pattern: USGS 17	Style: SLI CAPS or C/lc Size: 8-12 Spacing: 0-3
Water Characteristics	Salt or Unspecified		Water Characteristics: Color: Blue Style: UL C/lc Size: 7 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

If Stage = Average Water Elevation,
 Then place "Integer Value" within 2-dimensional LAKE/POND.

If Stage = Spillway Elevation,
 Then place the Integer Value within 2-dimensional LAKE/POND if space allows,
 Else, place outside of LAKE/POND and adjacent to SPILLWAY, with type aligned with south projection line.

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

LAKE/POND

EXAMPLES

Barre, MA (Quabbin Reservoir)

Fortified Peak, AZ (Tank)

Macedonia, GA-NC (Dammed river - Chatuge Lake/Hiwasse River)

LOCK CHAMBER - An enclosure on a waterway used to raise and lower vessels as they pass from one level to another.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of **LOCK CHAMBER** is the gates and sidewalls that enclose the portion of a waterway to be raised or lowered.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
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Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If **LOCK CHAMBER** is on a 1-dimensional **STREAM/RIVER** or **CANAL/DITCH** and **LOCK**

CHAMBER has been symbolized on existing graphic with only one wing tick, and the graphic product is the only source used,
Then LOCK CHAMBER is represented as a 0-dimensional basic feature object.

If LOCK CHAMBER is on a 1-dimensional STREAM/RIVER or CANAL/DITCH and does not meet the conditions for a 0-dimensional LOCK CHAMBER,
Then LOCK CHAMBER is represented as a 1-dimensional basic feature object.

If LOCK CHAMBER is on a 2-dimensional STREAM/RIVER or CANAL/DITCH,
Then LOCK CHAMBER is represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

Capture all.

Attribute Information

Source Interpretation Guidelines

All

If LOCK CHAMBER and DAM/WEIR share a name, as in "Lock and Dam #6,"
Then only collect the name with DAM/WEIR.

If a 1-dimensional or 2-dimensional LOCK CHAMBER is captured,
Then also capture STREAM/RIVER or CANAL/DITCH.

If a 1-dimensional or 2-dimensional LOCK CHAMBER is captured,
Then also capture GATE, and JUNCTION or CONNECTOR, at each end of LOCK CHAMBER.

If a 2-dimensional LOCK CHAMBER and STREAM/RIVER are captured,
Then also capture SHORELINE, NONEARTHEN SHORE, or WALL along the sidewalls of the chamber.

Graphic

If LOCK CHAMBER has been symbolized by a single V-shaped symbol,
Then capture LOCK CHAMBER at the apex of the V-shaped symbol.

If LOCK CHAMBER has been symbolized by a pair of V-shaped symbols and is on a single-line STREAM/RIVER or CANAL/DITCH,
Then capture LOCK CHAMBER as a line connecting the apexes of the V-shaped symbols.

If LOCK CHAMBER has been symbolized by a pair of V-shaped symbols and is on a double-line STREAM/RIVER or CANAL/DITCH,
Then capture LOCK CHAMBER as the water area between the V-shaped symbols. The ends of the chamber should be collected as straight lines passing through the apex of the V-shaped symbols.

Revision - General

Revision - Standard

Revision - Limited

Revise only if LOCK CHAMBER is on a 2-dimensional CANAL/DITCH or STREAM/RIVER.
Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: LOCK_CHAMBER_P001
 Dimension: 0

NAM

Lock

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Line</u> Color: Black Lineweight: 0.007" Length: 0.04" <u>Symbol Orientation</u> Orientation: perpendicular to associated feature Origin: center of symbol	Label and Name: Color: Black Style: UL C/lc Size: 7 Spacing: 0

Symbol#: LOCK_CHAMBER_L001
 Dimension: 1

NAM

Lock

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	N/A	Label and Name: Color: Black Style: UL C/lc Size: 7 Spacing: 0

Symbol#: LOCK_CHAMBER_A001
 Dimension: 2

NAM

Lock

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	N/A	Label and Name: Color: Black Style: UL C/lc Size: 7 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

LOCK CHAMBER

EXAMPLES

Boston, MA (2-D)
Clarence Center, NY (2-D)
Falls Church, VA-MD
Fentress, VA (2-D)
Indiantown SE, FL (2-D)
Leesburg East, FL
Pittsford, NY (2-D)
Sterling, VA-MD

MILE MARKER - A point on a feature indicating the distance, in miles, measured along the course or path of the feature, from an established origin point on the feature.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Mileage Number (Floating Point Value)	Distance from the origin Minimum Value: 0 Maximum Value: 999.9 Precision: 1 Length: 5 Increment: 0.1 Units:
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of MILE MARKER is the point established by the Army Corps of Engineers, the Pacific Northwest River Basin Commission, the Tennessee Valley Authority (TVA), or the Pacific Southwest Inter-Agency Committee.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If MILE MARKER is associated with STREAM/RIVER, and there are more than 10 miles of reference points, and the data is provided by one of the following sources:
 the Army Corps of Engineers;
 the Tennessee Valley Authority (Tennessee River Watershed);
 the Pacific Southwest Inter-Agency Committee (Western U.S.); or
 the Pacific Northwest River Basin Commission (Western U.S.),
 Then capture.

Attribute Information

If Mileage Number is the last shown on the associated waterway,
 Then Mileage Number is valued to the nearest 0.1 mile,
 Else Mileage Number is valued to the nearest mile.

Source Interpretation Guidelines

All

MILE MARKERS positioned by reference to Corps of Engineer charts or Tennessee Valley Authority maps should not be adjusted to conform to changes in the stream channel or to measured mile intervals. Maintain the Corps of Engineer position, even if the point is no longer within the water channel.

MILE MARKERS provided by the Pacific Northwest River Basin Commission or the Pacific Southwest Inter-Agency Committee will be derived from tables. Positions are keyed to prominent

features along the waterway. Capture MILE MARKER along the centerline of the watercourse.

Graphic

Capture all.

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: MILE_MARKER_P001
 Dimension: 0

Mile
 + MIN

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Mileage Number	(Floating Point)	Cross Color: Black Lineweight: 0.003" Positioning: center of lines bisect each other at 90 degrees Line 1 Length: 0.08" Line 2 Length: 0.08" Intersect Angle: 90° <u>Symbol Orientation</u> Orientation: one line aligned with south projection line Origin: center of symbol	Mileage Number and Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If MILE MARKER coincides BRIDGE, FLUME, GATE with Gate Type = Lock, or ROAD,
 Then suppress_symbol.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

If MILE MARKER is nearest to where the stream enters or exits the quadrangle edge,
Then apply label.

If MILE MARKER has a Mileage Number that ends in 0.0 or 5.0,
Then apply label.

If MILE MARKER has the largest Mileage Number of all MILE MARKERS on the same waterway,
Then apply label.

Placement

TBD

EXAMPLES

Chaney Ranch, CA
Reserve, LA
Silverwood Lake, CA
Starbuck East, WA
Wheelersburg, OH-KY

MUD POT - A pool of mud from which gas or vapors issue.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of MUD POT is the extent of the pool of mud.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If MUD POT is not within an area of closely spaced mud pots,

Or

If MUD POT is within an area of closely spaced mud pots and is necessary to accurately represent the pattern of mud pots (See Source Interpretation Guidelines to determine how to accurately represent the pattern),

Then capture.

Attribute Information

Source Interpretation Guidelines

All

The feature MUD POT is not a GNIS feature class. According to GNIS, MUD POT is included in the GNIS feature class "spring". However, not all GNIS "springs" can be classified as the feature MUD POT.

If MUD POT is within an area of closely spaced mud pots,

Then first capture named MUD POTS, then those that are on the perimeter of the area, then those that are most prominent, then finally capture a representative pattern of MUD POTS internal to the area.

Capture as many as can be shown in correct position. The symbols must not overlap.

Graphic



Mud pots have been shown with the spring symbol. Unless name or label indicate that it is a mud pot, capture as SPRING/SEEP.

Capture features labeled "Paint Pot" as MUD POT.



Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: MUD_POT_P001
 Dimension: 0



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Circle</u> Color: Blue Lineweight: 0.004" Diameter: 0.04" <u>Symbol Orientation</u> Origin: center of symbol	Label and Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Canyon Village, WY (Labeled MUD POT shown with water well symbol)

Lower Geyser Basin, WY (Fountain Paint Pot shown with spring symbol)

Norris Junction, WY (Named groups of MUD POTS shown with spring symbol)

Norris Junction, WY 1:62,500 (Named groups of MUD POTS shown with water well symbol)

NONEARTHEN SHORE - A structure built of stone, brick, concrete, or other building materials that borders a body of water.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of NONEARTHEN SHORE is the extent of the structure.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If NONEARTHEN SHORE is ≥ 0.05 " along the longest axis and separates land from water,
Then capture.

Attribute Information

N/A

Source Interpretation Guidelines

All

The line of contact between a body of water and the land is captured as either SHORELINE or NONEARTHEN SHORE. Other structures, such as DAM/WEIR, PIER/BREAKWATER/JETTY, or WHARF may coincide with the SHORELINE or NONEARTHEN SHORE, in which case both features are captured.

If a nonearthen shore does not meet capture conditions,
Then see SHORELINE or WALL.

If NONEARTHEN SHORE meets capture conditions and coincides 2-dimensional CANAL/DITCH,
Then capture both NONEARTHEN SHORE and CANAL/DITCH.

Graphic

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: NON-EARTHEN_SHORE_L001
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	Line Color: Black Lineweight: 0.007"	N/A

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

N/A

Selection

TBD

Placement

TBD

EXAMPLES

Jersey City, NY-NJ

PIPELINE - A closed conduit, with pumps, valves and control devices, for conveying fluids, gases, or finely divided solids.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Product	Principal commodity involved
Water	
Pipeline Type	Function or purpose
Aqueduct	A structure designed to transport domestic or industrial water from a supply source to a distribution point, often by gravity
General Case	Common use
Penstock	Designed to convey water into the turbine of a hydroelectric generating plant
Siphon	Designed to convey water by gravitational force over, or under, an obstruction
Relationship to Surface	Vertical location relative to the surface
At or Near	At or slightly above the surface
Elevated	Supported above the earth
Underground	Buried

Underwater

Always submerged

Unspecified

The value is not known and is not required

DELINEATION

The limit of PIPELINE that is underground is the edge of the ground scars or linear clearings.

The limit of PIPELINE that is at or near the ground or elevated, is the extent of the structure.

The limit of PIPELINE that is underwater is as shown on the final compilation provided to USGS by NOS.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Is Above		UNDERPASS

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If PIPELINE is an aqueduct,

Or

If PIPELINE is aboveground and is outside of a congested area; and is a trunk line; and is ≥ 0.25 " from a paralleling road, railway, or other linear feature,

Or

If PIPELINE is underground and surface scars are present; and is outside of a congested area; and is a trunk line; and is ≥ 0.25 " from a paralleling road, railway, or other linear feature,

Or

If PIPELINE is a penstock or siphon and is ≥ 0.12 " along the longest axis,
Then capture.

Attribute Information

If Pipeline Type = Siphon,
Then Relationship to Surface = Unspecified.

Source Interpretation Guidelines

All

If PIPELINE, with Pipeline Type = Siphon, causes a gap in CANAL/DITCH,
Then capture PIPELINE only.

If a siphon does not meet capture conditions for PIPELINE,
Then capture CANAL/DITCH and, if required, capture UNDERPASS to allow definition of the relationship between CANAL/DITCH and the feature over or under which it passes.

If PIPELINE is elevated over a depression by a structure built for that purpose,
Then capture only PIPELINE, with Relationship to Surface = Elevated.

If PIPELINE is within TUNNEL,
Then capture both PIPELINE and TUNNEL.

If PIPELINE conveys water,
Then collect in the theme Hydrography.

If PIPELINE conveys a product other than water,
Then collect in the theme Built-up.

Trunk pipelines are those that transport raw materials from central gathering points in producing areas to refineries or terminals, or those that transport products from refineries to large consumer areas.

Graphic

If PIPELINE is labeled "Pipeline Bridge",
Then capture PIPELINE, with Relationship to Surface = Elevated.

Revision - General

Revision - Standard

Revision - Limited

Revise aboveground pipelines only. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: PIPELINE_L001
 Dimension: 1

NAM

ABOVEGROUND PIPELINE

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Line</u> Color: Black Lineweight: 0.005"	Label and Name: Color: Black Style: UI CAPS Size: 5-6 Spacing: 0
Product	Unspecified		
Relationship to Surface	At or Near		

NOTE: This symbol applies only to the theme Built-up

Symbol#: PIPELINE_L002
 Dimension: 1

ELEVATED



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Product	Unspecified	<u>Line</u> Color: Black Lineweight: 0.005"	Label: Color: Black Style: UI CAPS Size: 5-6 Spacing: 0
Relationship to Surface	Elevated	<u>Wing Ticks</u> Color: Black Lineweight: 0.003" Length: 0.023" Positioning: pair of ticks meet at each end of line, apex pointing toward line at 45 degrees (inside angle between ticks)	

NOTE: This symbol applies only to the theme Built-up

Symbol#: PIPELINE_L003
 Dimension: 1

NAM

PIPELINE



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Dashed Line</u> Color: Black Lineweight: 0.005"	Label and Name: Color: Black Style: UI CAPS Size: 5-6 Spacing: 0
Product	Unspecified	Dash Length: 0.1" Dash Spacing: 0.02"	
Relationship to Surface	Underground		

NOTE: This symbol applies only to the theme Built-up

Symbol#: PIPELINE_L004
 Dimension: 1

NAM

ABOVEGROUND PIPELINE

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Line</u> Color: Blue Lineweight: 0.008"	Label and Name: Color: Blue Style: UI CAPS Size: 5-6 Spacing: 0
Pipeline Type	General Case		
Product	Water		
Relationship to Surface	At or Near		

NOTE: This symbol applies only to the theme Hydrography

Symbol#: PIPELINE_L005
 Dimension: 1

NAM

PIT

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Line</u> Color: Blue Lineweight: 0.008"	Name and Pipeline Type: Color: Blue Style: UI CAPS Size: 5-6 Spacing: 0
Pipeline Type	Aqueduct or Penstock		
Product	Water		
Relationship to Surface	At or Near		

NOTE: This symbol applies only to the theme Hydrography

Symbol#: PIPELINE_L006
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Pipeline Type	General Case	<u>Line</u> Color: Blue Lineweight: 0.008"	Label: Color: Blue Style: UI CAPS Size: 5-6 Spacing: 0
Product	Water		
Relationship to Surface	Elevated	<u>Wing Ticks</u> Color: Blue Lineweight: 0.003" Length: 0.023" Positioning: pair of ticks meet at each end of line, apex pointing toward line at 45 degrees (inside angle between ticks)	

NOTE: This symbol applies only to the theme Hydrography

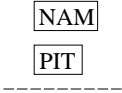
Symbol#: PIPELINE_L007
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Dashed Line</u> Color: Blue Lineweight: 0.008"	Label and Name: Color: Blue Style: UI CAPS Size: 5-6 Spacing: 0
Pipeline Type	General Case	Dash Length: 0.05" Dash Spacing: 0.02"	
Product	Water		
Relationship to Surface	Underground		

NOTE: This symbol applies only to the theme Hydrography

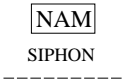
Symbol#: PIPELINE_L008
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Dashed Line</u> Color: Blue	Name and Pipeline Type: Color: Blue
Pipeline Type	Aqueduct or Penstock	Lineweight: 0.008" Dash Length: 0.05" Dash Spacing: 0.02"	Style: UI CAPS Size: 5-6 Spacing: 0
Product	Water		
Relationship to Surface	Underground		

NOTE: This symbol applies only to the theme Hydrography

Symbol#: PIPELINE_L009
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Dashed Line</u> Color: Blue	Label and Name: Color: Blue
Pipeline Type	Siphon	Lineweight: 0.008" Dash Length: 0.05" Dash Spacing: 0.02"	Style: UI CAPS Size: 5-6 Spacing: 0
Product	Water		

NOTE: This symbol applies only to the theme Hydrography

Postscript image not in the database.



Symbol#: PIPELINE_L010
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	Dashed Line Color: Black	Label and Name: Color: Black
Product	Unspecified	Lineweight: 0.006"	Style: UI CAPS
Relationship to Surface	Underwater	Dash Length: 0.1" Dash Spacing: 0.02" Screen: 50%, 150-line biangle	Size: 5-6 Spacing: 0

NOTE: This symbol applies only to Topographic-Bathymetric editions.

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

If PIPELINE, with Relationship to Surface = Elevated is < 0.5" along the longest axis,
 Then suppress label.

Placement

TBD

EXAMPLES

- Carmel, IN
- Carpinteria, CA
- New Cuyama, CA
- Valdosta, GA
- Wolf Creek Pass, CO

PLAYA - The flat area at the lowest part of an undrained desert basin, generally devoid of vegetation.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of PLAYA is the extent of the lowest part of the basin.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If PLAYA is ≥ 0.1 " along the shortest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If PLAYA is captured,
Then also capture BARREN LAND to describe the composition of the area.

Graphic

Lakes that are labeled "Dry" or "Alkalai" are captured as PLAYA.

Revision - General

The edge of a Playa may be indicated by vegetation, discoloration, or sediment line.

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: PLAYA_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	Area Perimeter Color: Blue Lineweight: 0.004"	Name: Color: Black Style: UI CAPS or C/lc Size: 7-14 Spacing: 0-20

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

PLAYA

Placement

TBD

EXAMPLES

POST - An upright piece of timber or other material, in or adjacent to a body of water, used for mooring ships or supporting other structures.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Post Type	Function or purpose
Dolphin	
Piling	

DELINEATION

The limit of POST is the extent of the timber or other material.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if POST is on the final compilation provided to USGS by NOS,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

Graphic

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Postscript image not in the database.  Symbol#: POST_P001
 Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Post Type	Dolphin or Piling	<u>Circle</u> Color: Black Lineweight: 0.003" Diameter: 0.04" <u>Symbol Orientation</u> Origin: center of symbol	Post Type: Color: Black Style: UI C/lc Size: 7 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

POST

EXAMPLES

RAPIDS - An area of swift current in a stream or river, characterized by standing waves or by boulders and rocks.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of RAPIDS is the extent of the turbulent water.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If RAPIDS are on a 1-dimensional STREAM/RIVER and are < 0.02" along the STREAM/RIVER,
 Then RAPIDS are represented as a 0-dimensional basic feature object.

If RAPIDS are on a 1-dimensional STREAM/RIVER and are ≥ 0.02 " along the STREAM/RIVER,
Then RAPIDS are represented as a 1-dimensional basic feature object collinear with the feature object that represents STREAM/RIVER.

If RAPIDS are on a 2-dimensional STREAM/RIVER,
Then RAPIDS are represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If RAPIDS are named,
Or
If RAPIDS are ≥ 0.01 " as measured perpendicular to stream flow,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If RAPIDS are captured,
Then also capture STREAM/RIVER.

If distance between RAPIDS is ≥ 0.05 ",
Then capture as separate RAPIDS.

If distance between RAPIDS is < 0.05 ",
Then capture as one RAPIDS.

Graphic

Capture all.

If RAPIDS are symbolized by hachures,
Then capture as 2-dimensional using the extent of the hachures.

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: RAPIDS_P001
 Dimension: 0



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Double Ticks</u> Color: Blue Lineweight: 0.008" Length: 0.05" Spacing: 0.02" <u>Symbol Orientation</u> Orientation: perpendicular to STREAM/RIVER Origin: center of symbol	Label and Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0

Symbol#: RAPIDS_L001
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Ticks</u> Color: Blue Lineweight: 0.008" Length: 0.05" Placement: at each end of rapid <u>Symbol Orientation</u> Orientation: perpendicular to STREAM/RIVER	Label and Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0

Symbol#: RAPIDS_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Area Fill</u> Color: Blue Pattern: USGS 21A	Label and Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

RAPIDS

Selection

TBD

Placement

TBD

EXAMPLES

Gauley Bridge, WV
Passadumkeag, MN

REEF - A chain of rocks or coral at or near the surface of the water.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of REEF is the edge of the rock or coral.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if REEF is on the final compilation provided to USGS by NOS,
Or
If REEF is on an existing NOS chart,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

Numerous closely spaced ROCKS that form a chain along the coastline or close to the shore are collected as REEF. (Quantified rules are TBD)

Areas within or next to REEF may be land areas, areas that uncover, or water areas. If the area uncovers, see FORESHORE. If the area is water, see SEA/OCEAN.

The characteristics of the REEF, such as coral, are associated with the area that uncovers. See FORESHORE and BARREN LAND (Nonvegetative Surface Cover Theme).

Graphic

Capture all.

The area next to REEF that uncovers is shown with the brown sand pattern on topographic-bathymetric editions and with the black sand pattern on topographic editions. For collection of these areas see FORESHORE and BARREN LAND (Nonvegetative Surface Cover Theme).

REEF is collected along a line that connects the high points of the closed, outer portion of the reef symbol.

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

	Symbol#: REEF_L001 Dimension: 1
---	------------------------------------

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Symbol Orientation</u> Orientation: top (closed portion) of scallops placed along chain and pointed towards open water <u>Scalloped Line</u> Color: Black Lineweight: 0.003" Height Of Scallop: 0.023" Width Of Scallop Leg To Leg: 0.045"	Name: Color: Black Style: UI CAPS or C/lc Size: 7-14 Spacing: 0-20

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

REEF

Selection

TBD

Placement

TBD

EXAMPLES

- Agana, GU (Coral REEF, unnamed reef pools)
- Agat, GU (Coral REEF fringes shoreline for > 5 miles)
- Bar Harbor, ME (Rock REEF shown with tidal flat)
- Haena, HI (Coral REEF without sand pattern)
- Herrington, ME
- Honolulu, HI (Coral REEFS with sand pattern inside)
- Merizo, GU (Coral REEF without sand pattern)
- Naguabo, PR
- Port Richey, FL (Modified REEF symbol with sand pattern inside, labeled "SCATTERED ROCKS")

RESERVOIR - A constructed basin formed to contain water or other liquids.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Construction Material	Predominant material used
Earthen	Constructed of earth, or a combination of earth and rock
Nonearthen	Constructed of concrete, brick or stone
Unspecified	The value is not known and is not required
Elevation	The vertical distance from a given datum
(Integer Value)	Minimum Value: -1289 Maximum Value: 29030 Precision: 0 Length: 5 Increment: 1 Units: feet
Unspecified	The value is not known and is not required
Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Reservoir Type	Function or purpose
Aquaculture	For rearing of finfish, shellfish, or aquatic plants

Decorative Pool	For improving the aesthetic appearance of the landscape
Disposal	For disposal
Disposal Type	Function or purpose
Tailings Pond	Containing, in aqueous form, ore and waste materials discarded in ore-treatment processes
Evaporator	For the natural evaporation of water to allow harvesting of mineral concentrates
Swimming Pool	For swimming
Treatment	For treatment
Treatment Type	Function or purpose
Cooling Pond	For cooling industrial waste water
Filtration Pond	For removing foreign elements from water
Settling Pond	For precipitating solid matter from a liquid
Sewage Treatment Pond	For the treatment of domestic water-born waste
Unspecified	The value is not known and is not required
Water Storage	For long- or short-term storage of water
Cover Status	Existence of a cover
Covered	
Not Covered	
Hydrographic Category	Portion of the year the feature contains water
Intermittent	Contains water for only part of the year, but more than just after rainstorms and at snowmelt
Perennial	Contains water throughout the year, except for infrequent periods of severe drought
Unspecified	The value is not known and is not required

DELINEATION

The limit of RESERVOIR is the rim of the constructed basin.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Connects To		CONNECTOR JUNCTION
Flows To		CONNECTOR JUNCTION

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		< 0.03"	
1-dimensional			
2-dimensional		≥ 0.03"	

Special Conditions:

DATA EXTRACTION

Capture Conditions

If RESERVOIR is a sewage treatment pond or a filtration pond,
 Or
 If RESERVOIR is for water storage and is in an arid region,
 Or
 If RESERVOIR is not a sewage treatment pond or filtration plant, and is ≥ 0.03" along the shortest axis,
 Then capture.

Attribute Information

If RESERVOIR has a printed elevation on a 1:24,000-scale graphic,
 Then Elevation = (Integer Value),
 Else Elevation = Unspecified.

If Reservoir Type = Water Storage and Cover Status = Covered,
 Then Hydrographic Category = Unspecified.

If Reservoir Type = Water Storage and Construction Material = Nonearthen,
Then Hydrographic Category = Unspecified.

If Disposal Type = Tailings Pond,
Then Construction Material = Earthen.

Reservoir Type = Unspecified only in limited update. See Source Interpretation Guidelines, Revision.

If Reservoir Type = Decorative Pool or Swimming Pool,
Then Construction Material = Nonearthen.

If Cover Status = Covered,
Then Construction Material = Nonearthen.



If Reservoir Type = Aquaculture, Treatment, or Evaporator
Then Construction Material = Unspecified.



Source Interpretation Guidelines

All



Refer to the feature definition to decide how to categorize a given feature instance. Do not use the proper name of the feature as a guide. Many features that are known as "Reservoirs" or labeled on the graphic as "Reservoirs" will be captured as LAKE/PONDS. "Stock Tanks" or "Tanks" may be RESERVOIR or LAKE/POND depending on their form. As a general rule, if a water body has a geometric shape or other information indicates it is contained by a constructed basin, capture it as RESERVOIR. If it does not appear to be contained by a constructed basin, capture it as LAKE/POND.



If RESERVOIR is identified as a Minnow Pond, Fish Hatchery, Rearing Pond, Fish Pond, or similar facility,
Then capture RESERVOIR with Reservoir Type = Aquaculture.

Fish ponds in natural water bodies are not captured as RESERVOIR. See ESTUARY, LAKE/POND or SEA/OCEAN.

If RESERVOIR is < 0.03" along the shortest axis and is within 0.02" of another RESERVOIR with the same attribute values,
Then capture as one RESERVOIR only if the combined areas are ≥ 0.03 " along the shortest axis.

If two RESERVOIRS are < 0.005" apart and have the same attribute values,
Then capture as two RESERVOIRS with a shared perimeter line.

If two RESERVOIRS are < 0.005" apart and do not have the same attribute values,
Then displace the perimeter lines equally and capture so that the perimeter lines are 0.005" apart.

If RESERVOIR is an oil sump or sludge pit,
Then collect in the theme Built-Up.

If RESERVOIR is divided by wire mesh, screens, or grates,
Then do not capture the resulting divisions as separate RESERVOIRS.

If RESERVOIR is identified as a sewage disposal pond,
Then capture RESERVOIR with Reservoir Type = Treatment and Treatment Type = Sewage
Treatment Pond.

Graphic

If RESERVOIR is symbolized with a black outline,
Then Construction Material = Nonearthen.

If RESERVOIR is symbolized with a blue or brown outline,
Then Construction Material = Earthen.

If RESERVOIR is < 0.03 " along the shortest axis, and shares an outline with another RESERVOIR
with the same attribute values, and their combined area is ≥ 0.03 " along the shortest axis,
Then capture the combined areas as one RESERVOIR.

Revision - General

Revision - Standard

Revision - Limited

Reservoir Type = Unspecified for newly collected RESERVOIRS. Retain Reservoir Type on existing
RESERVOIRS.

Elevation = Unspecified for newly collected RESERVOIRS. Retain Elevation on existing
RESERVOIRS.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: RESERVOIR_P001
 Dimension: 0

NAM

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<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Circle</u> Color: Black Lineweight: 0.003" Diameter: 0.03"	Name and Treatment Type: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Reservoir Type	Treatment		
Treatment Type	Filtration Pond or Sewage Treatment Pond	<u>Fill</u> Color: Blue Screen: 8%, 120-line at 105°	
		<u>Symbol Orientation</u> Origin: center of symbol	

NOTE: This symbol applies only to the theme Hydrography

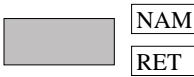
Symbol#: RESERVOIR_P002
 Dimension: 0

◦ NAM

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Circle</u> Color: Black Lineweight: 0.003"	Name: Color: Black Style: UL C/lc
Reservoir Type	Water Storage	Diameter: 0.03" <u>Fill</u> Color: Blue Screen: 8%, 120-line at 105° <u>Symbol Orientation</u> Origin: center of symbol	Size: 7 Spacing: 0

NOTE: This symbol applies only to the theme Hydrography

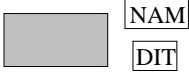
Symbol#: RESERVOIR_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Area Fill</u> Color: Blue Screen: 8%, 120-line at 105°	Name and Reservoir Type: Color: Black Style: UL CAPS or C/lc
Reservoir Type	Aquaculture	<u>Area Perimeter</u> Color: Black Lineweight: 0.003"	Size: 7-10 Spacing: 0-2

NOTE: This symbol applies only to the theme Hydrography

Symbol#: RESERVOIR_A002
Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Nonearthen	<u>Area Fill</u> Color: Black	Disposal Type and Name: Color: Black Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-2
Disposal Type	Oil Sump or Sludge Pit	Pattern: USGS 17	
Name	(Alphanumeric) or Unspecified	<u>Area Perimeter</u> Color: Black Lineweight: 0.003"	
Reservoir Type	Disposal		

NOTE: This symbol applies only to the theme Built-up

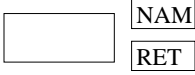
Symbol#: RESERVOIR_A003
Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Earthen	<u>Area Fill</u> Color: Brown	Disposal Type and Name: Color: Black Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-2
Disposal Type	Tailings Pond	Pattern: USGS 19B	
Name	(Alphanumeric) or Unspecified	<u>Dashed Area Perimeter</u> Color: Brown Lineweight: 0.003" Dash Length: 0.07" Dash Spacing: 0.02"	
Reservoir Type	Disposal		

NOTE: This symbol applies only to the theme Hydrography

Symbol#: RESERVOIR_A004
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Unspecified	<u>Area Perimeter</u> Color: Blue	Name and Reservoir Type: Color: Black Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-2
Name	(Alphanumeric) or Unspecified	Lineweight: 0.004"	
Reservoir Type	Evaporator		

NOTE: This symbol applies only to the theme Hydrography

Symbol#: RESERVOIR_A005
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Earthen	<u>Area Fill</u> Color: Blue	Name: Color: Black Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-2
Cover Status	Not Covered	Pattern: USGS 17	
Hydrographic Category	Intermittent	<u>Area Perimeter</u> Color: Blue	
Name	(Alphanumeric) or Unspecified	Lineweight: 0.003"	
Reservoir Type	Water Storage		

NOTE: This symbol applies only to the theme Hydrography

Symbol#: RESERVOIR_A006
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Earthen	<u>Area Fill</u> Color: Blue	Name: Color: Black
Cover Status	Not Covered	Screen: 8%, 120-line at 105°	Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-2
Hydrographic Category	Perennial	<u>Area Perimeter</u> Color: Blue	
Name	(Alphanumeric) or Unspecified	Lineweight: 0.008"	
Reservoir Type	Water Storage		

NOTE: This symbol applies only to the theme Hydrography

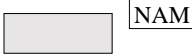
Symbol#: RESERVOIR_A007
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Nonearthen	<u>Area Fill</u> Color: Blue	Name: Color: Black
Cover Status	Not Covered	Screen: 8%, 120-line at 105°	Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-2
Name	(Alphanumeric) or Unspecified	<u>Area Perimeter</u> Color: Black	
Reservoir Type	Water Storage	Lineweight: 0.003"	

NOTE: This symbol applies only to the theme Hydrography

Symbol#: RESERVOIR_A008
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Nonearthen	<u>Area Fill</u> Color: Blue	Name: Color: Black
Cover Status	Covered	Screen: 8%, 120-line at 150°	Style: UL CAPS or C/lc
Name	(Alphanumeric) or Unspecified	Pattern: Hatch Hatch Lineweight: 0.002"	Size: 7-10 Spacing: 0-2
Reservoir Type	Water Storage	Hatch Spacing: 0.02" Hatch Orientation: 45-degrees NW to SE Hatch Color: Black	
		<u>Area Perimeter</u> Color: Black Lineweight: 0.003"	

NOTE: This symbol applies only to the theme Hydrography

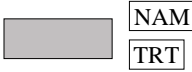
Symbol#: RESERVOIR_A009
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Nonearthen	<u>Area Fill</u> Color: Blue	Name: Color: Black
Name	(Alphanumeric) or Unspecified	Screen: 8%, 120-line at 105°	Style: UL CAPS or C/lc
Reservoir Type	Decorative Pool or Swimming Pool	<u>Area Perimeter</u> Color: Black Lineweight: 0.003"	Size: 7-10 Spacing: 0-2

NOTE: This symbol applies only to the theme Hydrography

Symbol#: RESERVOIR_A010
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Unspecified	<u>Area Fill</u> Color: Blue	Name and Treatment
Name	(Alphanumeric) or Unspecified	Screen: 8%, 120-line at 105°	Type: Color: Black Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-2
Reservoir Type	Treatment	<u>Area Perimeter</u> Color: Black	
Treatment Type	Cooling Pond, Filtration Pond, Settling Pond, or Sewage Treatment Pond	Lineweight: 0.003"	

NOTE: This symbol applies only to the theme Hydrography

Symbol#: RESERVOIR_A011
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Earthen	<u>Area Fill</u> Color: Blue	Name: Color: Black Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-2
Name	(Alphanumeric) or Unspecified	Screen: 8%, 120-line at 105°	
Reservoir Type	Unspecified	<u>Area Perimeter</u> Color: Blue	
		Lineweight: 0.008"	

NOTE: This symbol applies only to the theme Hydrography

Symbol#: RESERVOIR_A012
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Construction Material	Nonearthen	<u>Area Fill</u> Color: Blue	Name: Color: Black
Name	(Alphanumeric) or Unspecified	Screen: 8%, 120-line at 105°	Style: UL CAPS or C/lc Size: 7-10 Spacing: 0-2
Reservoir Type	Unspecified	<u>Area Perimeter</u> Color: Black Lineweight: 0.003"	

NOTE: This symbol applies only to the theme Hydrography

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If perimeter line of RESERVOIR coincides EMBANKMENT,
 Then suppress_section.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

If RESERVOIR coincides AQUACULTURE SITE or INDUSTRIAL SITE and RESERVOIR Name = AQUACULTURE SITE Name or INDUSTRIAL SITE Name,
 Then do not show RESERVOIR Name.

If RESERVOIR, with Reservoir Type = Treatment, Treatment Type = Sewage Treatment Pond coincides SEWAGE DISPOSAL PLANT,
 Then do not show RESERVOIR label.

If RESERVOIR, with Reservoir Type = Treatment, Treatment Type = Filtration Pond coincides FILTRATION PLANT,
 Then do not show RESERVOIR label.

Placement

TBD

EXAMPLES

Courtland, AL (Clarifier and purification)
Palo Alto, CA (Evaporator - salt)
Fort Logan, CO (Filtration bed - covered)
Cary, MS (Fish raising - fish farm)
Martinsville, IN (Fish raising - fish hatchery)
Benton, MS (Fish pond - to be captured as RESERVOIR)
Anachoomalu, HI and Halawa, HI (Fish pond - not captured as RESERVOIR)
Jonesborough, TN (Fish raising - minnows)
Auburndale, FL (Industrial waste)
Dos Pueblos Canyon, CA (Oil sump)
Lamont, CA (Oil sump)
Phoenix, AZ (Sewage disposal)
Carpenteria, CA (Storage, water - perennial)
New Cuyama, CA (Storage, water - intermittent)
Del Sur, CA (Storage, water - intermittent)

ROCK - A concreted mass of stony material.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Relationship to Surface	Vertical location relative to the surface
Abovewater	Exposed at mean lower low water
Underwater	Always submerged

DELINEATION

The limit of ROCK that is abovewater is the edge of the mass exposed at mean lower low water.

The limit of ROCK that is underwater is as shown on the final compilation provided to USGS by NOS.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions

DATA EXTRACTION

Capture Conditions

If ROCK is exposed at mean lower low water and is < 0.03" in the longest axis, and is on an existing NOS chart,
 Or
 For a topographic/bathymetric edition only, if ROCK is on the final compilation provided to USGS by NOS,
 Then capture.

Attribute Information

Source Interpretation Guidelines

All



Do not capture exposed rocks ≥ 0.03 " along the shortest axis as ROCK. See FORESHORE, REEF, and rules for islands within ESTUARY, LAKE/POND, SEA/OCEAN, and STREAM/RIVER. See ISLAND (Named Landforms theme) if named.



Groups of rocks are sometimes surrounded by limiting danger lines, as delineated by NOS. Capture individual rocks as ROCK. Capture the extent of the limiting danger line as HAZARD ZONE.

Numerous closely spaced ROCKS that form a chain along the coastline or close to the shore are collected as REEF. (Quantified rules are TBD)

Graphic

Capture all ROCKS, except submerged rocks shown on topographic maps. ROCKS on pre-1961 maps that are not consistent with current capture conditions are not captured.

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

		Symbol#: ROCK_P001 Dimension: 0
*	NAM	

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Symbol Orientation</u> Orientation: one line aligned with south projection line Origin: center of symbol	Name: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Relationship to Surface	Abovewater or Underwater	<u>Asterisk</u> Color: Black Lineweight: 0.003" Positioning: lines bisect each other Line 1 Length: 0.05" Line 2 Length: 0.05" Angle: 60° Line 3 Length: 0.05"	

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If ROCK coalesces ROCK, separation = 0.005",
 Then TBD.

If ROCK coincides a horizontal control station,
 Then suppress_symbol.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Aripeka, FL
Cross Island, ME
Greenbush, ME
Harrington, ME
Kennebunkport, ME

SEA/OCEAN - The great body of salt water that covers much of the earth.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Sea/Ocean Category	Form or nature
Reef Pool	Pocket of SEA/OCEAN completely surrounded by a coral reef
Unspecified	The value is not known and is not required

DELINEATION

The limit of SEA/OCEAN is the approximate line of mean high water.

In areas where rivers enter SEA/OCEAN, the limit is where the conformation of the land and water make the division obvious, or, if the land and water do not suggest an obvious limit, the limit is where the river reaches a width of 1 nautical mile (6076.1 feet, or 1.15 statute miles) with no further constrictions.

In an area where ESTUARY enters SEA/OCEAN, the limit is where ESTUARY ends.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Connects To		CONNECTOR JUNCTION
Flows To		CONNECTOR JUNCTION

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

Capture all.

Attribute Information

Source Interpretation Guidelines

All

The minimum size for islands within SEA/OCEAN is 0.03" along the shortest axis.

Graphic

If the reef symbol encircles an area shown with the blue water symbol, and the reef symbology points inward,
 Then collect the area as SEA/OCEAN, with Sea/Ocean Category = Reef Pool.

Revision - General

Revision - Standard

Revision - Limited

Do not collect new features. Modify existing features to accommodate a change in SHORELINE.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: SEA_OCEAN_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	Area Fill Color: Blue Screen: 8%, 120-line at 105°	Name: Color: Blue Style: SLI CAPS Size: 8-18 Spacing: 0-28

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

SHORELINE - A naturally occurring line of contact between a body of water and the land.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Positional Accuracy	The accuracy within which a feature can be confidently positioned
Definite	Conditions permit the feature to be confidently positioned. Horizontal data are confidently positioned within 0.02", at map scale, of the true ground position. Vertical data are confidently positioned within one-half contour interval of the true ground position
Indefinite	Conditions prevent the feature from being confidently positioned. Horizontal data cannot be confidently positioned within 0.02", at map scale, of the true ground position. Vertical data cannot be confidently positioned within one-half contour interval of the true ground position

DELINEATION

The Definite SHORELINE is the line of contact between water and land. (See ESTUARY, LAKE/POND, SEA/OCEAN, and STREAM/RIVER for delineation of water surface area.)

The Indefinite SHORELINE in tidal areas is the seaward edge of marine vegetation where that limit would reasonably appear as the SHORELINE to the mariner.

The Indefinite SHORELINE in inland areas is the estimated line of contact between water and land.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If SHORELINE is associated with ESTUARY, 2-dimensional LAKE/POND, SEA/OCEAN, or 2-dimensional STREAM/RIVER that meets capture conditions,
 Then capture.

Attribute Information

Source Interpretation Guidelines

All

The line of contact between a body of water and the land is captured as either SHORELINE or NONEARTHEN SHORE. Other structures, such as DAM/WEIR, PIER/BREAKWATER/JETTY, or WHARF may coincide with the SHORELINE or NONEARTHEN SHORE, in which case both features are captured.

If a structure (DAM/WEIR, GATE, WALL) separates water from water,
 Then do not capture SHORELINE. See the other feature.

Graphic

If there is no evidence that a Photorevised (purple) outline is PIER/BREAKWATER/JETTY, WHARF, DRYDOCK, NONEARTHEN SHORE, DAM/WEIR with Construction Material = Nonearthen, or SPILLWAY,
 Then capture outline as SHORELINE.

If SHORELINE is symbolized as apparent, indefinite, or unsurveyed,
Then Positional Accuracy = Indefinite.

Revision - General

Revision - Standard

Revision - Limited

Collect new SHORELINE if new LAKE/POND or STREAM/RIVER is collected.

Modify existing SHORELINE only if there are obvious changes to a stream channel.

Modify existing coastal SHORELINE only if there are obvious manmade changes. Do not modify existing coastal SHORELINE where there are natural changes, unless you can verify that the new shoreline represents approximate mean high water, using nautical charts or by determining that the photography was taken at mean high water.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: SHORELINE_L001
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Positional Accuracy	Definite	Line Color: Blue Lineweight: 0.008"	N/A

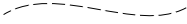
Symbol#: SHORELINE_L002
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Positional Accuracy	Indefinite	Line Color: Blue Lineweight: 0.004"	N/A

NOTE: SHORELINE is associated with SEA/OCEAN

Symbol#: SHORELINE_L003
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Positional Accuracy	Indefinite	<u>Dashed Line</u> Color: Blue Lineweight: 0.004" Dash Length: 0.07" Dash Spacing: 0.02"	N/A

NOTE: SHORELINE is associated with LAKE/POND or STREAM/RIVER

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

N/A

Selection

TBD

Placement

TBD

EXAMPLES

St. Clements Island, MD-VA (Apparent SHORELINE - topobathy)

SINK/RISE - The place at which a stream disappears underground or reappears at the surface in a karst area.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of SINK/RISE is the extent of the hole where the stream disappears or reappears.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If SINK/RISE is on a 1-dimensional STREAM/RIVER,
 Then SINK/RISE is represented as a 0-dimensional basic feature object.

If SINK/RISE is on a 2-dimensional STREAM/RIVER,
Then SINK/RISE is represented as a 1-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If SINK/RISE is on STREAM/RIVER,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

Do not capture indeterminate points where streams dissipate into the ground as SINK/RISE. These points are indicated by the end of the feature STREAM/RIVER.

Do not capture the point where streams enter into manmade features as SINK/RISE. These points are indicated by the end of the feature STREAM/RIVER.

Graphic

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: SINK_RISE_P001
 Dimension: 0

NAM

>

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Wing Ticks</u> Color: Blue Lineweight: 0.008" Length: 0.04" Positioning: pair of ticks intersect at ends, at 45 degrees (inside angle between ticks) Angle: 90° <u>Symbol Orientation</u> Orientation: apex points towards incoming or outgoing symbol Origin: apex of symbol	Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0

Symbol#: SINK_RISE_L001
 Dimension: 1

NAM
 >

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Headline</u> Color: Blue Lineweight: 0.008" Positioning: placed along chain collected for SINK/RISE Headline Length: equal to width of STREAM/RIVER entering or exiting SINK/RISE <u>Wing Ticks</u> Color: Blue Lineweight: 0.008" Length: 0.04" Positioning: placed at each end of headline, pointing in opposite direction of STREAM/RIVER at 135 degrees from headline (inside angle between wing tick and headline)	Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

SINK/RISE

EXAMPLES

Baker, WV
Fern Canyon Quadrangle, CA
Fossil Hill, WY
Mount Arter, WY
Powersburg, KY
Taft Quadrangle, CA

SNAG/STUMP - A firmly attached stem or trunk of a tree near the surface of water.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Relationship to Surface	Vertical location relative to the surface
Above water	Exposed at mean lower low water
Underwater	Always submerged
Snag/Stump Type	
Snag	
Stump	

DELINEATION

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if SNAG/STUMP is on the final compilation provided to USGS by NOS,
 Then capture.

Attribute Information

Source Interpretation Guidelines

All

Graphic

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale


Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Postscript image not in the database. 

Symbol#: SNAG_STUMP_P001
 Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Relationship to Surface	Abovewater or Underwater	<u>Circle</u> Color: Black Lineweight: 0.003" Diameter: 0.04"	Snag/Stump Type: Color: Black Style: UI C/lc Size: 7 Spacing: 0
Snag/Stump Type	Snag or Stump	<u>Symbol Orientation</u> Origin: center of symbol	

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

SOUNDING DATUM LINE - A line representing the tidal datum to which bathymetric contours are referenced.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Positional Accuracy	The accuracy within which a feature can be confidently positioned
Approximate	Conditions permit the feature to be confidently positioned between 0.02" and 0.1", at map scale, of its true ground position.
Definite	Conditions permit the feature to be confidently positioned. Horizontal data are confidently positioned within 0.02", at map scale, of the true ground position. Vertical data are confidently positioned within one-half contour interval of the true ground position

DELINEATION

The limit of SOUNDING DATUM LINE is the line of mean lower low water.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if SOUNDING DATUM LINE is on the final compilation provided to USGS by NOS,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If SOUNDING DATUM LINE is not symbolized on the source (as when the position of the line is indicated by the edge of the FORESHORE tint on graphic source, rather than by a unique line symbol),
Then Positional Accuracy = Approximate.

Graphic

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Postscript image not in the database.  Symbol#: SOUNDING_DATUM_LINE_L001
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Positional Accuracy	Definite	<u>Dotted Line</u> Color: Blue Dot Spacing: 0.01" Diameter: 0.01"	N/A

Postscript image not in the database.  Symbol#: SOUNDING_DATUM_LINE_L002
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Positional Accuracy	Indefinite	N/A	N/A

NOTE: No symbol is shown for indefinite SOUNDING DATUM LINE. Position is indicated by edge of fill patterns.

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

SOUNDING DATUM LINE

Selection

TBD

Placement

TBD

EXAMPLES

SPECIAL USE ZONE - An area where distinctive types of maritime activities occur.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Operational Status	State or condition
Abandoned	Intact but not maintained or intended for use
Operational	Usable and intended for use
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Special Use Zone Type	Function or purpose
Dump Site	For dumping of discarded materials
Spoil Area	For the disposal of material obtained by dredging

DELINEATION

The limit of **SPECIAL USE ZONE** is the extent of the area used for distinctive activities.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if SPECIAL USE ZONE is on the final compilation provided to USGS by NOS,
 Then capture.

Attribute Information

Source Interpretation Guidelines

All

If SPECIAL USE ZONE is within LAKE/POND, SEA/OCEAN, or STREAM/RIVER,
 Then capture both SPECIAL USE ZONE and the other feature.



SPECIAL USE ZONE may coincide with FORESHORE, SWAMP/MARSH, or land areas.

Artificially formed islands, such as those in rows that do not match the adjacent natural pattern of islands in the area, should be included in the SPECIAL USE ZONE.



Graphic

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required


Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Postscript image not in the database.  Symbol#: SPECIAL_USE_ZONE_A001
 Dimension: 2

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Operational Status	Operational	N/A	Special Use Zone Type: Color: Black Style: UL CAPS or C/lc Size: 6-9 Spacing: 0-4
Special Use Zone Type	Dump Site or Spoil Area		

Postscript image not in the database.  Symbol#: SPECIAL_USE_ZONE_A002
 Dimension: 2

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Operational Status	Abandoned	N/A	Label and Special Use Zone Type: Color: Black Style: UL CAPS or C/lc Size: 6-9 Spacing: 0-4
Special Use Zone Type	Dump Site or Spoil Area		

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

SPECIAL USE ZONE LIMIT - The limit of an area used for distinctive types of maritime activities.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Positional Accuracy	The accuracy within which a feature can be confidently positioned
Definite	Conditions permit the feature to be confidently positioned. Horizontal data are confidently positioned within 0.02", at map scale, of the true ground position. Vertical data are confidently positioned within one-half contour interval of the true ground position
Indefinite	Conditions prevent the feature from being confidently positioned. Horizontal data cannot be confidently positioned within 0.02", at map scale, of the true ground position. Vertical data cannot be confidently positioned within one-half contour interval of the true ground position

DELINEATION

The position of SPECIAL USE ZONE LIMIT is determined by the extent of SPECIAL USE ZONE.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

For a topographic/bathymetric edition only, if SPECIAL USE ZONE LIMIT is on the final compilation provided to USGS by NOS,
Then capture.

Attribute Information

If SPECIAL USE ZONE LIMIT is indicated only by a change in fill patterns on the source,
Then Positional Accuracy = Indefinite.



If SPECIAL USE ZONE LIMIT coincides with definite SHORELINE or definite SOUNDING DATUM LINE,
Then Positional Accuracy = Definite.



Source Interpretation Guidelines

All

Graphic

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Postscript image not in the database.  Symbol#: SPECIAL_USE_ZONE_LIMIT_L001
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Positional Accuracy	Definite	Dashed Line Color: Black Lineweight: 0.007" Dash Length: 0.1" Dash Spacing: 0.02"	N/A

Postscript image not in the database.  Symbol#: SPECIAL_USE_ZONE_LIMIT_L002
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Positional Accuracy	Indefinite	N/A	N/A

NOTE: No symbol is shown for indefinite SPECIAL USE ZONE AREA LIMITS. Position is indicated by edge of fill patterns.

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

SPILLWAY - A constructed passage for surplus water to run over or around a dam.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of SPILLWAY is the extent of the structure over which water flows.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If SPILLWAY is constructed of masonry and is $\geq 0.02''$ along the shortest axis,
Then capture.

Attribute Information

N/A

Source Interpretation Guidelines

All

If SPILLWAY is captured,
Then also capture NONEARTHEN SHORE along the edge of any adjacent water body.

Tunnel or closed-conduit spillways, including glory-holes and risers, are not captured as SPILLWAY.
See WATER INTAKE/OUTFLOW or PIPELINE.

Do not capture overflow spillways as SPILLWAY. See DAM/WEIR.

Graphic

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: SPILLWAY_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	<u>Area Perimeter</u> Color: Black Lineweight: 0.003"	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

If "Spillway Elevation (Integer Value)" label for LAKE/POND is placed adjacent to SPILLWAY, Then do not show SPILLWAY label.

Placement

TBD

EXAMPLES

SPRING/SEEP - A place where water issues from the ground naturally.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Water Characteristics	Distinctive properties of the water
Alkaline	Water shows evidence of alkali salts
Hot	Water temperature is higher than that of the human body (98.6 degrees F)
Sulphur	
Unspecified	The value is not known and is not required

DELINEATION

The limit of **SPRING/SEEP** is the extent of the place where water issues from the ground.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions

DATA EXTRACTION

Capture Conditions

If SPRING/SEEP is in an arid region,
Or

If SPRING/SEEP is not in an arid region and is large or well known,
Then capture.

Attribute Information

If "Hot", "Sulphur", or "Alkali" appear in the proper name of SPRING/SEEP,
Then give like value to Water Characteristics.

Source Interpretation Guidelines

All

If SPRING/SEEP is in an area of closely spaced springs,
Then first capture named SPRING/SEEPS, then those that are on the perimeter of the area, then those that are most prominent, then finally capture a representative pattern of SPRING/SEEPS internal to the area. Capture as many as can be shown in correct position. The symbols must not overlap.

See Appendix 2A for location of arid regions.

If SPRING/SEEP is connected to STREAM/RIVER or AREA OF COMPLEX CHANNELS,
Then also capture JUNCTION.

Graphic

An elevation on SPRING/SEEP is captured as SPOT ELEVATION.

Do not capture springs labelled 'dry'. See LOCALE (Built-Up theme).

If SPRING/SEEP is identified as "Salt" on the graphic,
Then Water Characteristics = Alkaline.

If Water Characteristics of SPRING/SEEP are not specifically identified on the graphic,
Then Water Characteristics = Unspecified.

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: SPRING_SEEP_P001
 Dimension: 0

NAM

- Spring

(WAC)

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	Dot Color: Blue Diameter: 0.03"	Label, Name, and Water Characteristics: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0
Water Characteristics	Alkaline, Hot, Sulphur, or Unspecified	<u>Symbol Orientation</u> Origin: center of symbol	

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If SPRING/SEEP coincides 2-dimensional LAKE/POND or STREAM/RIVER,
 Then suppress_symbol and show Name only.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

If the descriptive labels "Hot", "Alkali", or "Sulphur" are a part of Name,
Then delete Water Characteristics.

Placement

TBD

EXAMPLES

Saddle Mountain, CO
Tubb Canyon, CA
Upheaval Dome, UT

STREAM/RIVER - A body of flowing water.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Elevation (Integer Value)	The vertical distance from a given datum Minimum Value: -1289 Maximum Value: 29030 Precision: 0 Length: 5 Increment: 1 Units: feet
Stage Normal Pool	Height of water surface The stage of an artificially impounded water body that prevails for the greater part of the year
Not Applicable	The attribute does not apply and therefore cannot be valued
Hydrographic Category Intermittent Perennial	Portion of the year the feature contains water Contains water for only part of the year, but more than just after rainstorms and at snowmelt Contains water throughout the year, except for infrequent periods of severe drought
Photorevision Category Not Photorevised Photorevised	Whether or not a feature was added or modified as part of a photorevision assignment Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Positional Accuracy Definite	The accuracy within which a feature can be confidently positioned Conditions permit the feature to be confidently positioned. Horizontal data are confidently positioned within 0.02", at map scale, of the true ground position. Vertical data are

	confidently positioned within one-half contour interval of the true ground position
Indefinite	Conditions prevent the feature from being confidently positioned. Horizontal data cannot be confidently positioned within 0.02", at map scale, of the true ground position. Vertical data cannot be confidently positioned within one-half contour interval of the true ground position
Not Applicable	The attribute does not apply and therefore cannot be valued

DELINEATION

The limit of a perennial STREAM/RIVER is the position of the shoreline when the water is at the stage that prevails for the greater part of the year.

The limit of an intermittent STREAM/RIVER is the position of the shoreline when the water is at the stage that prevails when the feature is at or near capacity.

The upper limit of STREAM/RIVER is where the feature first becomes evident as a channel.

The limit of STREAM/RIVER where it enters or leaves LAKE/POND is determined by the conformation of the land.

The limit of STREAM/RIVER where it enters SEA/OCEAN is where the conformation of the land and water make the division obvious, or, if the land and water do not suggest an obvious limit, the limit is where the stream reaches a width of 1 nautical mile (6076.1 feet or 1.15 statute miles) with no further constrictions.

The limit of STREAM/RIVER where it enters ESTUARY is where ESTUARY ends.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Connects To		CONNECTOR JUNCTION
Flows To		CONNECTOR JUNCTION
Is Above		UNDERPASS

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		< 0.025"	
2-dimensional		≥ 0.025"	

Special Conditions:

To accommodate variations in the shortest axis of STREAM/RIVER:

If shortest axis of STREAM/RIVER is:

< 0.025" but ≥ 0.01" for a distance < 2.64", and is connected at both ends to a 2-dimensional STREAM/RIVER,
 Then STREAM/RIVER is represented as a 2-dimensional basic feature object.

< 0.025" but ≥ 0.01" for a distance ≥ 2.64", or < 0.01" regardless of distance, and is connected at both ends to a 2-dimensional STREAM/RIVER,
 Then STREAM/RIVER is represented as a 1-dimensional basic feature object.

≥ 0.025" but < 0.04" for a distance < 2.64", and is connected at both ends to a 1-dimensional STREAM/RIVER,
 Then STREAM/RIVER is represented as a 1-dimensional basic feature object.

≥ 0.025" but < 0.04" for a distance ≥ 2.64", or ≥ 0.04" regardless of distance, and is connected at both ends to a 1-dimensional STREAM/RIVER,
 Then STREAM/RIVER is represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If STREAM/RIVER flows from LAKE/POND or SPRING/SEEP,
Or
If STREAM/RIVER is ≥ 1.25 " along the longest axis,
Or
If STREAM/RIVER is perennial and is in an arid region,
Then capture.

Attribute Information

If the water level of STREAM/RIVER is controlled for navigation by DAM/WEIR or GATE with Gate Type = Lock,
Then Elevation = (Integer Value),
Else Elevation = Not Applicable.

If STREAM/RIVER coincides with LOCK CHAMBER,
Then Elevation = Not Applicable.

If STREAM/RIVER is represented as a 2-dimensional basic feature object,
Then Positional Accuracy = Not Applicable.

Source Interpretation Guidelines

All

If STREAM/RIVER is part of WATERCOURSE,
Then collect a name with WATERCOURSE.

See Appendix 2A for location of arid regions.

In arid areas it is difficult to distinguish between narrow intermittent and ephemeral drains and no distinction will be made. All drainages < 0.025 " are collected as 1-dimensional intermittent streams. Thin drainage in arid areas to appropriately represent the "wetness" of the area. Rules for thinning intermittent streams in arid areas will be documented as more information becomes available.

If STREAM/RIVER intersects the quadrangle boundary and an overedge source is not available to aid in determining length,
Then capture STREAM/RIVER, regardless of length.

If a portion of STREAM/RIVER flows through SWAMP/MARSH,
Then select the appropriate Hydrographic Category according to the definitions given.

Do not capture areal dry washes, arroyos, dry gulches and ephemeral streams as STREAM/RIVER.

See WASH.

The minimum size for islands within STREAM/RIVER is 0.03" along the shortest axis.

If a stream flows in a braided pattern,
Then see AREA OF COMPLEX CHANNELS.

Graphic

If STREAM/RIVER flows from SPRING/SEEP,
Then capture STREAM/RIVER starting at the center of SPRING/SEEP symbol.

Revision - General

If the headwaters of STREAM/RIVER are closer than 0.5" from a saddle or divide,
Then capture STREAM/RIVER starting 0.5" from the saddle or divide.

If image shows lower than average water level,
Then capture STREAM/RIVER at a normal pool or average water level by using ancillary sources or evidence of water marks on images.

If image shows lower than average water level and the average water elevation or normal pool elevation cannot be determined,
Then capture STREAM/RIVER at the visible edge of the water body.

If image shows higher than average water level,
Then capture STREAM/RIVER at a normal pool or average water level by using ancillary sources.

If image shows higher than average water level and the average water elevation or normal pool elevation cannot be determined,
Then capture STREAM/RIVER at the visible edge of the water body.

Revision - Standard

Revision - Limited

Do not add new features. Modify existing features only if there are obvious changes in the stream channel.

Use ancillary source if Elevation is required.

Value Hydrographic Category by looking at the surrounding drainage.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

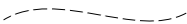
Symbolization

Symbol#: STREAM_RIVER_L001
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Hydrographic Category	Perennial	<u>Line</u> Color: Blue	N/A
Positional Accuracy	Definite	Lineweight: 0.008"	

Symbol#: STREAM_RIVER_L002
 Dimension: 1



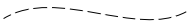
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Hydrographic Category	Perennial	<u>Dashed Line</u> Color: Blue	N/A
Positional Accuracy	Indefinite	Lineweight: 0.008" Dash Length: 0.07" Dash Spacing: 0.02"	

Symbol#: STREAM_RIVER_L003
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Hydrographic Category	Intermittent	<u>Line</u> Color: Blue	N/A
Positional Accuracy	Definite	Lineweight: 0.004"	

Symbol#: STREAM_RIVER_L004
 Dimension: 1





<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Hydrographic Category	Intermittent	<u>Dashed Line</u> Color: Blue	N/A
Positional Accuracy	Indefinite	Lineweight: 0.004" Dash Length: 0.07" Dash Spacing: 0.02"	

Symbol#: STREAM_RIVER_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Elevation	(Integer)	<u>Area Fill</u> Color: Blue	Elevation and Label: Color: Blue
Hydrographic Category	Perennial	Screen: 8%, 120-line at 105°	Style: UI CAPS Size: 5 Spacing: 0

			Symbol#: STREAM_RIVER_A002 Dimension: 2
			
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Elevation	Not Applicable	<u>Area Fill</u> Color: Blue	N/A
Hydrographic Category	Perennial	Screen: 8%, 120-line at 105°	

			Symbol#: STREAM_RIVER_A003 Dimension: 2
			
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Hydrographic Category	Intermittent	<u>Area Fill</u> Color: Blue Pattern: USGS 17	N/A

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Douglas North, GA (Indefinite STREAM/RIVER in swamp)
 Ennis Lake, MT (Fletcher Channel)

SUBMERGED STREAM - An old river course inundated by an impounded water body.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of SUBMERGED STREAM is the extent of the banks as previously mapped.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If SUBMERGED STREAM is published as a double-line stream on previous mapping at the same or larger scale and the stream has since been submerged by an impounded lake or stream,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

SUBMERGED STREAM must be coincident with LAKE/POND. Therefore, SUBMERGED STREAM cannot be collected outside of the impounded water area.

If SUBMERGED STREAM is captured,
Then also capture LAKE/POND.

Graphic

Capture all.

If the dashed symbol ends within 0.01" of the limits of the impounded water area,
Then delineate the area using the limits of the impounded water area.

If the end of dashed symbol is greater than 0.01" from the limits of the impounded water area,
Then delineate the area by connecting the ends of the dashed outline with a straight line.

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: SUBMERGED_STREAM_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Dashed Area Perimeter</u> Color: Blue Lineweight: 0.004" Dash Length: 0.07" Dash Spacing: 0.02"	Name: Color: Blue Style: SLI CAPS or C/lc Size: 9-12 Spacing: 1-3

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If SUBMERGED STREAM symbol_follows DAM/WEIR, NONEARTHEN SHORE, or SHORELINE (separation \geq 0.01", distance \geq 0.1"),
 Then suppress_section.

If SUBMERGED STREAM coincides LANE,
 Then suppress_symbol.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

SUBMERGED STREAM

Selection

TBD

Placement

TBD

EXAMPLES

Beverly, WA
Bowman Dam, OR
Keyesport, IL
Newville, WV
Rufus, OR-WA
Vantage, WA (Submerged ponds)

SWAMP/MARSH - A noncultivated, vegetated area that is inundated or saturated for a significant part of the year. The vegetation is adapted for life in saturated soil conditions.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of SWAMP/MARSH is the extent of the wet, spongy area.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

If SWAMP/MARSH is ≥ 0.1 " along the shortest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

Break SWAMP/MARSH for RAILWAYS and for Class 1 and Class 2 ROADS.

Break SWAMP/MARSH for clearings that are ≥ 0.05 " along the shortest axis, or for linear clearings that are ≥ 0.025 " along the shortest axis.

SWAMP/MARSH may be coincident with AREA OF COMPLEX CHANNELS, ESTUARY, LAKE/POND, SEA/OCEAN, STREAM/RIVER, or TREES.

Do not capture cranberry bogs and other cultivated cropland as SWAMP/MARSH. See CULTIVATED CROPLAND. Rice fields are not captured.

Do not capture mangrove areas as SWAMP/MARSH, see TREES (Vegetative Surface Cover theme).

Graphic

Capture as SWAMP/MARSH any areas filled with the marsh and swamp symbol.

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

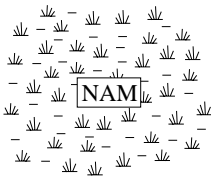
All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: SWAMP_MARSH_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Area Fill</u> Color: Blue Pattern: USGS 2	Name: Color: Blue Style: SLI CAPS or C/lc Size: 8-16 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

SWAMP/MARSH

Selection

TBD

Placement

TBD

EXAMPLES

Beach, GA

TUNNEL - An underground or underwater passage.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of TUNNEL is the walls of and openings to the passage.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If TUNNEL provides passage for a hydrographic feature,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If TUNNEL meets capture conditions and provides passage for another feature (CANAL/DITCH, PIPELINE with Product = Water),
Then capture both TUNNEL and the other feature.

If a tunnel does not meet capture conditions and carries another feature,
Then capture that feature, and if required, capture UNDERPASS to allow definition of the relationship between that feature and any other feature over or under which it passes.

If TUNNEL provides passage for ROAD or RAILWAY,
Then collect in the theme Transportation.

If there are two TUNNEL passages and the overall width is < 100 ft,

Or

If there are two TUNNEL passages and the separation between the passages is < 20 ft,
Then capture one instance of TUNNEL.

Graphic

If TUNNEL is symbolized by a three line symbol,
Then capture as one instance of TUNNEL.

Water tunnels in Hawaii that are shown with the adit symbol are not captured as TUNNEL. See WELL.

Revision - General

Revision - Standard

Revision - Limited

If the alignment of TUNNEL is unknown,
Then align TUNNEL in a straight line between openings.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: TUNNEL_L001
 Dimension: 1

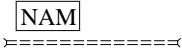
NAM

»=====«

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Dashed Casing</u> Color: Black Lineweight: 0.005" Dash Length: 0.05" Dash Spacing: 0.02" Line Spacing: 0.02" <u>Headline</u> Color: Black Lineweight: 0.003" Length: 0.02" Positioning: placed at each end of dashed casing, perpendicular to dashed casing <u>Wing Ticks</u> Color: Black Lineweight: 0.003" Length: 0.023" Positioning: placed at each end of headline, pointing in opposite direction of dashed casing, at 135 degrees from headline (inside angle between wing tick and headline)	Name: Color: Black Style: UI CAPS Size: 6-7 Spacing: 0

NOTE: This symbol applies only to the theme Transportation.

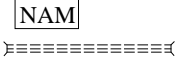
Symbol#: TUNNEL_L101
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Dashed Casing</u> Color: Blue Lineweight: 0.004" Dash Length: 0.05" Dash Spacing: 0.02" Line Spacing: 0.02" <u>Headline</u> Color: Blue Lineweight: 0.003" Length: 0.02" Positioning: placed at each end of dashed casing, perpendicular to dashed casing <u>Wing Ticks</u> Color: Blue Lineweight: 0.003" Length: 0.023" Positioning: placed at each end of headline, pointing in opposite direction of dashed casing, at 135 degrees from headline (inside angle between wing tick and headline)	Name: Color: Blue Style: UI CAPS Size: 6-7 Spacing: 0

NOTE: This symbol applies only to the theme Hydrography.

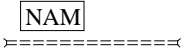
Symbol#: TUNNEL_L102
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Dashed Casing</u> Color: Black Lineweight: 0.003" Dash Length: 0.05" Dash Spacing: 0.02" Line Spacing: 0.04" <u>Headline</u> Color: Black Lineweight: 0.003" Positioning: placed at each end of dashed casing, perpendicular to dashed casing Minimum Length: 0.037" <u>Wing Ticks</u> Color: Black Lineweight: 0.003" Length: 0.023" Positioning: placed at each end of headline, pointing in opposite direction of dashed casing, at 135 degrees from headline (inside angle between wing tick and headline) <u>Dashed Centerline</u> Color: Black Lineweight: 0.003" Dash Length: 0.05" Dash Spacing: 0.02"	Name: Color: Black Style: UI CAPS Size: 6-7 Spacing: 0

NOTE: This symbol applies only to the theme Transportation.

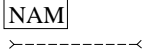
Symbol#: TUNNEL_L103
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Dashed Casing</u> Color: Black Lineweight: 0.003" Dash Length: 0.05" Dash Spacing: 0.02" Line Spacing: 0.02" <u>Headline</u> Color: Black Lineweight: 0.003" Length: 0.02" Positioning: placed at each end of dashed casing, perpendicular to casing <u>Wing Ticks</u> Color: Black Lineweight: 0.003" Length: 0.023" Positioning: placed at each end of headline, pointing in opposite direction of dashed casing, at 135 degrees from headline (inside angle between wing tick and headline)	Name: Color: Black Style: UI CAPS Size: 6-7 Spacing: 0

NOTE: This symbol applies only to the theme Transportation.

Symbol#: TUNNEL_L104
 Dimension: 1



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Dashed Line</u> Color: Black Lineweight: 0.015" Dash Length: 0.04" Dash Spacing: 0.02" Screen: 50%, 150-line biangle <u>Wing Ticks</u> Color: Black Lineweight: 0.003" Length: 0.023" Positioning: pair of ticks meet at each end of dashed line, apex pointing toward dashed line, at 45 degrees (inside angle between ticks)	Name: Color: Black Style: UI CAPS Size: 6-7 Spacing: 0

NOTE: This symbol applies only to the theme Transportation.

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If TUNNEL is in a congested area and would obscure surface features if shown,
 Then suppress_section.

If TUNNEL coalesces RAILWAY or ROAD with width ≥ 0.02 ",
 Then scale TUNNEL such that length of headline and overall width of the casings = the width of the other feature.

If TUNNEL is < 0.12 " along the longest axis,
 Then suppress_section (Dashed Casing).

If TUNNEL coincides a Hydrographic feature,
 Then resymbolize using L101.

If TUNNEL coincides ROAD, with Road Class = Class 1 or Class 2, and with Median Category = Median Included,
 Then resymbolize using L102 and width = ROAD Width.

If TUNNEL coincides ROAD, with Road Class = Class 1 or Class 2, and with Median Category = Median Not Included,

Then resymbolize using L103 and width = ROAD Width.

If TUNNEL coincides ROAD with Road Class = Class 3,
Then resymbolize using L104.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

If Name or Label cannot be positioned parallel to the symbol,
Then change to:

Style: UL C/lc

Size: 7

Spacing: 0

Placement

TBD

EXAMPLES

Boston, MA
Carpenteria, CA
Cascadel Point, CA
Commerce City, CO
Honolulu, HI
Jersey City, NJ
Kaneohe, HI
Koko Head, HI
Little Switzerland, NC
Otay Mesa, CA
Pulga, CA
San Fransisco North, CA
Springdale East, UT
Storre, CA
Waipahu, HI
Washington West, DC-MD
Weehawken, NJ
Wheeling, WV
Wilson Peak, UT

UNDERPASS - The grade separation where part or all of one feature instance is directly above part or all of another feature instance.

ATTRIBUTE/ATTRIBUTE VALUE LIST

N/A

DELINEATION

The limit of UNDERPASS is the extent of the horizontal area where the two separated feature instances overlap.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Is Above		AREA OF COMPLEX CHANNELS BRIDGE CANAL/DITCH FLUME STREAM/RIVER

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If the feature object above UNDERPASS is 0-dimensional, and the feature object below UNDERPASS is 1-dimensional, or vice-versa,
 Then UNDERPASS is represented as a 0-dimensional basic feature object.

If the feature object above and the feature object below UNDERPASS are both 1-dimensional, and they are not collinear in the planar graph,
 Then UNDERPASS is represented as a 0-dimensional basic feature object.

If the feature object above and the feature object below UNDERPASS are both 1-dimensional, and they are at least partially collinear in the planar graph (they share at least one chain if in the same surface, or some linear portion of their chains match if in different surfaces),
 Then UNDERPASS is represented as a 1-dimensional basic feature object.

If the feature object above UNDERPASS is 1-dimensional and the feature object below UNDERPASS is

2-dimensional, or vice-versa,
Then UNDERPASS is represented as a 1-dimensional basic feature object.

If the feature object above and the feature object below UNDERPASS are both 2-dimensional,
Then UNDERPASS is represented as a 2-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If UNDERPASS occurs where AREA OF COMPLEX CHANNELS, BUILDING, CANAL/DITCH, RAILWAY, ROAD, RUNWAY/APRON/TAXIWAY, or STREAM/RIVER cross over each other at different levels, and if there is no captured structure indicating vertical relationship and the vertical relationship is not otherwise inferable,

Or

If UNDERPASS occurs at BRIDGE,
Then capture.

Attribute Information

N/A

Source Interpretation Guidelines

All

Do not capture UNDERPASS, even if there is no captured separating structure, between ROAD or RAILWAY, and a waterbody. Without a structure, ROAD or RAILWAY is always assumed to be above the waterbody, never below.

Only two feature objects may be involved in instances of the Is Above relationship with an UNDERPASS feature object. In a case of three or more feature objects overpassing each other at the same place, only vertically adjacent feature objects are involved in Is Above relationship instances with any one UNDERPASS feature object. Thus, a triple level stacking of feature objects requires two UNDERPASS feature objects; one UNDERPASS between the top and middle feature objects, and the other UNDERPASS between the middle and bottom feature objects.

If the features that cross at UNDERPASS are in two different themes,
Then capture UNDERPASS in both themes.

Graphic

Revision - General

Revise if features participating in relationship are revised.

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: UNDERPASS_P001
 Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	N/A	N/A

Symbol#: UNDERPASS_L001
 Dimension: 1

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	N/A	N/A

Symbol#: UNDERPASS_A001
 Dimension: 2

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	N/A	N/A

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

N/A

Placement

N/A

EXAMPLES

WALL - An upright structure of masonry, wood, plaster, or other building material serving to enclose, divide, or protect an area.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Wall Type	Function or purpose
General Case	Common use
Sea	A wall set back from the shoreline for the purpose of holding back the sea.

DELINEATION

The limit of WALL is the edge of the structure.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional		> 0	
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If WALL is a seawall,

Or

If WALL is associated with a 2-dimensional LOCK CHAMBER and WALL has water on both sides,

Or

If WALL extends into a body of water and is not a pier/breakwater/jetty or seawall,

Then capture.

Attribute Information

Source Interpretation Guidelines

All

If WALL is not associated with a hydrographic feature,
Then capture in the Built-Up theme.

If DAM/WEIR, NONEARTHEN SHORE, PIER/BREAKWATER/JETTY, or SPILLWAY is
captured,
Then do not capture WALL.

If the edge of LOCK CHAMBER separates water from land,
Then do not capture WALL. See NONEARTHEN SHORE or SHORELINE.

Graphic

Revision - General

Revision - Standard

Revision - Limited



Do not revise. Retain existing.



DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

<u>WALL</u>	Symbol#: WALL_L001 Dimension: 1
-------------	------------------------------------

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
N/A	N/A	<u>Line</u> Color: Black Lineweight: 0.007"	Label: Color: Black Style: UI CAPS Size: 5-7 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

WALL

EXAMPLES

Occoquan, VA
Jersey City, NJ
Joliet, IL
Kailua, HI
Leavenworth, KS
San Francisco North, CA
West of Snowstorm Mountain, CA

WASH - The usually dry portion of a stream bed that contains water only during or after a local rainstorm or heavy snowmelt.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of WASH is the cut banks of the dry channel.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional	> 0		

Special Conditions:

DATA EXTRACTION

Capture Conditions

→ If WASH is ≥ 0.025 " along the shortest axis, and is ≥ 1.25 " along the longest axis, and is greater than or equal to two times the width of any STREAM/RIVER within the WASH, and is in an arid region,
Then capture. ←

Attribute Information

Source Interpretation Guidelines

All

Capture the stream bed portion of the channel that contains water more than just during or after local rainstorms or heavy snowmelt as STREAM/RIVER.

If WASH is captured,
Then also capture BARREN LAND (Nonvegetative Surface Cover Theme).

If WASH contains STREAM/RIVER,
Then capture both.

Sand areas that do not meet capture conditions for WASH and which are associated with STREAM/RIVER may be considered for capture as just the feature BARREN LAND. (Nonvegetative Surface Cover theme)

If WASH is < 0.025 " along the shortest axis,
Then capture as STREAM/RIVER with Hydrographic Category = Intermittent, if capture conditions for STREAM/RIVER are met.

→ See Appendix 2A for location of arid regions. ←

Graphic

If a wash is represented as a single brown line, or as a sand area that is too small to meet capture conditions,
Then capture STREAM/RIVER with Hydrographic Category = Intermittent if capture conditions for STREAM/RIVER are met.

Revision - General

Revision - Standard

Revision - Limited

Do not add new features. Modify existing features only if there are obvious changes in the stream.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

NAM

Symbol#: WASH_A001
 Dimension: 2

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	N/A	Name: Color: Blue Style: SLI CAPS or C/lc Size: 10-12 Spacing: 0-3

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Carrisito Spring, AZ-NM
Casa Grande East, AZ (All blue drainage, some may be WASHES)
Ceadro Spring, AZ
Chandler Heights, AZ (All blue drainage, some may be WASHES)
Cherry Spring Peak, AZ (Brown ephemeral drains and broad sand areas)
Devore, CA
Jarvis Peak, UT-AZ (Heavy drainage pattern in area of high relief)
Mountain Springs, NV (2-D sand area interlaced with 1-D channels)
Murphys Well, NV (Brown ephemeral drains and broad sand areas)
Piru, CA (Broad 2-D WASH)
Sisquoc, CA (Sisquoc River)
Vail, AZ

WATER INTAKE/OUTFLOW - A structure through which water enters or exits a conduit.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Water Intake/Outflow Type	Function or purpose
Intake	For controlling the level of a waterbody or for intaking water for hydroelectric power, irrigation or water supply
Outflow	For releasing water from a structure

DELINEATION

The limit of WATER INTAKE/OUTFLOW is the extent of the structure.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		< 0.04"	
1-dimensional			
2-dimensional		≥ 0.04"	

Special Conditions:

DATA EXTRACTION

Capture Conditions

If WATER INTAKE/OUTFLOW is an intake structure and is exposed at surface,
Or
If WATER INTAKE/OUTFLOW is an outflow structure and is ≥ 0.04 " along the shortest axis,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

Structures that provide access to a WATER INTAKE/OUTFLOW will be captured as BRIDGE, unless there is supporting evidence that they are PIER/BREAKWATER/JETTY.



If an intake structure is a tower,
Then capture as TOWER (Built-up theme) with Tower Type = Water Intake.



Graphic

Revision - General

Revision - Standard

Revision - Limited



Do not revise. Retain existing features.



DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: WATER_INTAKE_OUTFLOW_P001
 Dimension: 0

◦ Intake

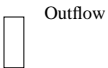
<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Water Intake/Outflow Type	Intake	<u>Circle</u> Color: Black Lineweight: 0.003" Diameter: 0.04" <u>Dot</u> Color: Black Diameter: 0.006" Positioning: dot is centered in circle <u>Symbol Orientation</u> Origin: center of symbol	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0

Symbol#: WATER_INTAKE_OUTFLOW_A001
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Water Intake/Outflow Type	Intake	<u>Area Perimeter</u> Color: Black Lineweight: 0.004"	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0

Symbol#: WATER_INTAKE_OUTFLOW_A002
 Dimension: 2



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Water Intake/Outflow Type	Outflow	<u>Area Perimeter</u> Color: Black Lineweight: 0.004"	Label: Color: Black Style: UL C/lc Size: 7 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Barber, AR (0-D)
Garrison Dam North, ND (BRIDGE and 2-D intake)
Lake Cachuma, CA (0-D intake and BRIDGE and TUNNEL and aqueduct)
Little Grape Creek, TX (0-D)
San Luis Dam, CA (2-D intake and BRIDGE; 0-D intake)
Wheeler Dam, AL (Lock discharge - 2-D outflow)

WATERCOURSE - A named path through a drainage network.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99

DELINEATION

The limit of WATERCOURSE is the set of one or more, usually continuous, components of the named path. The name applies to the entire set, and not to any individual piece of the set. (In fact, an individual piece may have its own name, different from the name of the compound feature.)

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
Is Composed Of		AREA OF COMPLEX CHANNELS CANAL/DITCH ESTUARY LAKE/POND STREAM/RIVER

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

WATERCOURSE is represented as a compound feature object.

DATA EXTRACTION

Capture Conditions

If WATERCOURSE identifies a named path through a network,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

Compound features are more than just a convenient way to group things. Compound features are used to describe a higher-level concept. WATERCOURSE is compounded from one or more appropriate AREA OF COMPLEX CHANNELS, STREAM/RIVER or CANAL/DITCH (or occasionally ESTUARY or LAKE/POND) basic feature objects. The set of appropriate feature objects is the grouping that identifies a named path within the network of stream or canal segments. Creating a WATERCOURSE involves uniting and separating individual streams or canals to create a unique occurrence. Therefore, the Big River is a different WATERCOURSE from the East Channel, even though they are composed of some (or all) of the same instances of STREAM/RIVER.

WATERCOURSE (as with other compound feature objects) does not need to be contiguous. There can be gaps as when a named stream goes underground and then reappears, or when a river is interrupted by a swamp or large dam. There can also be separate parallel components, such as for the various channels of a river that contains islands.

On some occasions, WATERCOURSE will be compounded from just one AREA OF COMPLEX CHANNELS, STREAM/RIVER, or CANAL/DITCH. This will occur when there are no confluences or attribute changes along the AREA OF COMPLEX CHANNELS, STREAM/RIVER, or CANAL/DITCH within the domain. This allows the attribute Name to be consistently carried just on the feature WATERCOURSE, not on the features AREA OF COMPLEX CHANNELS, STREAM/RIVER, or CANAL/DITCH.

Graphic

Revision - General

Revision - Standard

Revision - Limited

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

NAM

Symbol#: WATERCOURSE_C001
 Dimension: N/A

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric)	N/A	Name: Color: Blue Style: SLI C/lc Size: 8-10 Spacing: 0-10

NOTE: composed of 1-D STREAM/RIVER

NAM

Symbol#: WATERCOURSE_C002
 Dimension: N/A

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric)	N/A	Name: Color: Blue Style: SLI CAPS Size: 9-12 Spacing: 0-10

NOTE: composed of 2-D STREAM/RIVER

Symbol#: WATERCOURSE_C003
 Dimension: N/A

NAM

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric)	N/A	Name: Color: Blue Style: UI CAPS Size: 5-7 Spacing: 0

NOTE: composed of CANAL/DITCH

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

WATERFALL - A vertical or near vertical descent of water over a step or ledge in the bed of a river.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks

DELINEATION

The limit of WATERFALL is the extent of the vertical or nearly vertical descent, and the SHORELINES.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional			
1-dimensional			
2-dimensional			

Special Conditions:

If WATERFALL is on a 1-dimensional STREAM/RIVER,
 Then WATERFALL is represented as a 0-dimensional basic feature object.

If WATERFALL is on a 2-dimensional STREAM/RIVER,
Then WATERFALL is represented as a 1-dimensional basic feature object.

DATA EXTRACTION

Capture Conditions

If WATERFALL is named,
Or
If WATERFALL is on a perennial STREAM/RIVER and has a vertical drop ≥ 10 ft, and extends from SHORELINE to SHORELINE,
Then capture.

Attribute Information

Source Interpretation Guidelines

All

If WATERFALL is within an area of closely spaced waterfalls,
Then first capture upstream WATERFALL, then capture as many others as can be shown in correct position. The symbols must not overlap.

If WATERFALL is captured,
Then also capture JUNCTION.

Graphic

Capture all.

Names that contain the word "Falls" may indicate the feature RAPIDS. Careful identification of the symbol will be required to accurately determine whether the feature should be captured as WATERFALL or RAPIDS.

If WATERFALL is on a single-line STREAM/RIVER,
Then capture at intersection of tick and STREAM/RIVER.

If WATERFALL is shown by a tick on a double-line STREAM/RIVER,
Then capture by connecting the intersection of tick and SHORELINES.

If WATERFALL is shown by hachures on a double-line STREAM/RIVER,

Then capture by connecting the upstream limit of the hachures and SHORELINES.

An elevation at the top and/or bottom of WATERFALL is captured as SPOT ELEVATION.

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: WATERFALL_P001
 Dimension: 0

NAM

Falls

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Ticks</u> Color: Blue Lineweight: 0.008" Length: 0.05" <u>Symbol Orientation</u> Orientation: perpendicular to STREAM/RIVER Origin: center of symbol	Label and Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0

Symbol#: WATERFALL_L001
 Dimension: 1

NAM

Falls



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Ticks</u> Color: Blue Lineweight: 0.004" Length: 0.033" Spacing: 0.017" <u>Symbol Orientation</u> Orientation: perpendicular to and downstream from WATERFALL	Label and Name: Color: Blue Style: SLI C/lc Size: 8 Spacing: 0

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Cumberland Falls, KY
 Lowell, MA-NH
 Tubb Canyon, CA

WELL - A pit or hole dug or bored into the earth for the extraction of oil, water, other fluids, or gases.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Product	Principal commodity involved
Heat	
Water	
Flow Status	State or condition
Flowing	Water flows to the surface naturally
Unspecified	The value is not known and is not required
Water Characteristics	Distinctive properties of the water
Alkaline	Water shows evidence of alkali salts
Hot	Water temperature is higher than that of the human body (98.6 degrees F)
Sulphur	
Unspecified	The value is not known and is not required

DELINEATION

The limit of WELL is the extent of the hole in the ground.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions

DATA EXTRACTION

Capture Conditions

- If WELL is a water well and is landmark,
- Or
- If WELL is a water well, and is in an arid area, and is $\geq 0.25''$ from a building,
- Or
- If WELL is a water well, and is in an arid agricultural area, and is used for irrigation,
- Or
- If WELL is a heat well,
- Then capture.

Attribute Information

- If Flow Status = Flowing,
- Then Water Characteristics = Unspecified.

Source Interpretation Guidelines

All

- If WELL is within an area of closely spaced wells,
- Then first capture named WELLS, then those that are on the perimeter of the area, then those that are most prominent, then finally capture a representative pattern of WELLS internal to the area. Capture as many as can be shown in correct position. The symbols must not overlap.



If WELL is associated with WINDMILL (Built-up theme),
Then do not capture WELL. See WINDMILL (Built-up theme).



Irrigation wells are often enclosed in a structure and are usually found in wide areas along or at the end of field roads. They may be evidenced by a wide wet collection area leading into a linear channel.

If WELL produces a product other than water or heat,
Then collect in the theme Built-up.

Do not capture dry wells.

Graphic

If WELL is identified as "geothermal" or "steam" on the graphic,
Then Production Status = Producing and Product = Heat.

If WELL is identified as "artesian" on the graphic,
Then Product = Water and Flow Status = Flowing.

If a water WELL is identified as "salt" on the graphic,
Then Water Characteristics = Alkaline.

If characteristics of a water WELL are not otherwise identified on the graphic,
Then Water Characteristics = Unspecified.



On maps of Hawaii, blue or black adit or mine tunnel symbols labeled "Well" or "Water Tunnel" are captured as WELL.



Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: WELL_P001
 Dimension: 0



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	Circle Color: Black Lineweight: 0.003" Diameter: 0.04"	Label and Name: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Production Status	Non-producing		
Product	Unspecified	<u>Symbol Orientation</u> Origin: center of symbol	

NOTE: This symbol applies only to the theme Built-up.



Symbol#: WELL_P002
 Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Circle</u> Color: Black Lineweight: 0.003" Diameter: 0.04"	Label and Name: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Production Status	Producing		
Product	Unspecified	<u>Symbol Orientation</u> Origin: center of symbol	

NOTE: This symbol applies only to the theme Built-up.



Symbol#: WELL_P003
 Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Circle</u> Color: Blue Lineweight: 0.004" Diameter: 0.04"	Label and Name: Color: Blue Style: UL C/lc Size: 7 Spacing: 0
Production Status	Producing		
Product	Heat	<u>Symbol Orientation</u> Origin: center of symbol	

NOTE: This symbol applies only to the theme Hydrography.

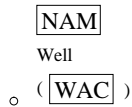
Symbol#: WELL_P004
 Dimension: 0



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Flow Status	Flowing	<u>Circle</u>	Label and Name:
Name	(Alphanumeric) or Unspecified	Color: Blue Lineweight: 0.004" Diameter: 0.04"	Color: Blue Style: UL C/lc Size: 7 Spacing: 0
Production Status	Producing	<u>Symbol Orientation</u>	
Product	Water	Origin: center of symbol	

NOTE: This symbol applies only to the theme Hydrography.

Symbol#: WELL_P005
 Dimension: 0



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Flow Status	Unspecified	<u>Circle</u>	Label, Name, and Water Characteristics:
Name	(Alphanumeric) or Unspecified	Color: Blue Lineweight: 0.004" Diameter: 0.04"	Color: Blue Style: UL C/lc Size: 7 Spacing: 0
Production Status	Producing	<u>Symbol Orientation</u>	
Product	Water	Origin: center of symbol	
Water Characteristics	Alkaline, Hot, Sulphur, or Unspecified		

NOTE: This symbol applies only to the theme Hydrography.

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If WELL symbol_coalesces WELL,

Then suppress_symbol.

If WELL coincides a horizontal control station,
Then suppress_symbol (retain label if appropriate).

If WELL symbol_coalesces a horizontal control station,
Then symbol_displace.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Placement

TBD

EXAMPLES

Niland, CA
Oil City, PA
Peak Mountain, CA
Pikes Stockade, CO
The Geysers, CA

WRECK - The hulk or the ruins of a disabled vessel which is attached to or foul of the bottom or cast up on the shore.

ATTRIBUTE/ATTRIBUTE VALUE LIST

Name	Proper name, specific term, or expression
(Alphanumeric)	Length Value: 99
Unspecified	The value is not known and is not required
Photorevision Category	Whether or not a feature was added or modified as part of a photorevision assignment
Not Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that included field checks, if required
Photorevised	Feature was compiled from aerial photographs and other sources as part of a revision assignment that did not include field checks
Relationship to Surface	Vertical location relative to the surface
Abovewater	Exposed at mean lower low water
Abovewater Portion	Portion exposed at mean lower low water
Hull and/or Superstructure	
Mast and/or Funnel	
Underwater	Always submerged

DELINEATION

The limit of WRECK is the extent of the hull or other remaining portion of the disabled vessel.

REPRESENTATION RULES

Feature Object Representation, Composition, and Relationship Table

RELATIONSHIPS	INSTANCES (CARDINALITY)	WITH OBJECT
---------------	----------------------------	-------------

Representation Conditions

KIND OF FEATURE OBJECT	AREA	SHORTEST	LONGEST
0-dimensional		> 0	
1-dimensional			
2-dimensional			

Special Conditions:

DATA EXTRACTION

Capture Conditions

If WRECK is exposed at mean lower low water and is on an existing NOS chart,
 Or
 For topographic/bathymetric editions only, if WRECK is on the final compilation provided to USGS by NOS,
 Then capture.

Attribute Information

Source Interpretation Guidelines

All

If WRECK meets capture conditions and Relationship To Surface = Abovewater with Abovewater Portion = Mast and/or Funnel,
 Then capture both WRECK and HAZARD ZONE.

Do not capture bits and pieces of a wreck or scattered wreckage as WRECK. See HAZARD ZONE.

Graphic

Any dotted outline labeled "Exposed Wreckage" or "Wreckage" will not be collected as WRECK. See HAZARD ZONE.

Revision - General

Revision - Standard

Revision - Limited

Do not revise. Retain existing features.

DATA EXTRACTION OR PRODUCT GENERATION at 1:24,000 scale

Inclusion Conditions

All required

Generalization

PRODUCT GENERATION at 1:24,000 scale

Symbolization

Symbol#: WRECK_P001
 Dimension: 0




<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Abovewater Portion	Mast and/or Funnel	<u>Symbol Orientation</u> Orientation: longest axis is placed parallel to south projection line Origin: intersection of longest lines	Label and Name: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Name	(Alphanumeric) or Unspecified		
Relationship to Surface	Abovewater	<u>Lines</u> Color: Black Lineweight: 0.003" Tick Spacing: 0.17" Positioning: longest cross tick bisects center of longest axis at 90-degrees. Short cross ticks intersect longest axis at 90-degrees Length Of Longest Axis: 0.08" Length Of Longest Cross Tick: 0.05" Length Of Short Cross Ticks: 0.033"	

Symbol#: WRECK_P002
 Dimension: 0



<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Abovewater Portion	Hull and/or Superstructure	Circle Color: Black Lineweight: 0.003" Diameter: 0.025" Positioning: center of baseline	Name: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Name	(Alphanumeric) or Unspecified		
Relationship to Surface	Abovewater	<u>Symbol Orientation</u> Orientation: baseline is placed parallel to south projection line Origin: center of circle <u>Right Triangle</u> Color: Black Positioning: base of triangle is centered along baseline, with perpendicular side to the right Base: 0.1" Perpendicular Side: 0.037" Fill: 100% Black (circle remains clear in overlap area) <u>Upright</u> Color: Black Lineweight: 0.003" Length: 0.05" Positioning: base of mast is centered along hypotenuse of triangle at 90 degrees, pointing away from triangle <u>Baseline</u> Color: Black Lineweight: 0.003" Length: 0.12"	

Postscript image not in the database. 

Symbol#: WRECK_P003
 Dimension: 0

<u>Attribute</u>	<u>Value</u>	<u>Symbol Specs</u>	<u>Type Specs</u>
Name	(Alphanumeric) or Unspecified	<u>Symbol Orientation</u> Orientation: longest axis is placed parallel to south projection line Origin: intersection of longest lines	Name: Color: Black Style: UL C/lc Size: 7 Spacing: 0
Relationship to Surface	Underwater	<u>Lines</u> Color: Black Lineweight: 0.003" Tick Spacing: 0.17" Positioning: longest cross tick bisects center of longest axis at 90°. Short cross ticks intersect longest axis at 90°. Length Of Longest Axis: 0.08" Length Of Longest Cross Tick: 0.05" Length Of Short Cross Ticks: 0.033"	

NOTE: This symbol applies only to Topographic-Bathymetric editions.

Conflict Detection and Resolution

Conflict detection and resolution rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

If WRECK, with Relationship to Surface = Abovewater, Abovewater Portion = Mast and/or Funnel symbol_coalesces HAZARD ZONE, Then orient_symbol to fit within HAZARD ZONE symbol.

Names and Labels

Selection and placement rules are being developed. Additions and modifications to the rule set will continue until all features are completed.

Selection

TBD

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography

WRECK

Placement

TBD

EXAMPLES

Galveston, TX (Sunken WRECK with masts exposed)

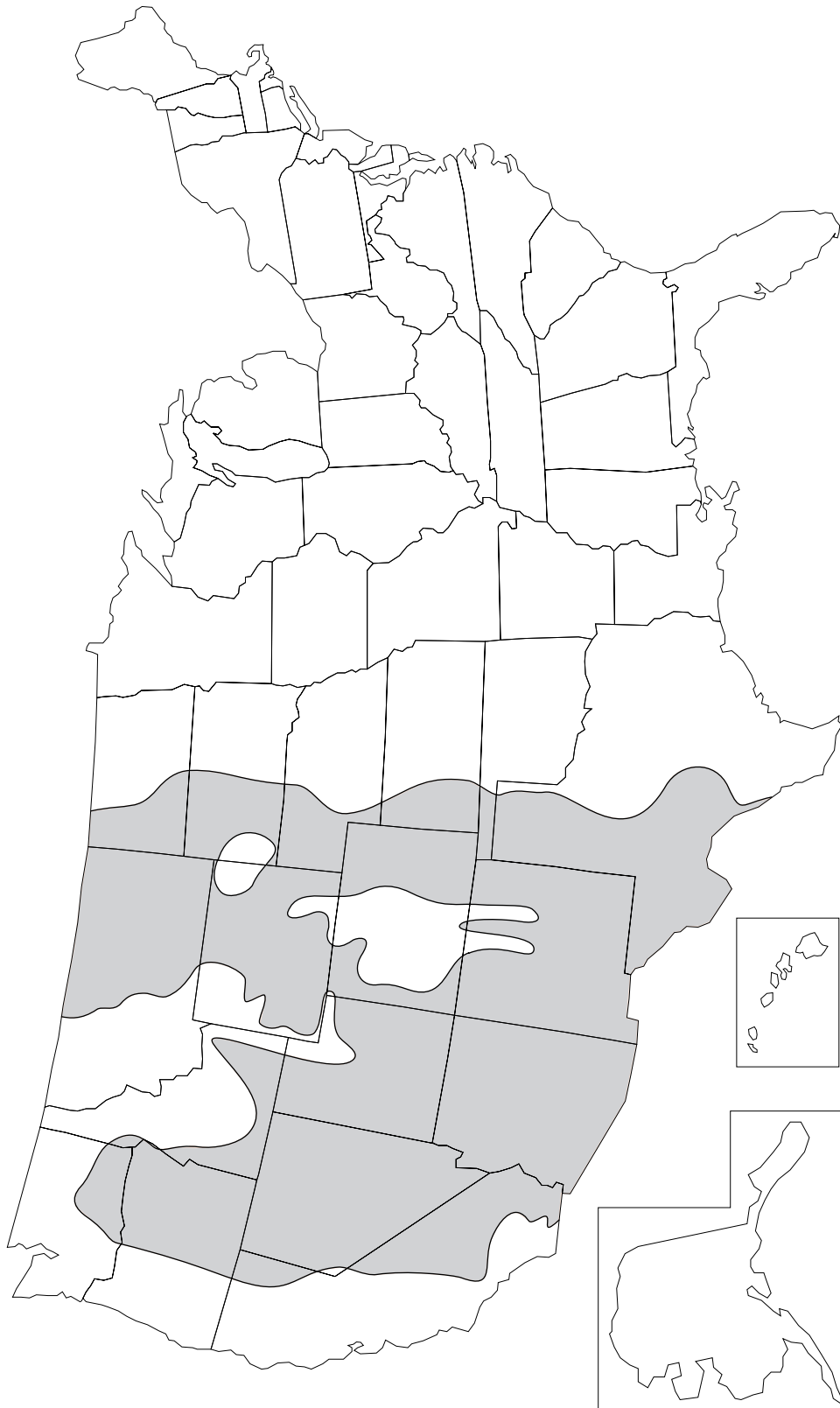
The Jetties, TX (Sunken WRECK with masts exposed, exposed WRECK)

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography
Appendix 2A: Map of Arid Regions

APPENDIX 2A

Map of Arid Regions

Standards for 1:24,000-Scale Digital Line Graphs and Quadrangle Maps
Part 2: Hydrography
Appendix 2A: Map of Arid Regions



Location of arid regions.