APPENDIX B. 1983 MIDDLE SUSITNA RIVER SEGMENT GEOMORPHIC FEATURES

Susitna-Watana Hydroelectric Project
(FERC No. 14241)

Geomorphology Study (6.5)

Mapping of Geomorphic Features and Turnover within the Middle and Lower Susitna River Segments from 1950s, 1980s, and Current Aerials

Technical Memorandum

Prepared for

Alaska Energy Authority

SUSITNA-WATANA HYDRO
Clean, reliable energy for the next 100 years.

Prepared by

Tetra Tech Inc.

September 2014

150°W
149°30'W
149°W
148°30'W
62°50'N
62°40'N
62°30'N
62°20'N

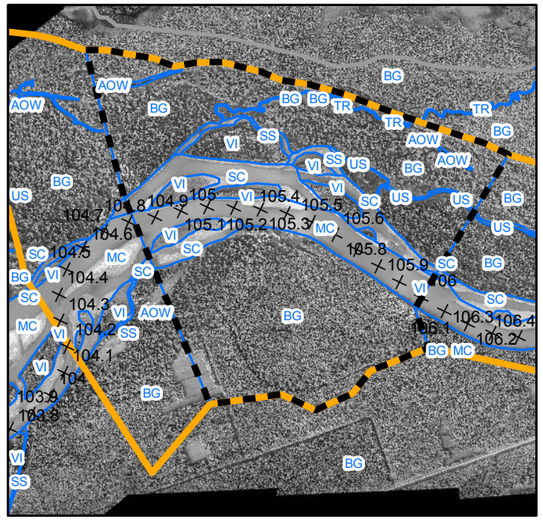
Indian River
Portage Creek
Devil Creek
Tsusena Creek
Susitna River
Chulitna River
Talkeetna River

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Legend For Individual Mapbook Pages

- Project River Mile
- Geomorphic Reach Breaks
- Focus Area Extents
- Geomorphic Assessment Area Extents
- Analysis Extent Boundary
- 1980s Geomorphic Features

Example Mapbook Page Data



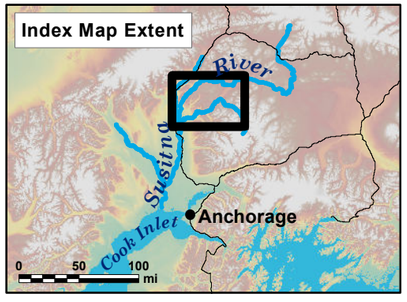
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MIDDLE SUSITNA RIVER SEGMENT 1983 GEOMORPHIC FEATURES

Legend

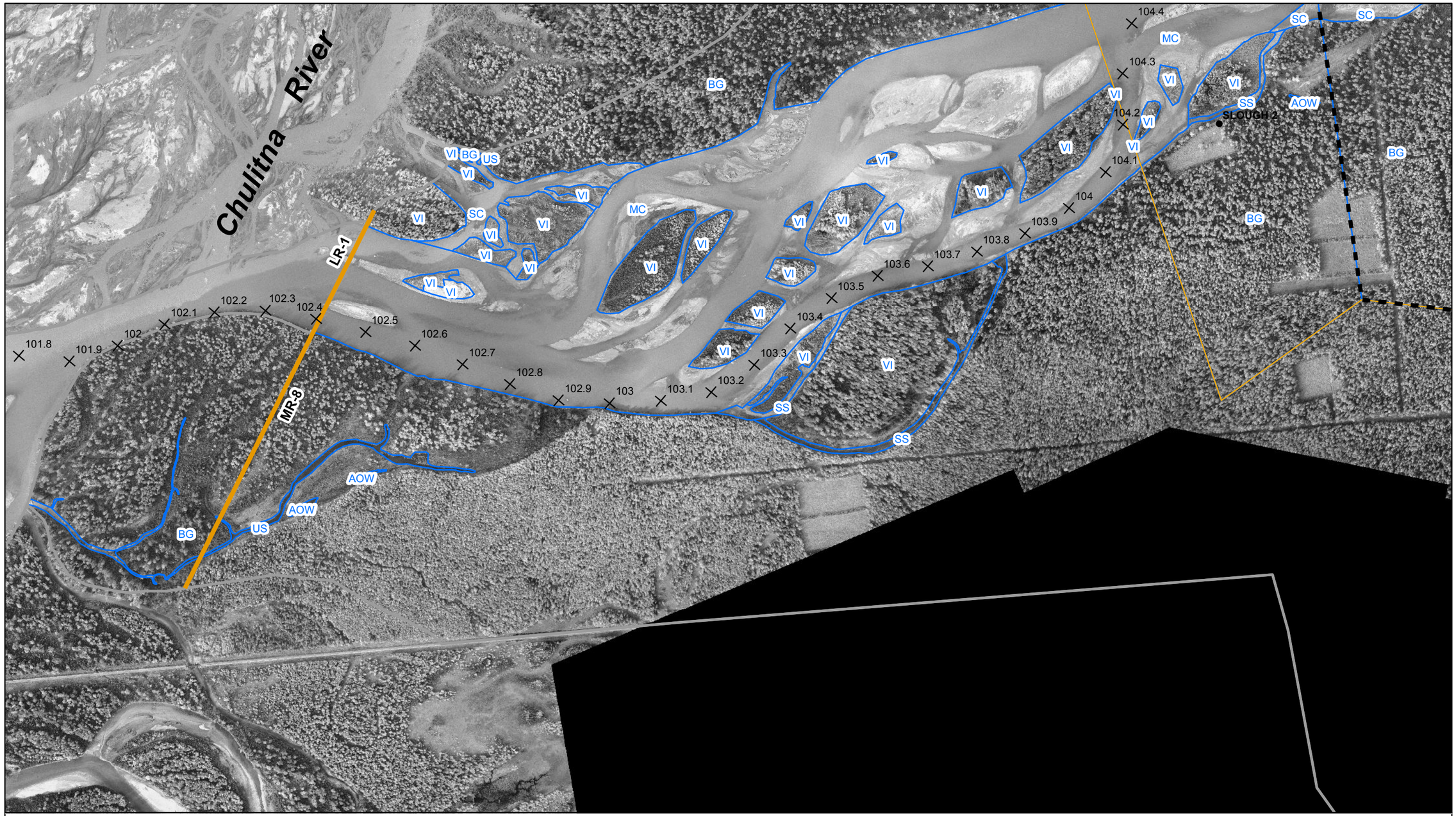
- Proposed Watana Dam Site
- Sheet Extents
- Roads
- Railroads
- Rivers and Streams
- Waterbodies

Data Sources: See Map References



0 5 10 mi

Projection: NAD83 State Plane Alaska 4 FIPS 5004 (ft)
Date Created: 8/21/2014
Map Author: Tetra Tech
File: GeomFeat_1980s_MR_20140423_Cover.mxd



0 1,000 2,000 Feet

See index page for legend and additional data information.

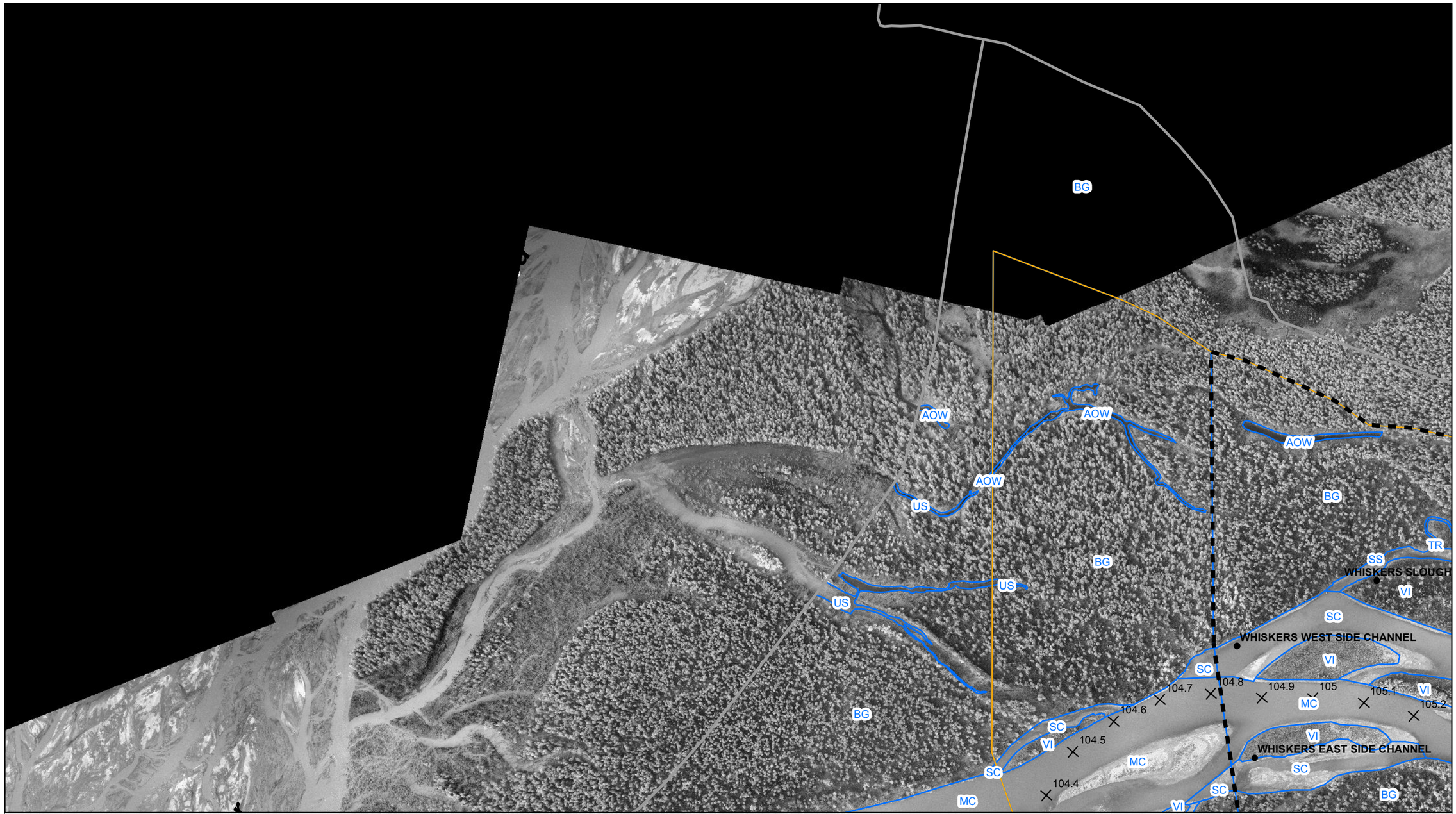
1 inch = 1,000 feet

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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
				07/20/1980,	31,600 cfs

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See index page for legend and additional data information.

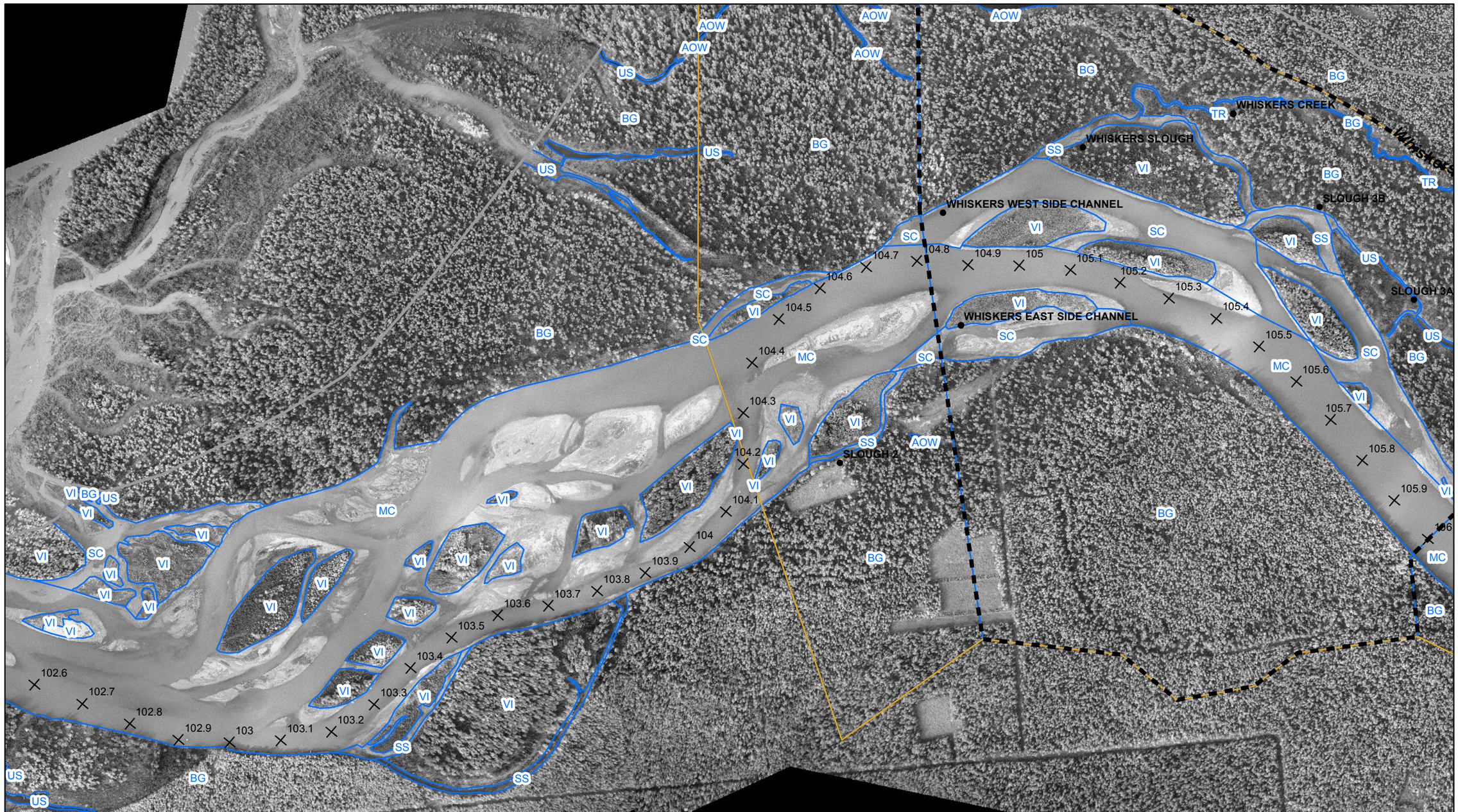
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Sheet 2 of 34

MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
				07/20/1980,	31,600 cfs

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See index page for legend and additional data information.

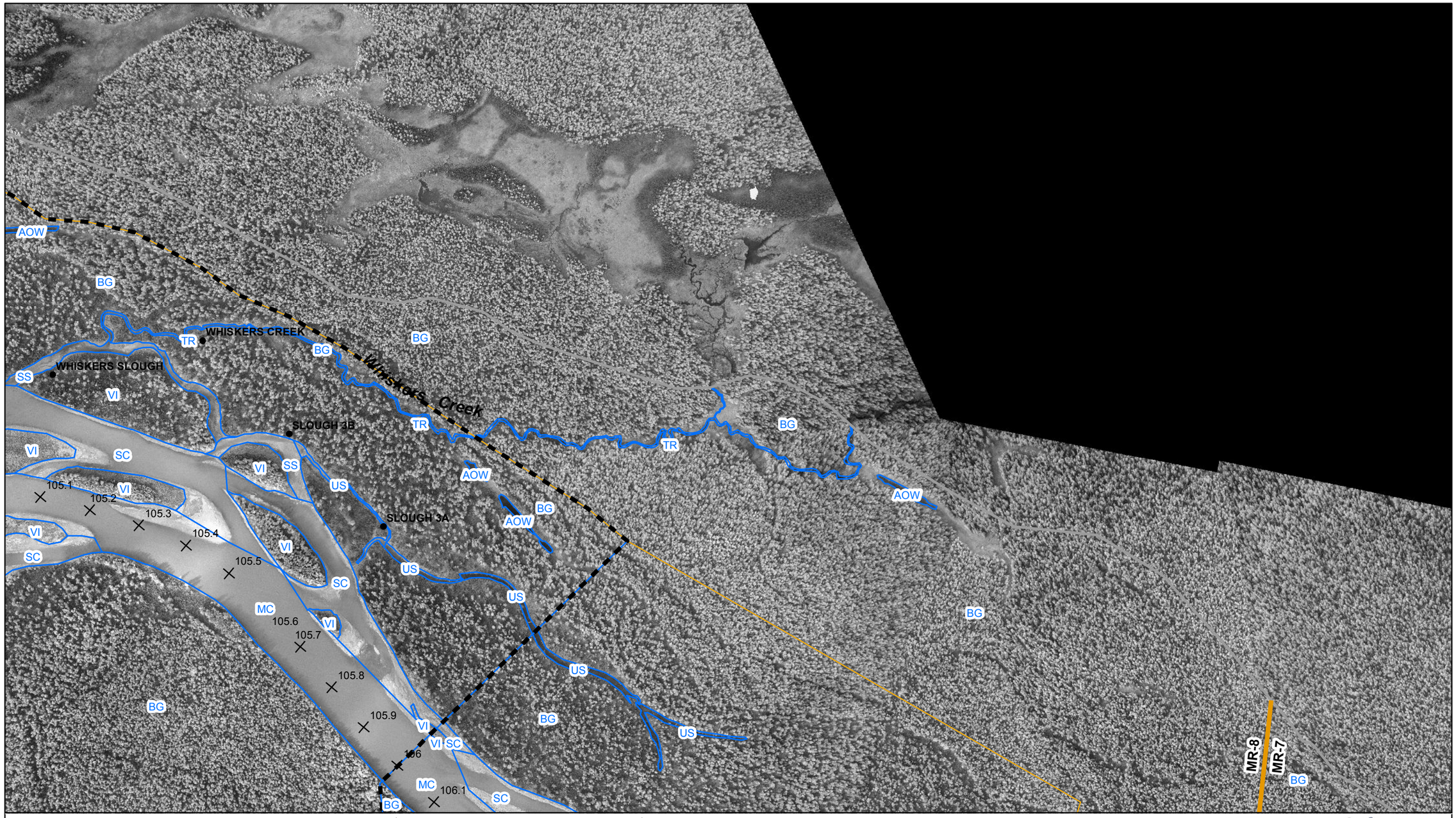
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Sheet 3 of 34

MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
				07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



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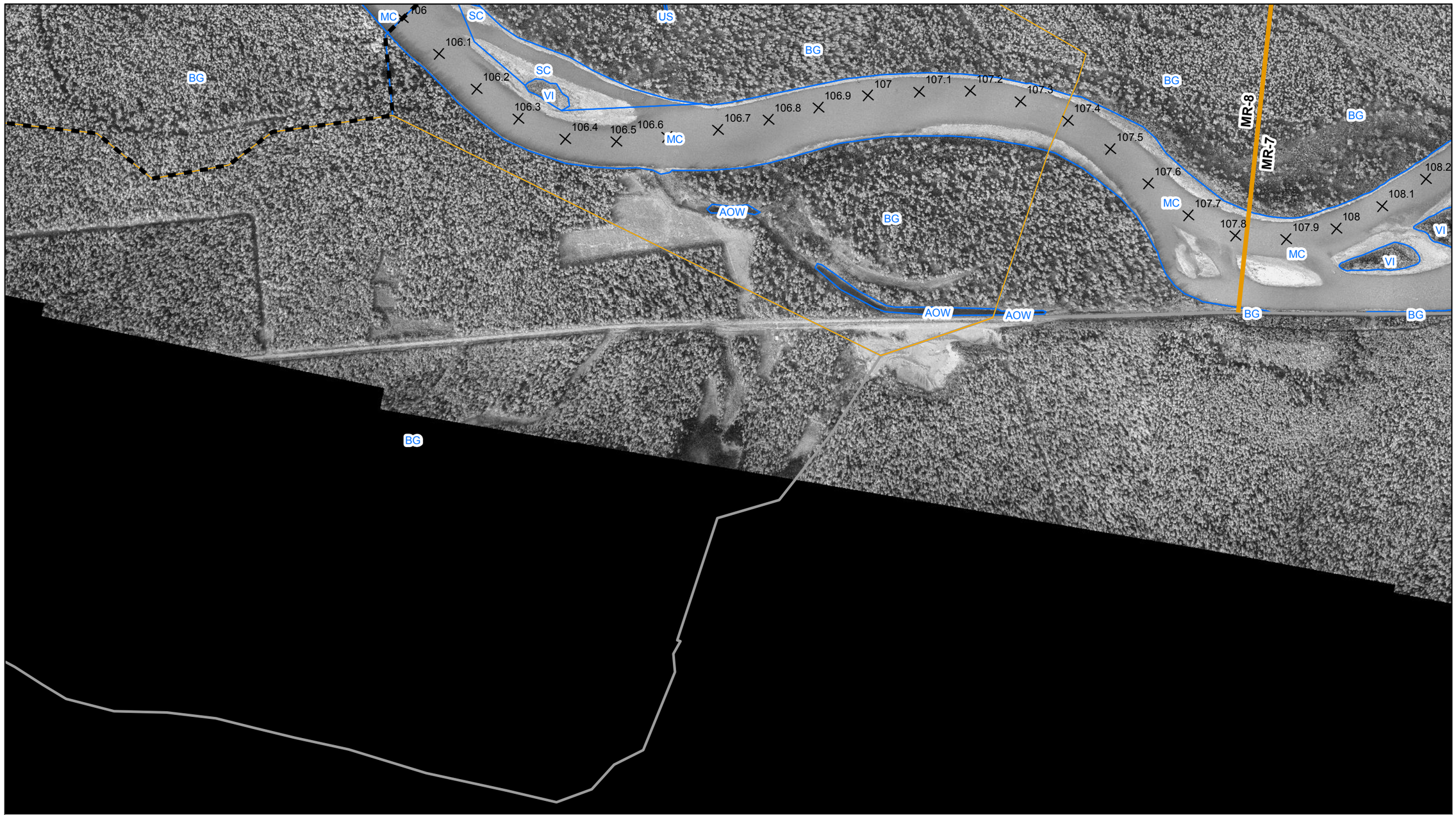
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MIDDLE SUSITNA RIVER SEGMENT 1983 GEOMORPHIC FEATURES

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				07/20/1980,	31,600 cfs

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See index page for legend and additional data information.

1 inch = 1,000 feet

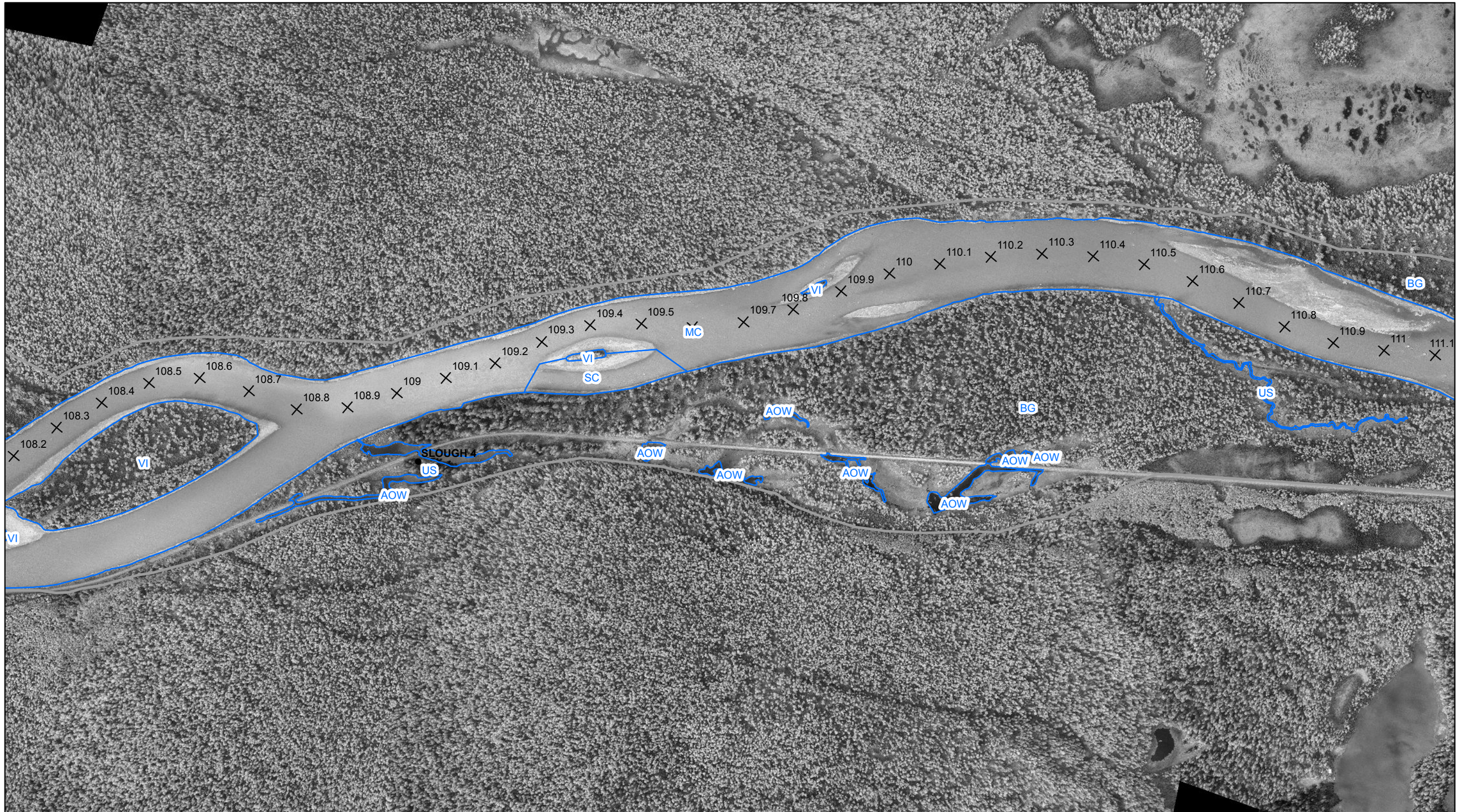
Sheet 5 of 34

MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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PRM 102.0 - 154.0	09/11/1983,	12,500 cfs

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 154.0 - 187.1	07/19/1980-	35,800 cfs
	07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



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1 inch = 1,000 feet

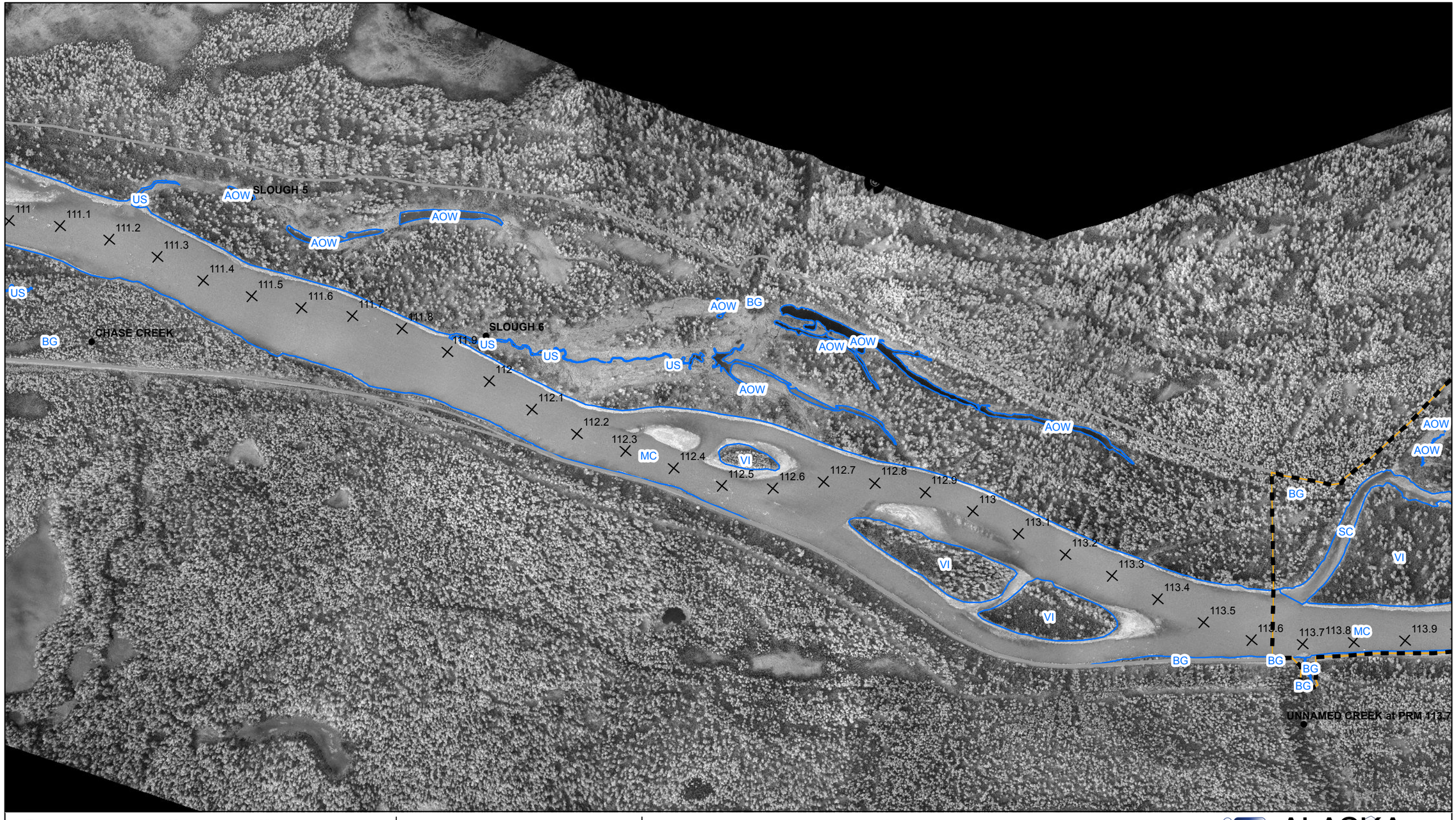
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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date, Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980- 35,800 cfs 07/20/1980, 31,600 cfs

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

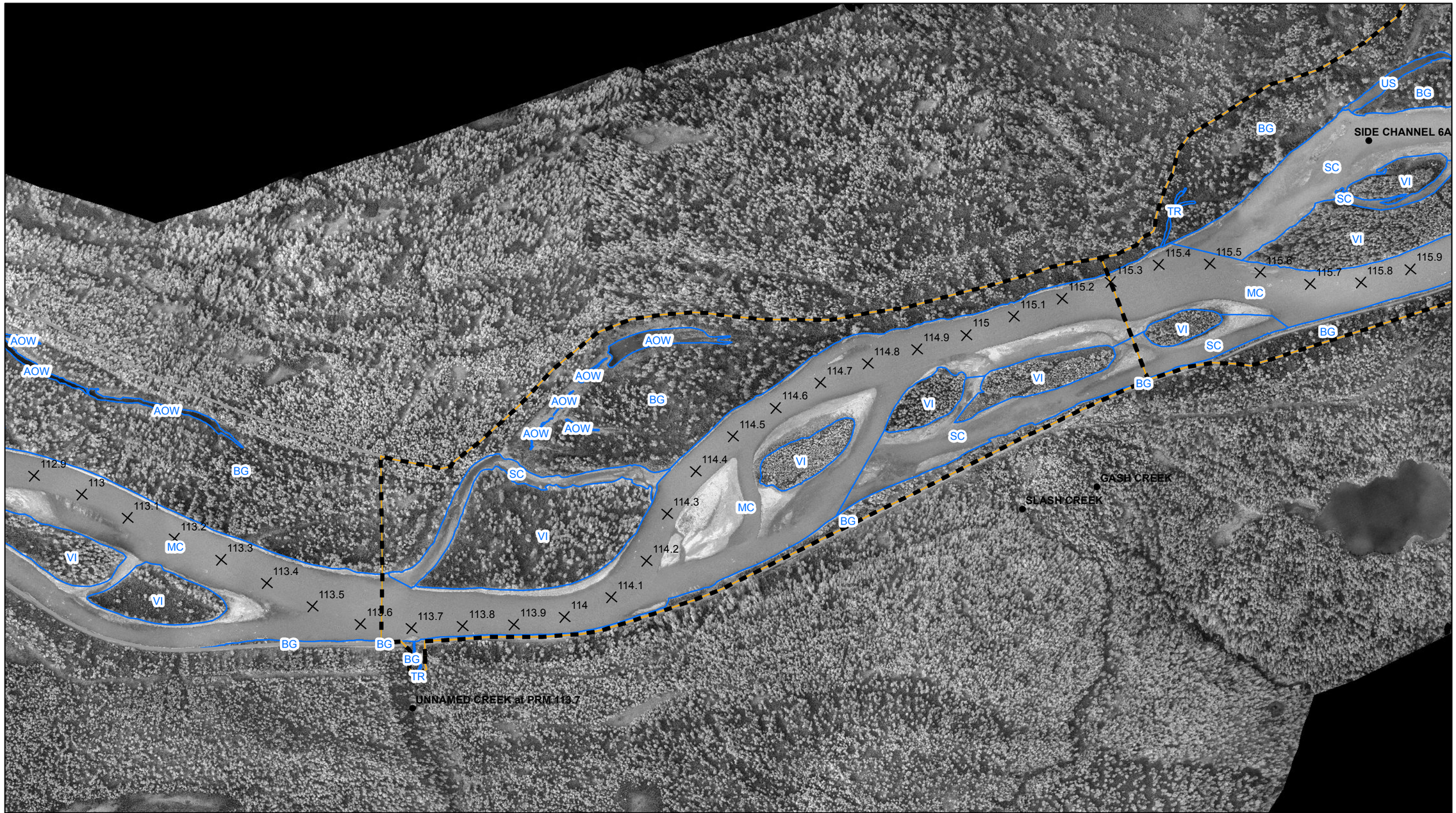
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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
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See index page for legend and additional data information.

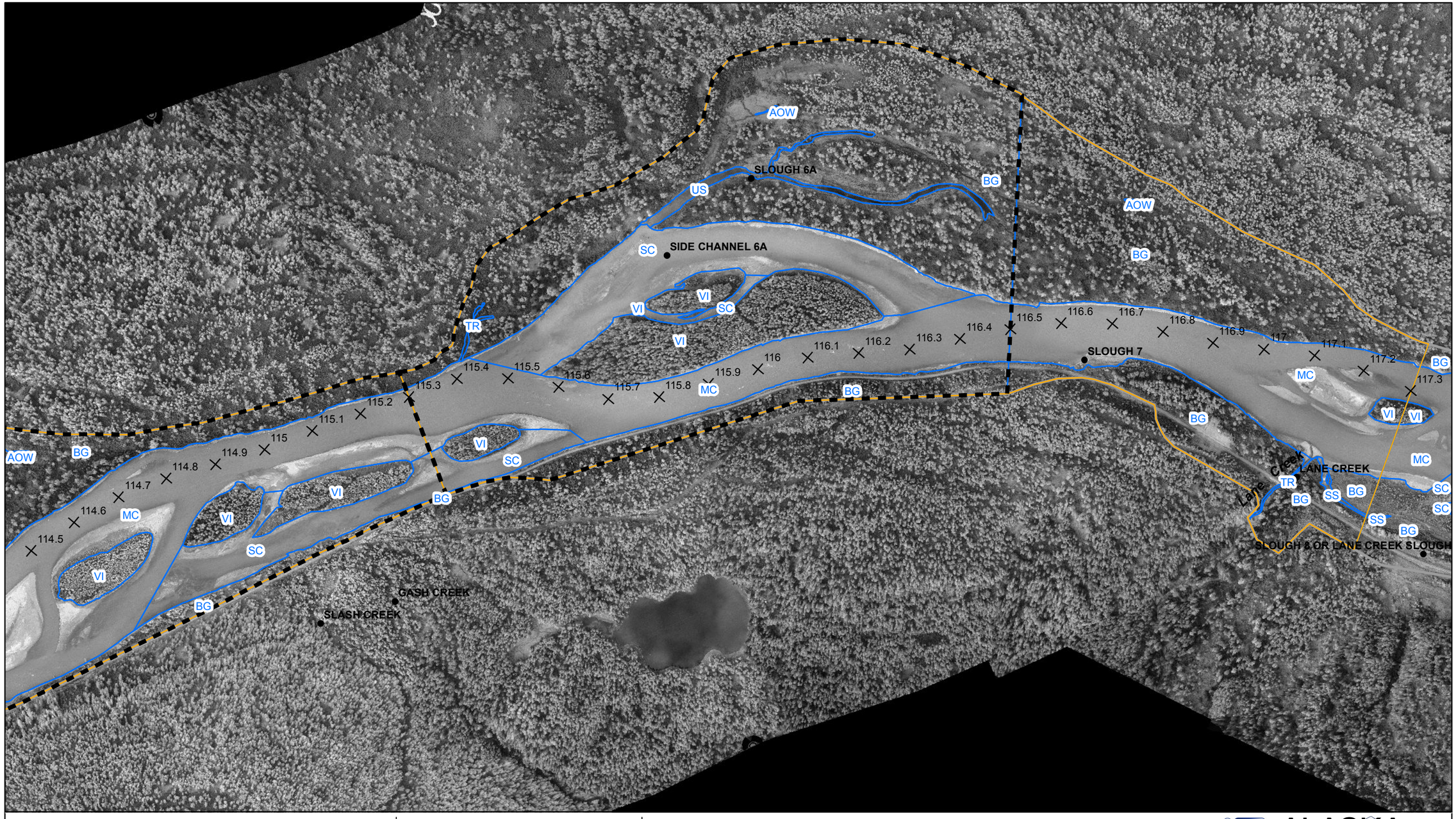
1 inch = 1,000 feet

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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
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ALASKA ENERGY AUTHORITY



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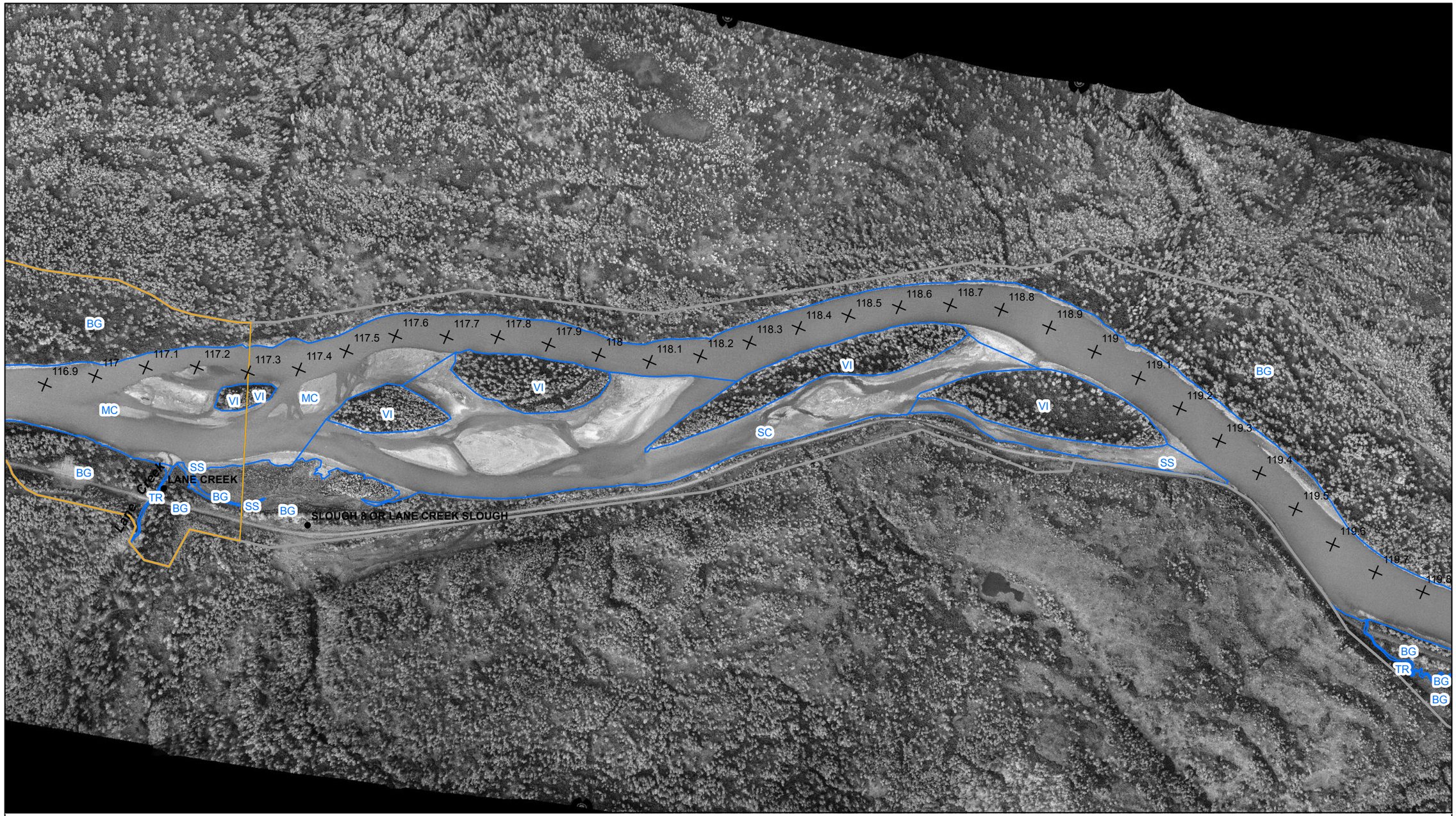
1 inch = 1,000 feet

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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date, Discharge (Gold Creek)	
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
				07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



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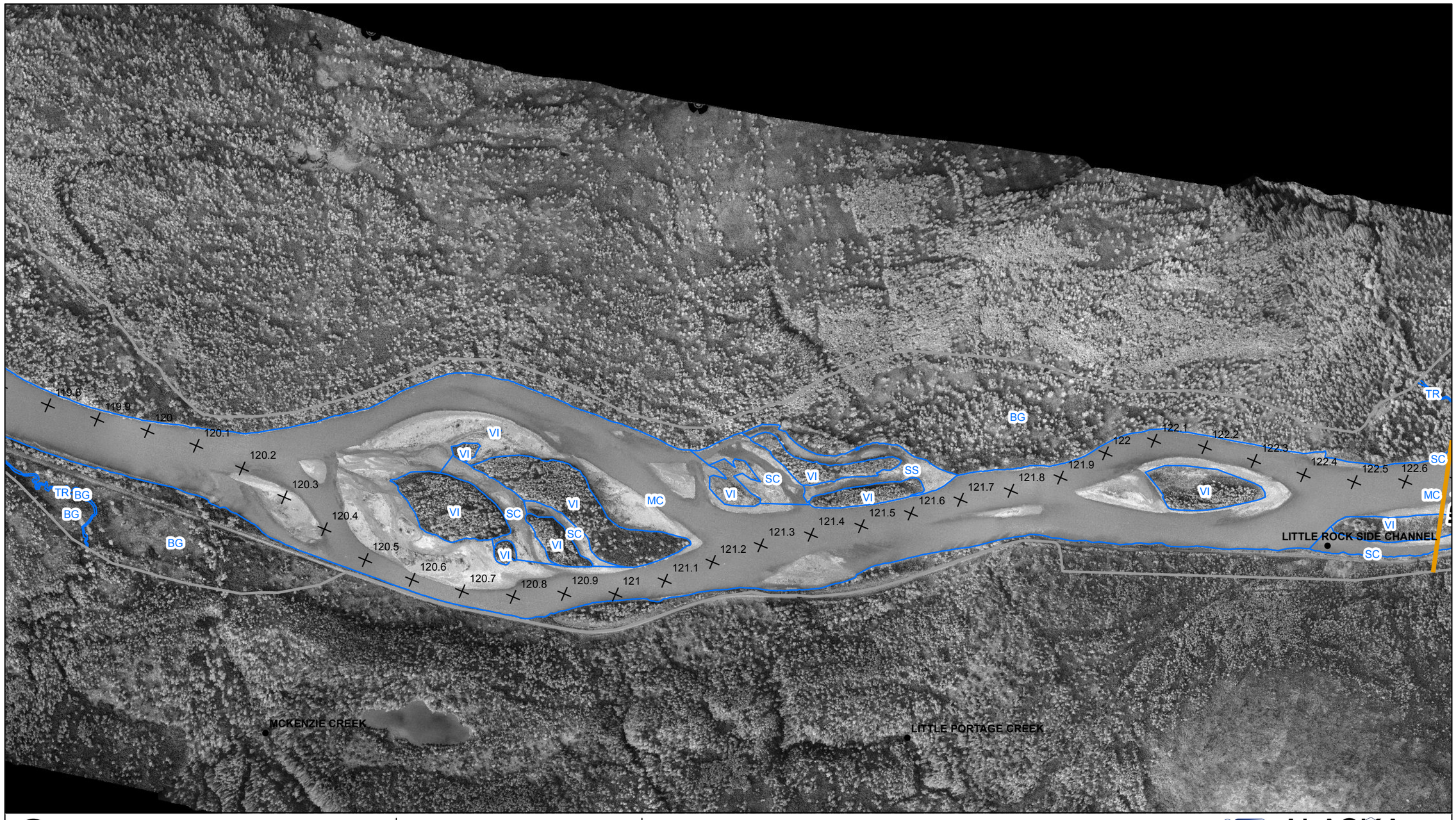
1 inch = 1,000 feet

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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date, Discharge (Gold Creek)	
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
				07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



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See index page for legend and additional data information.

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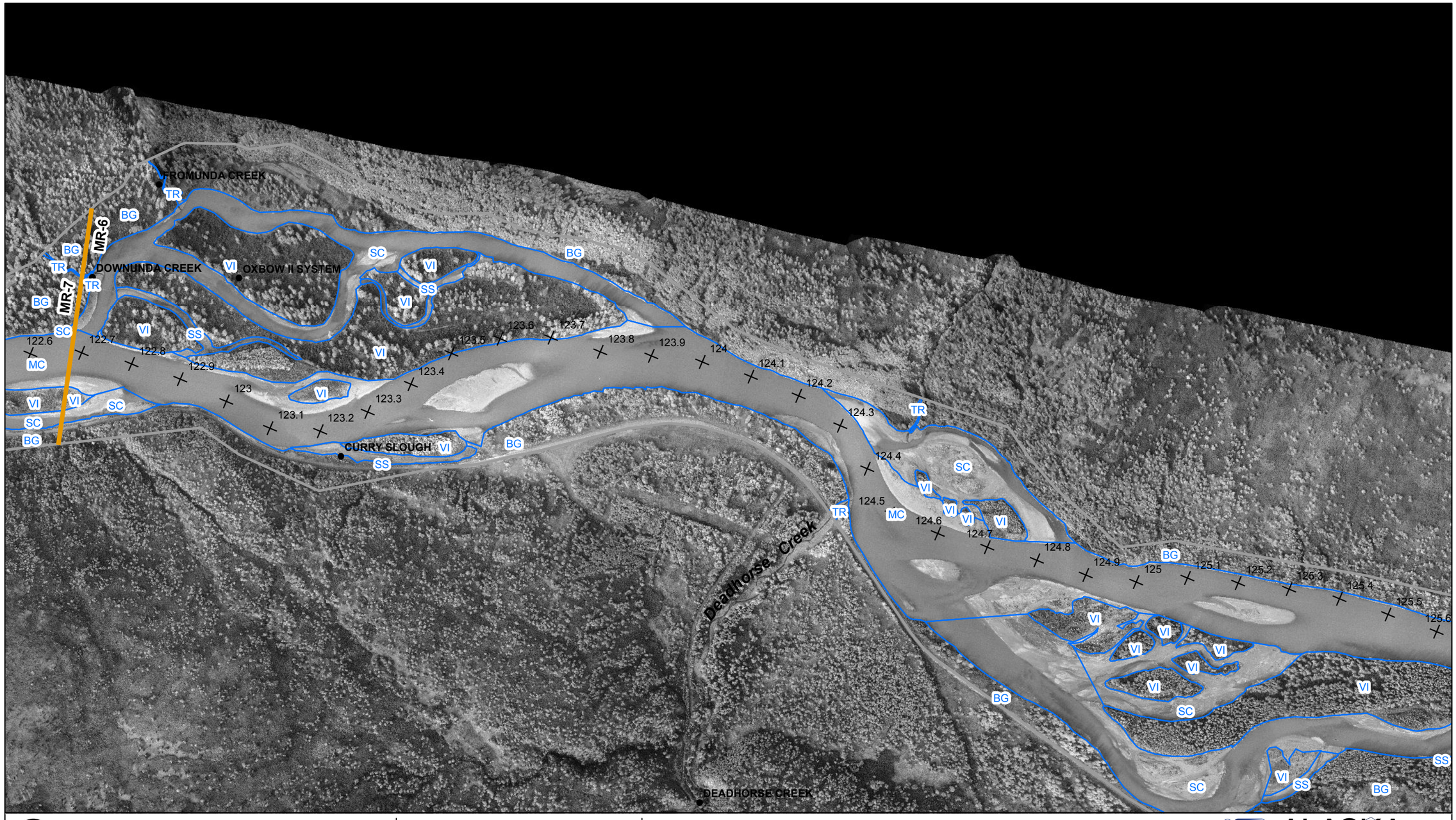
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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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PRM 102.0 - 154.0	09/11/1983,	12,500 cfs

Location:	Imagery Date,	Discharge (Gold Creek)
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ALASKA ENERGY AUTHORITY



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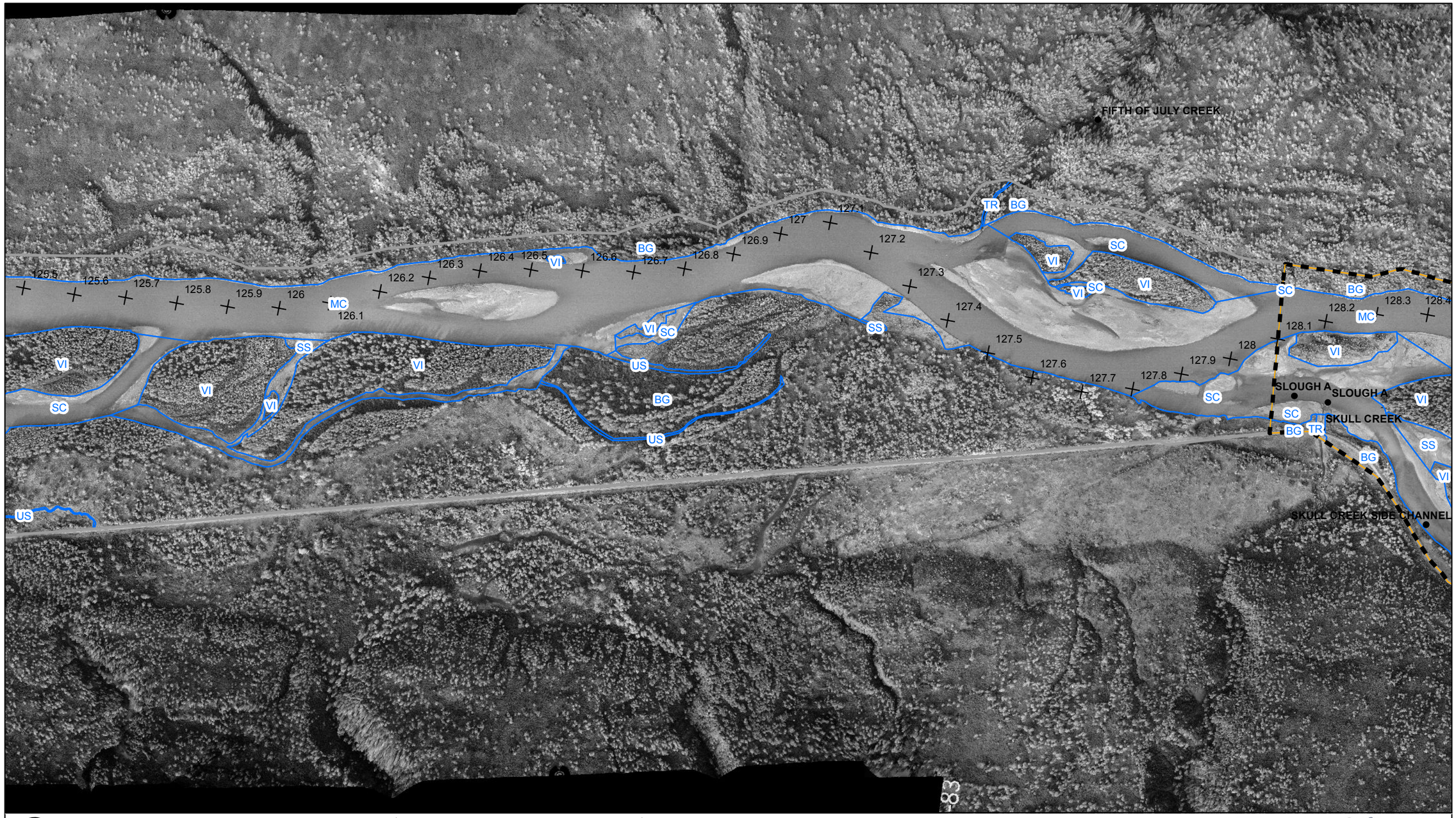
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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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PRM 102.0 - 154.0	09/11/1983,	12,500 cfs

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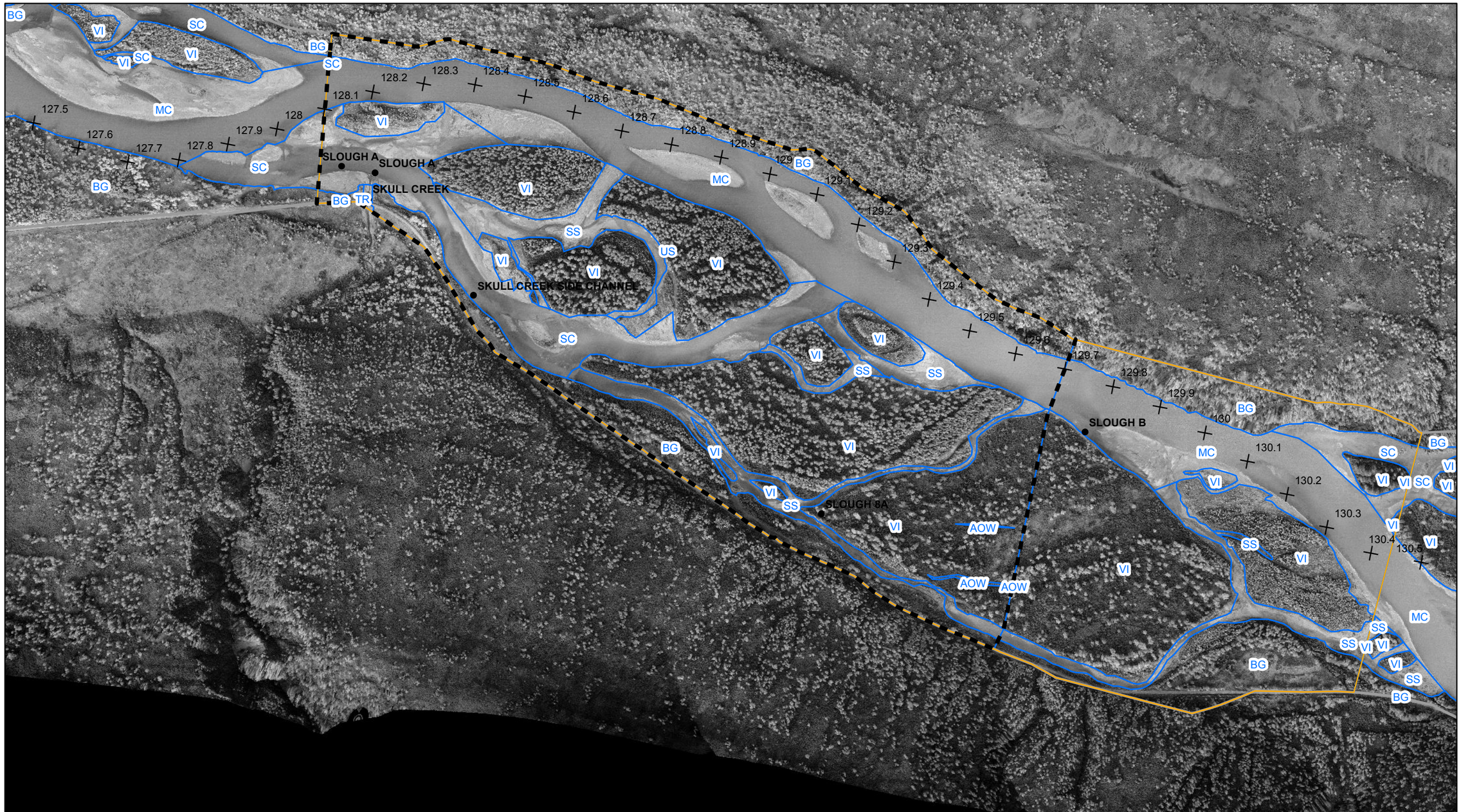
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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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PRM 154.0 - 187.1	07/19/1980-	35,800 cfs
	07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



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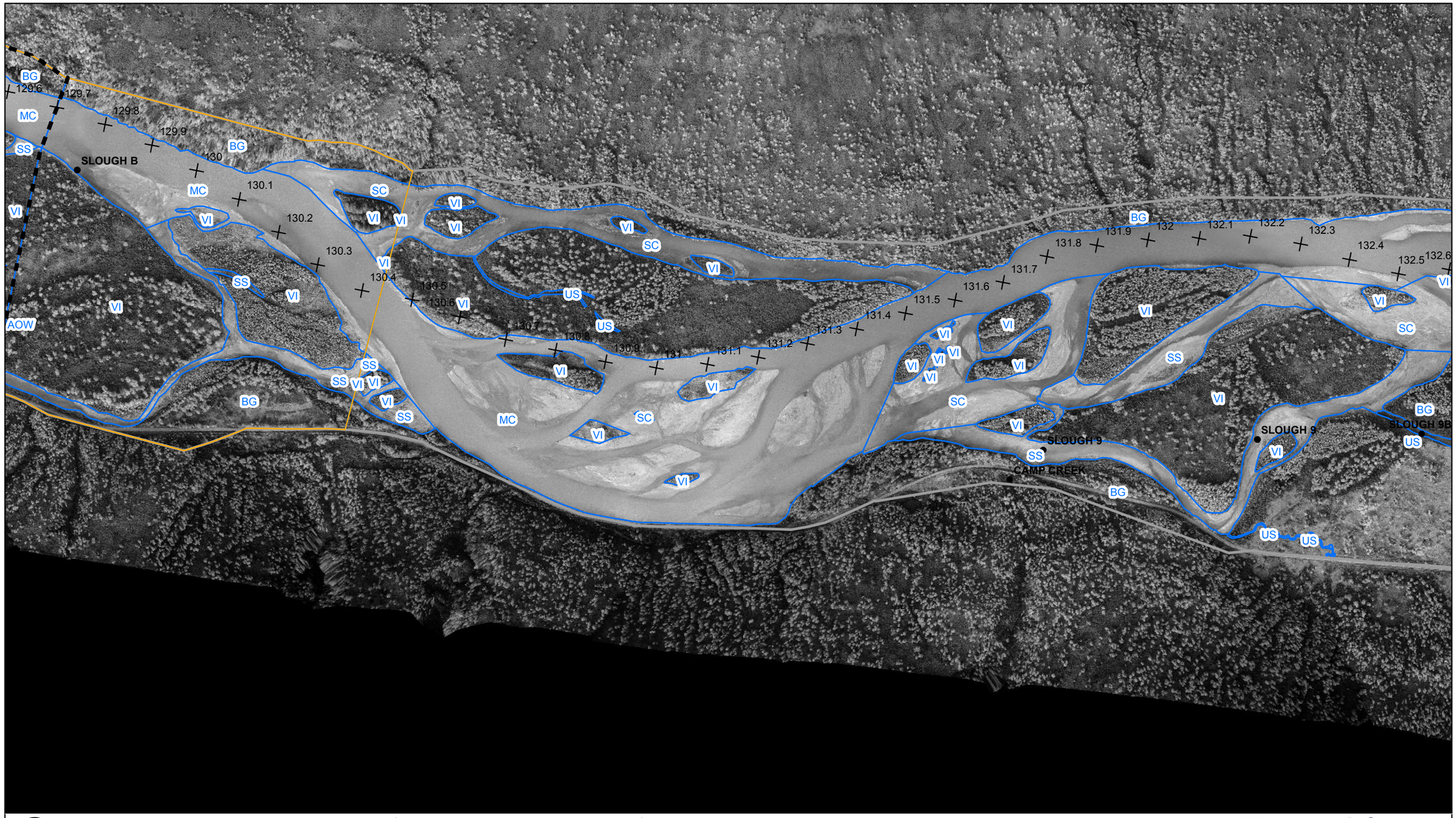
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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
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ALASKA ENERGY AUTHORITY



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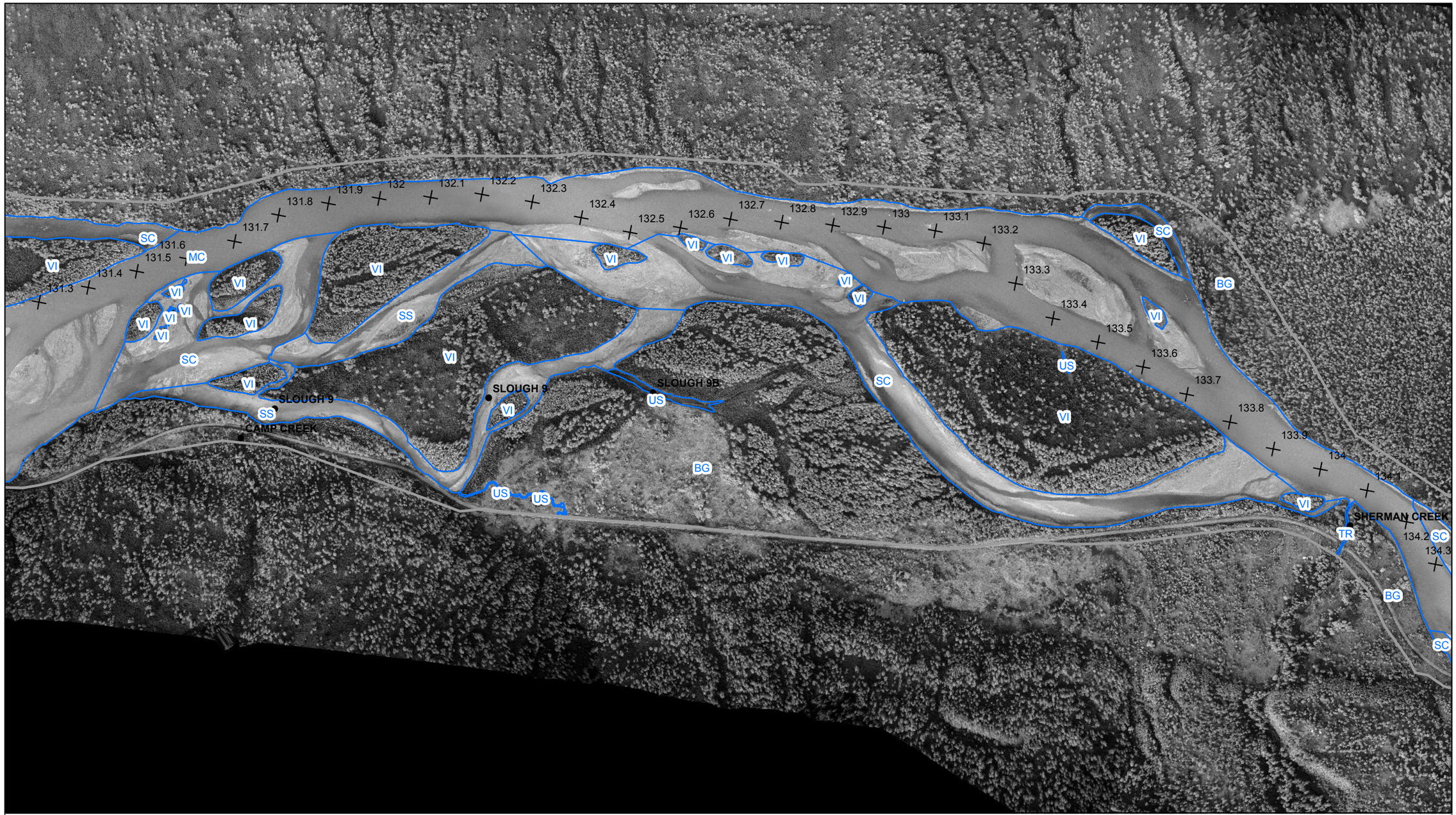
See index page for legend and additional data information.

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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date, Discharge (Gold Creek)	
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
				07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



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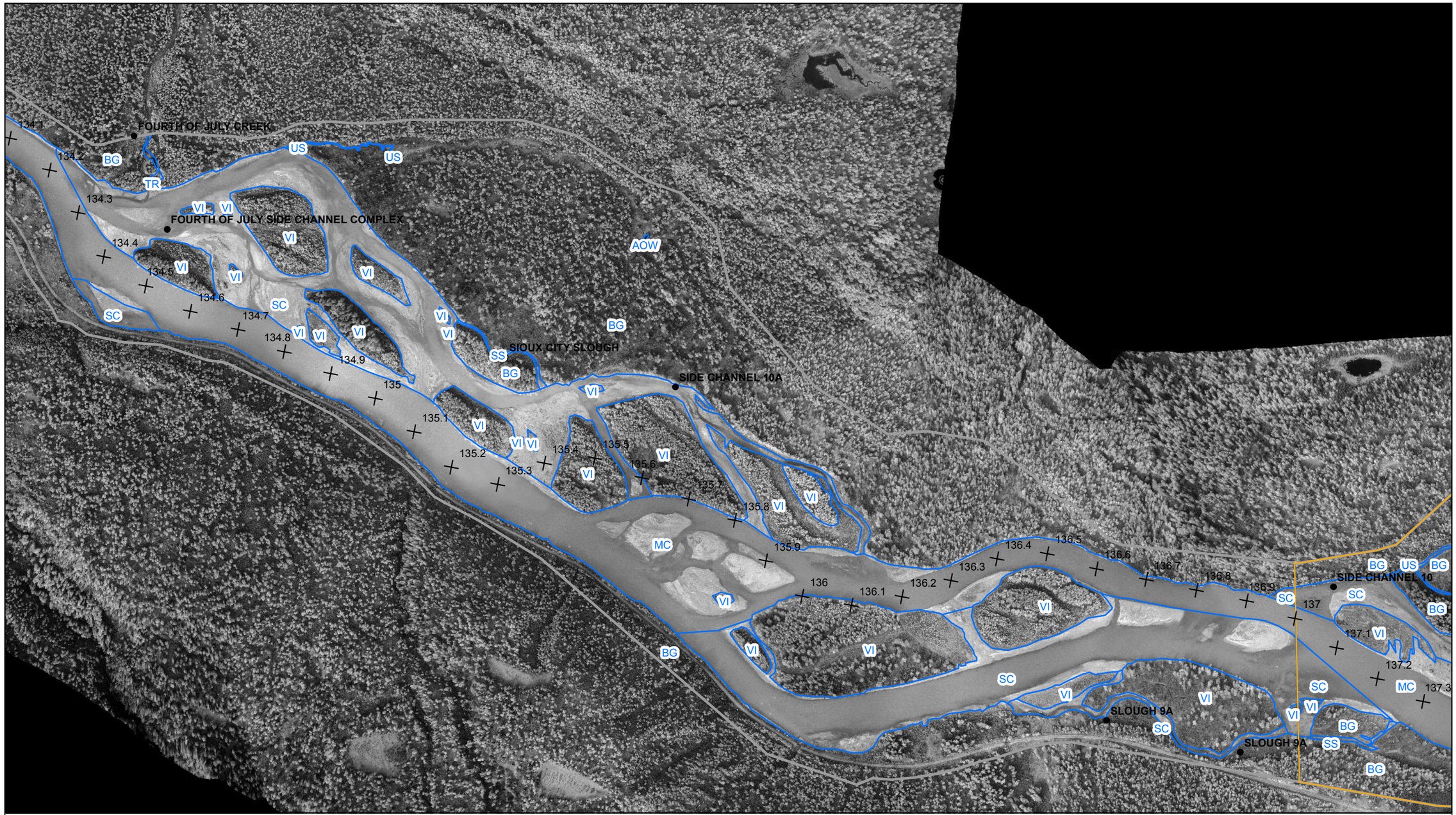
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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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Location:	Imagery Date,	Discharge (Gold Creek)
PRM 154.0 - 187.1	07/19/1980-	35,800 cfs
	07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



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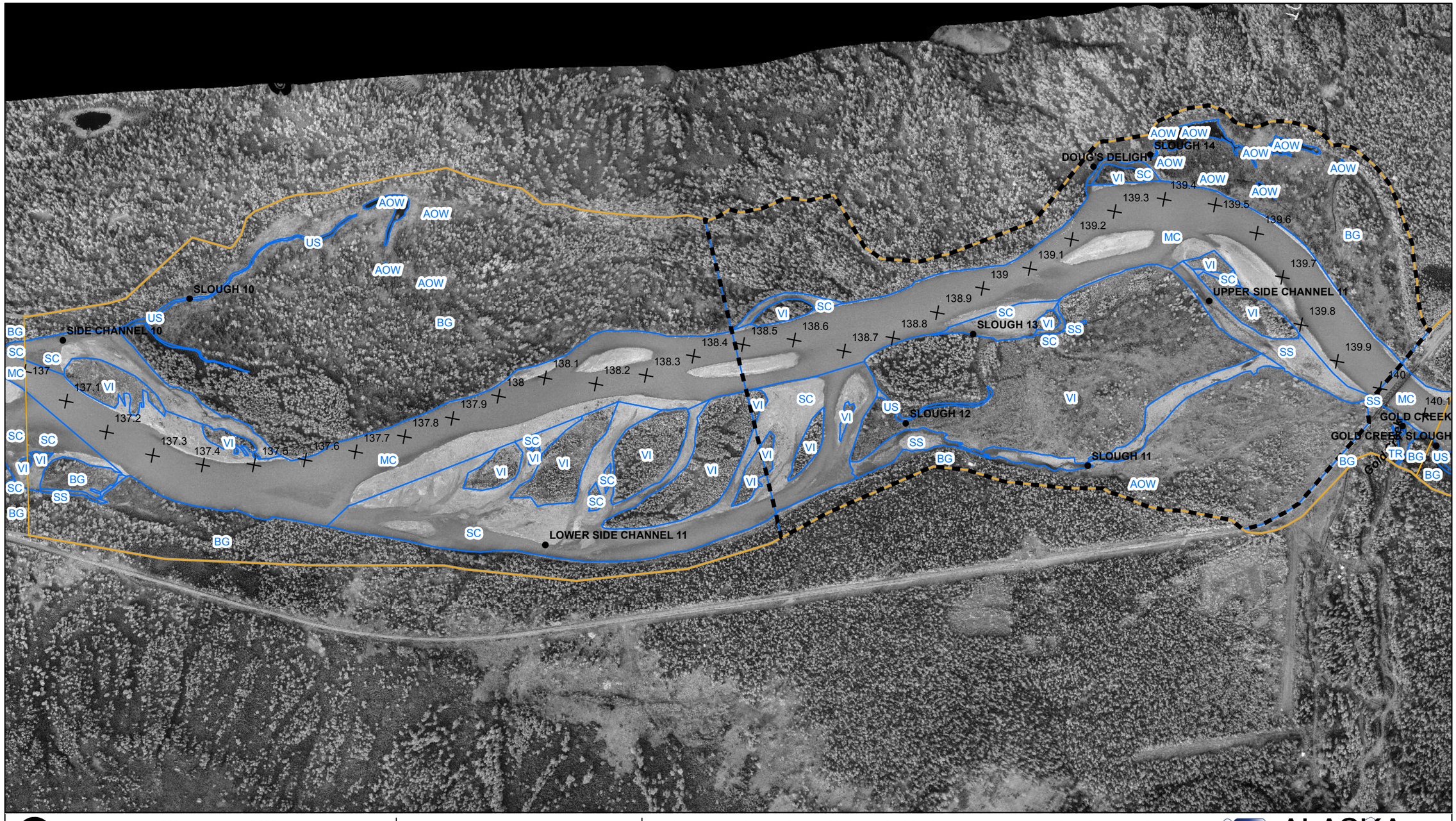
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MIDDLE SUSITNA RIVER SEGMENT 1983 GEOMORPHIC FEATURES

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PRM 154.0 - 187.1	07/19/1980-	35,800 cfs
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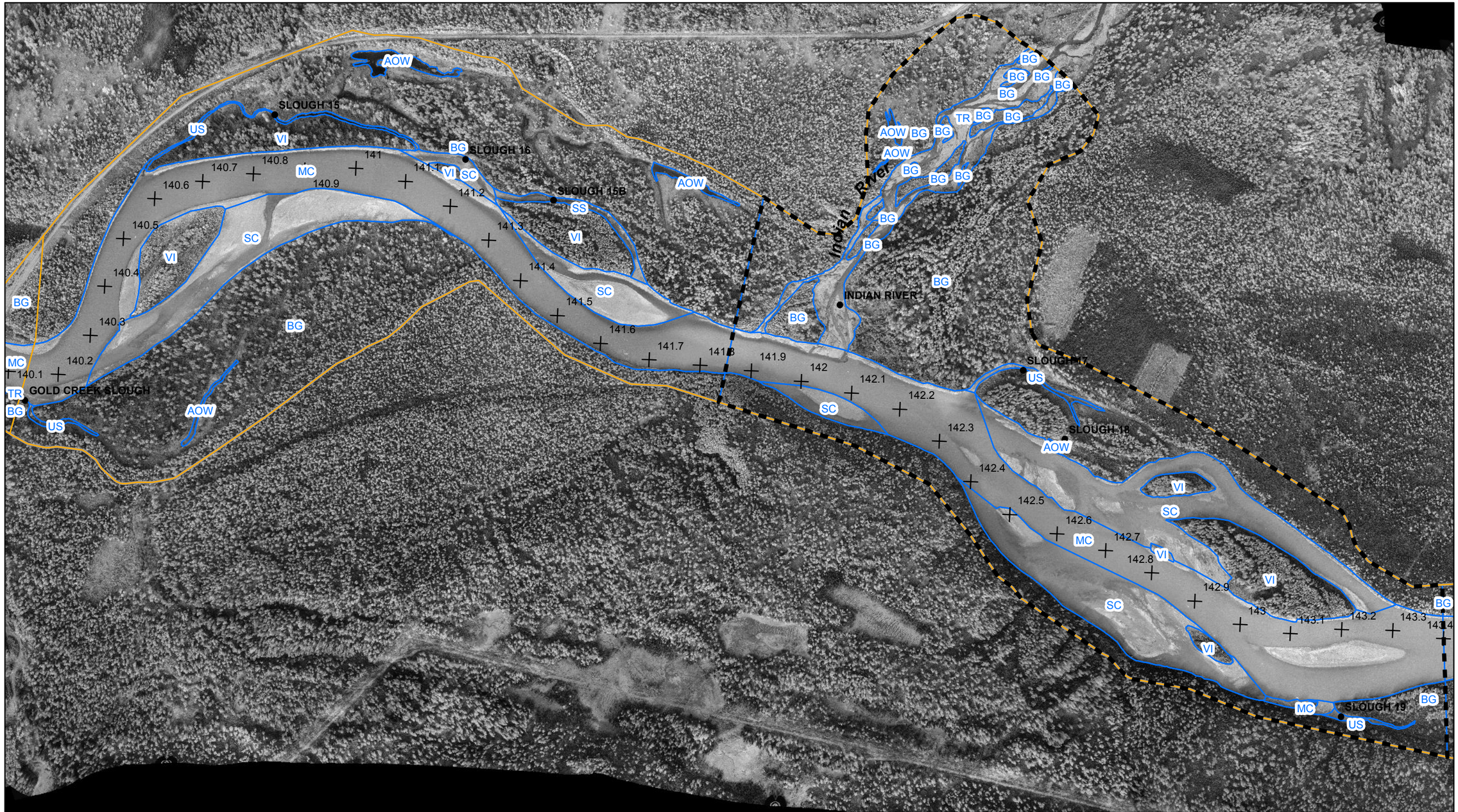
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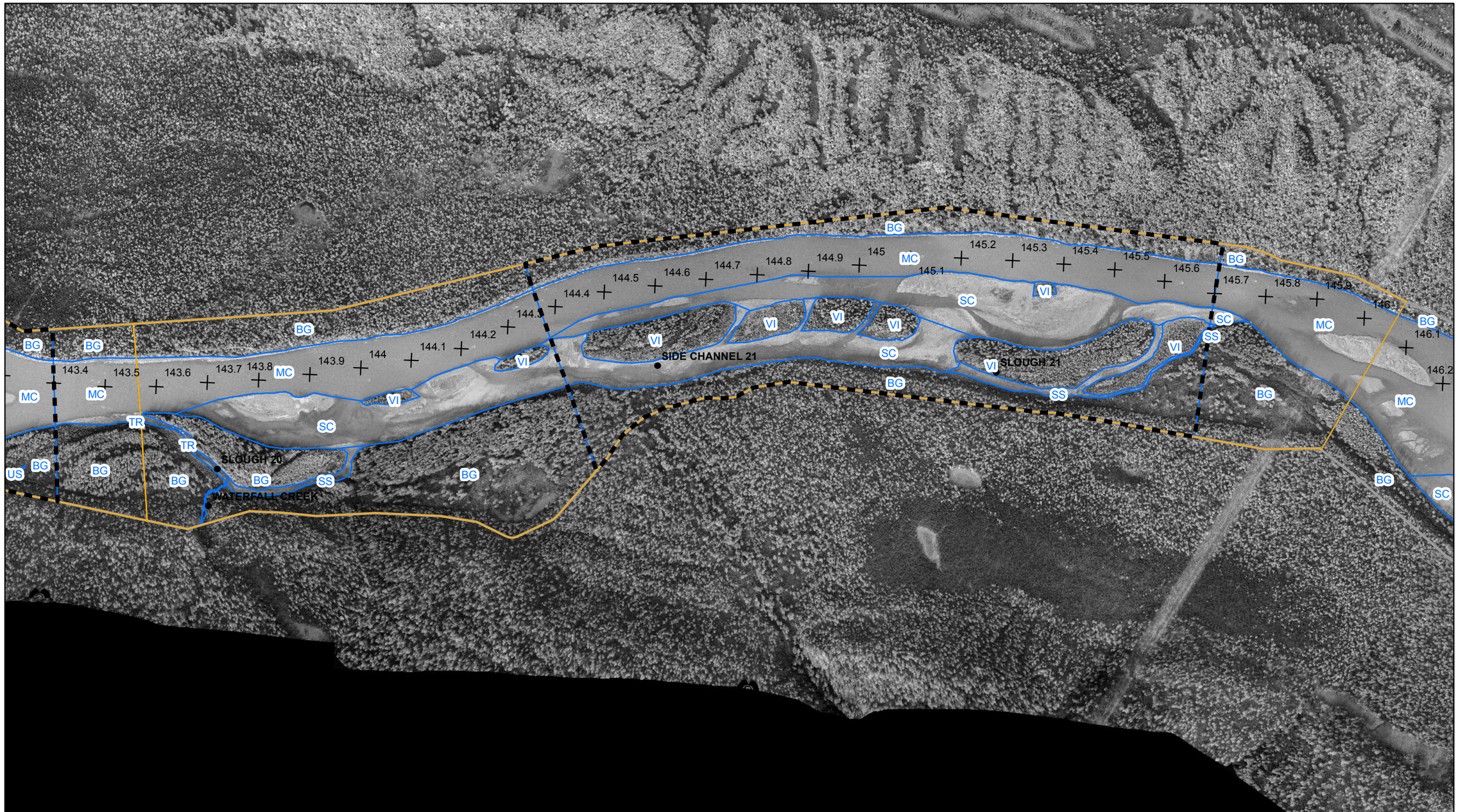
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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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ALASKA ENERGY AUTHORITY



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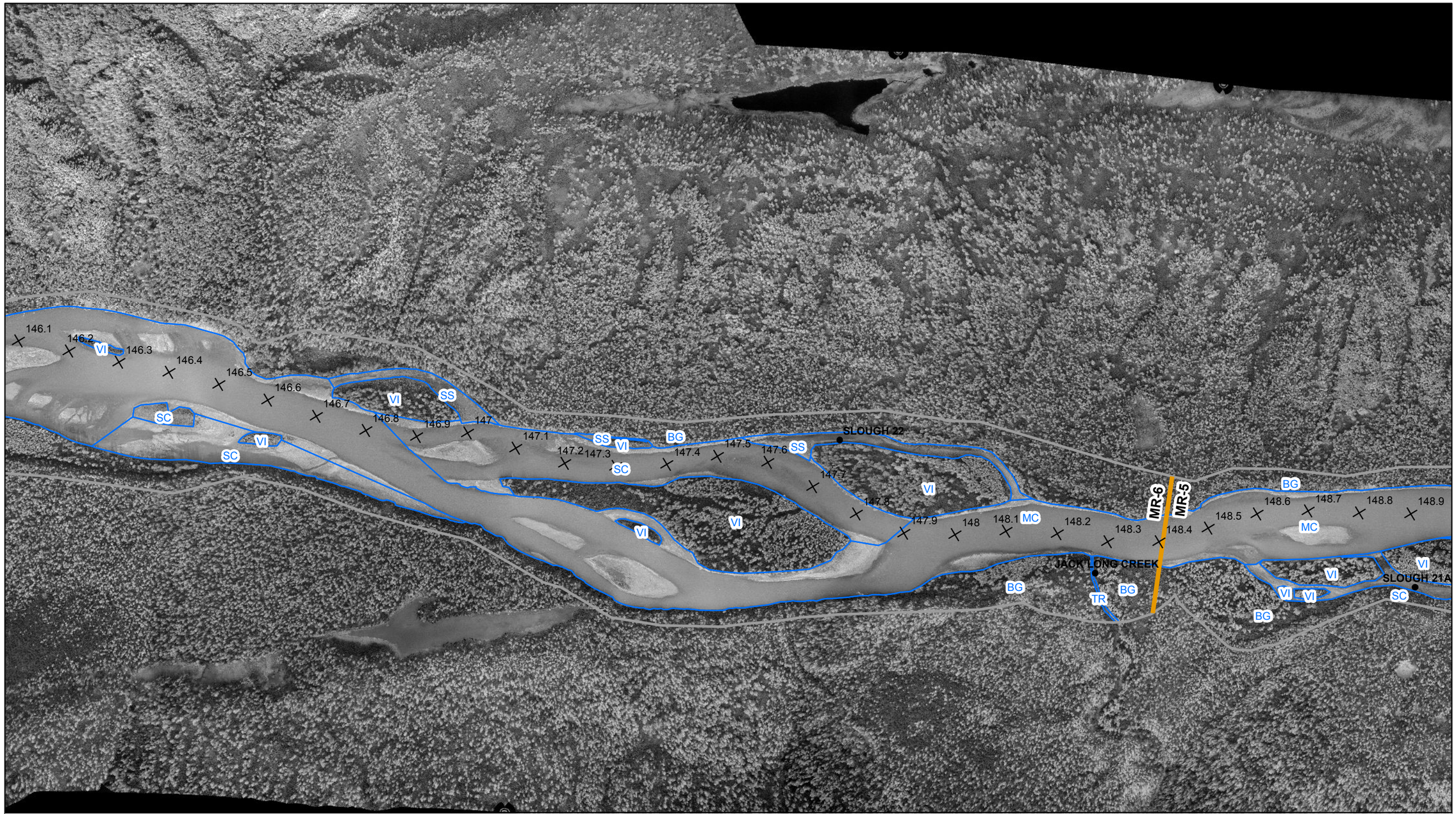
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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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PRM 102.0 - 154.0	09/11/1983,	12,500 cfs

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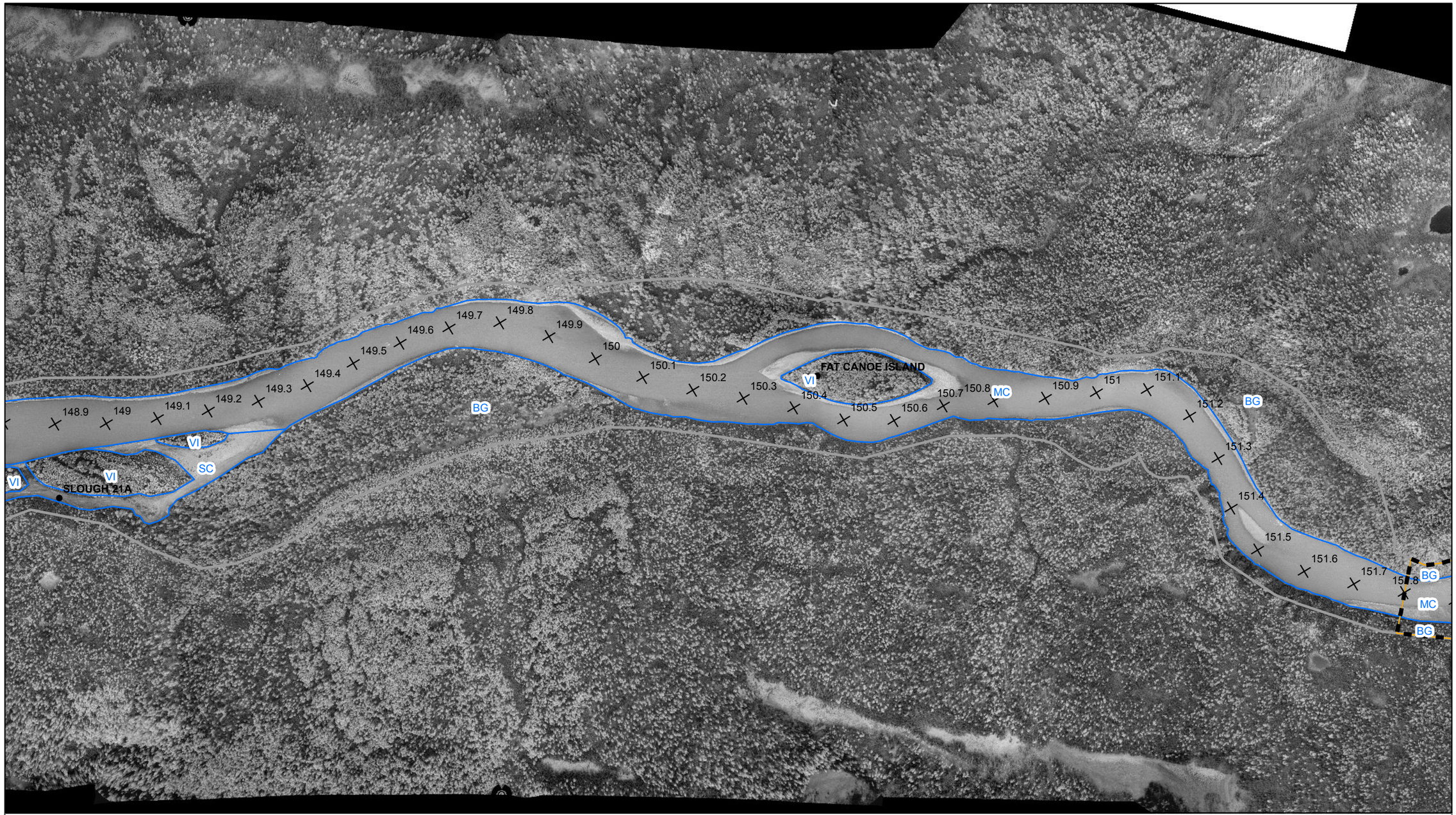
Sheet 21 of 34

MIDDLE SUSITNA RIVER SEGMENT
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ALASKA ENERGY AUTHORITY



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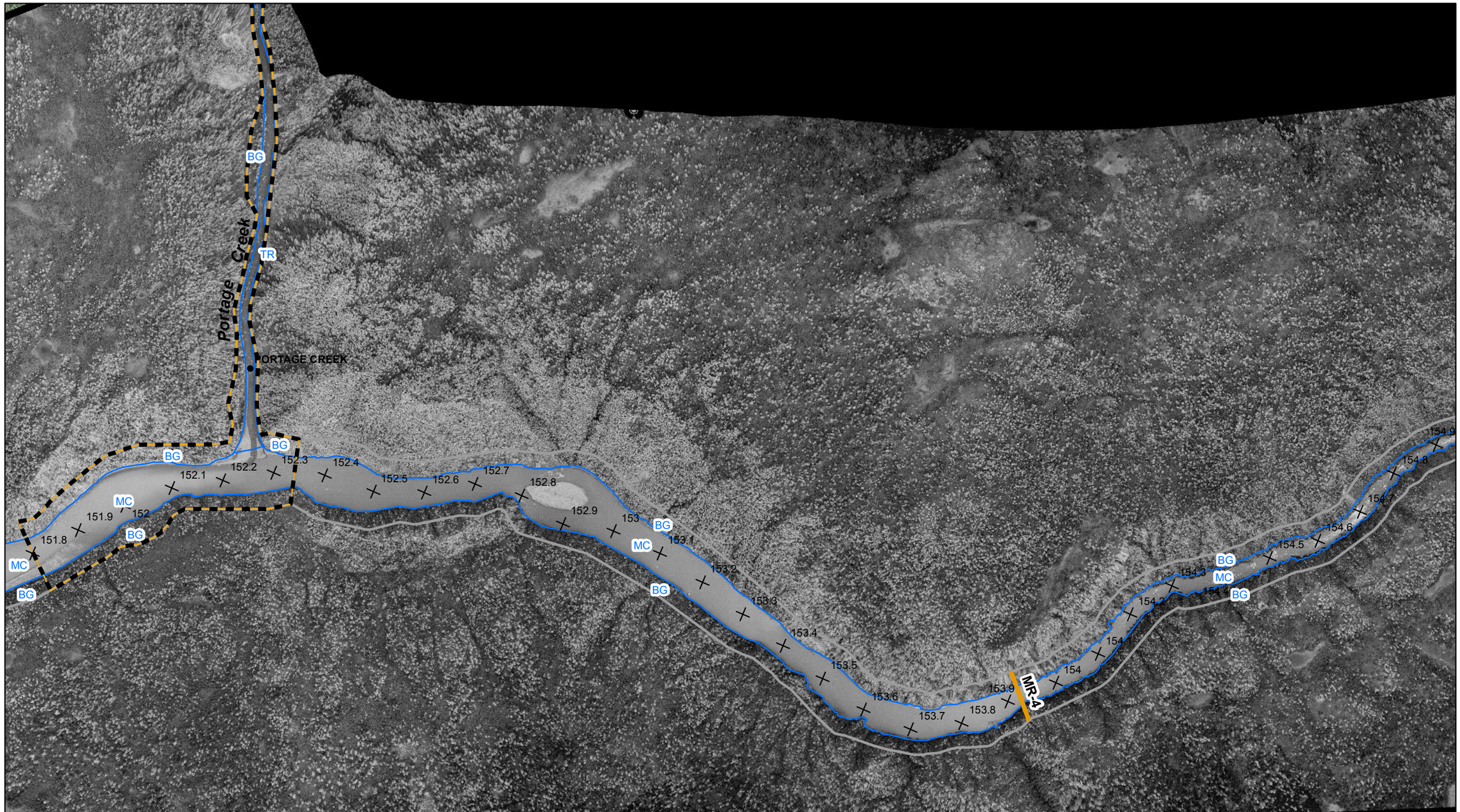
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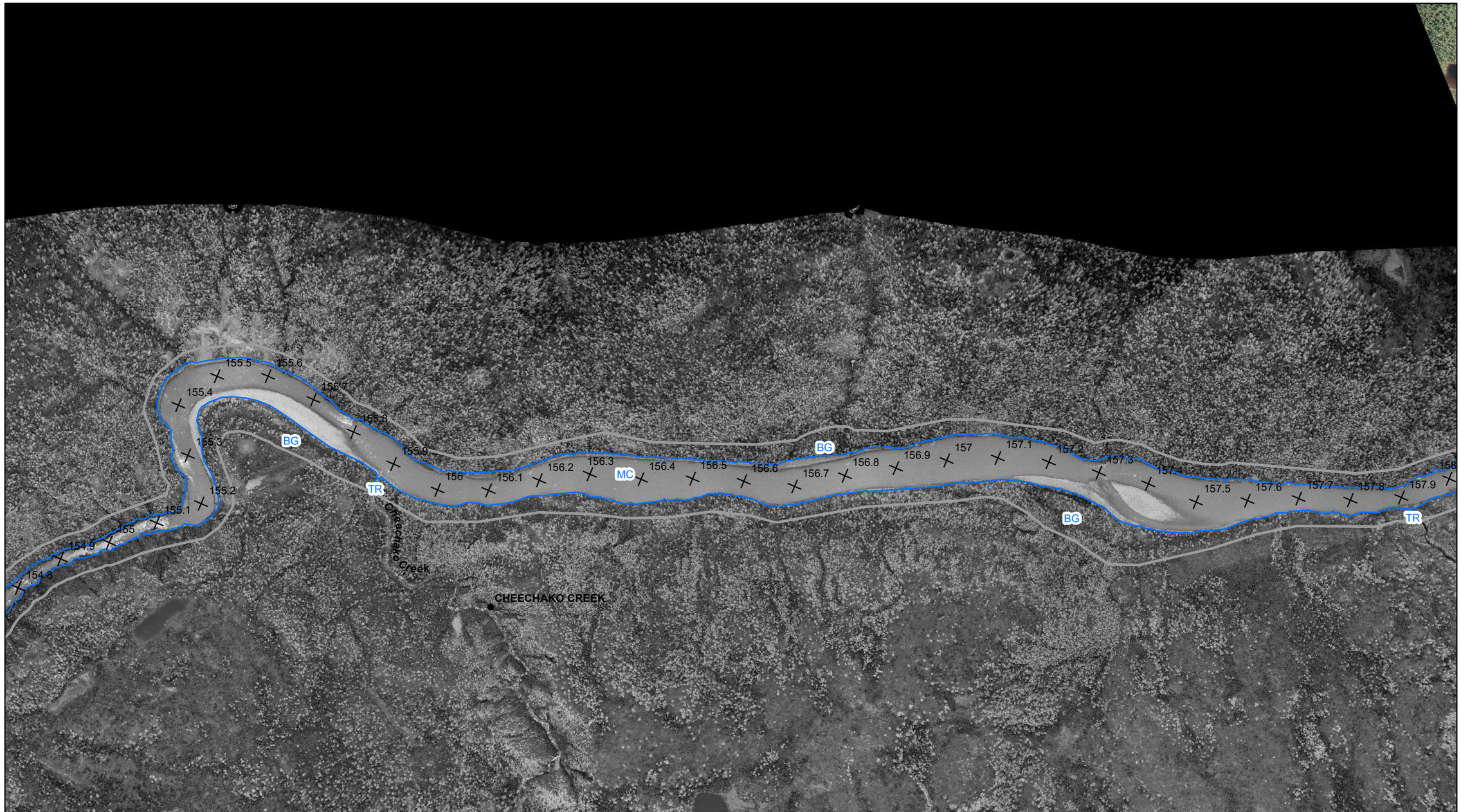
1 inch = 1,000 feet

Sheet 23 of 34

MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

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PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
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1 inch = 1,000 feet

See index page for legend and additional data information.

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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 154.0 - 187.1	07/19/1980-	35,800 cfs
	07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

1 inch = 1,000 feet

See index page for legend and additional data information.

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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs

Location:	Imagery Date, Discharge (Gold Creek)	
PRM 154.0 - 187.1	07/19/1980-	35,800 cfs
	07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

See index page for legend and additional data information.

1 inch = 1,000 feet

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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
				07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

See index page for legend and additional data information.

1 inch = 1,000 feet

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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date, Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980- 35,800 cfs 07/20/1980, 31,600 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

See index page for legend and additional data information.

1 inch = 1,000 feet

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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date, Discharge (Gold Creek)	
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
				07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

1 inch = 1,000 feet

See index page for legend and additional data information.

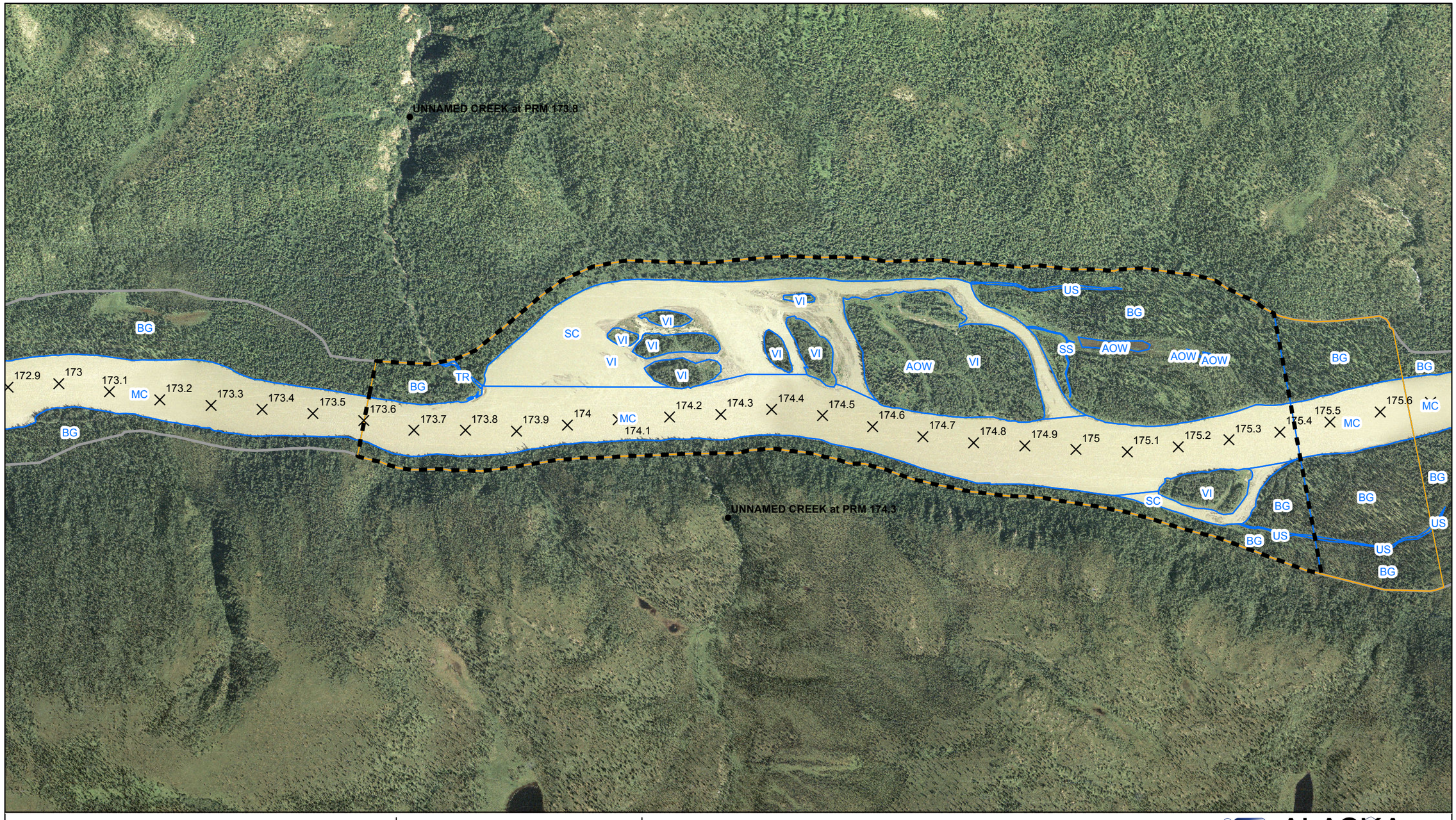
Sheet 29 of 34

MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs

Location:	Imagery Date, Discharge (Gold Creek)	
PRM 154.0 - 187.1	07/19/1980-	35,800 cfs
	07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

See index page for legend and additional data information.

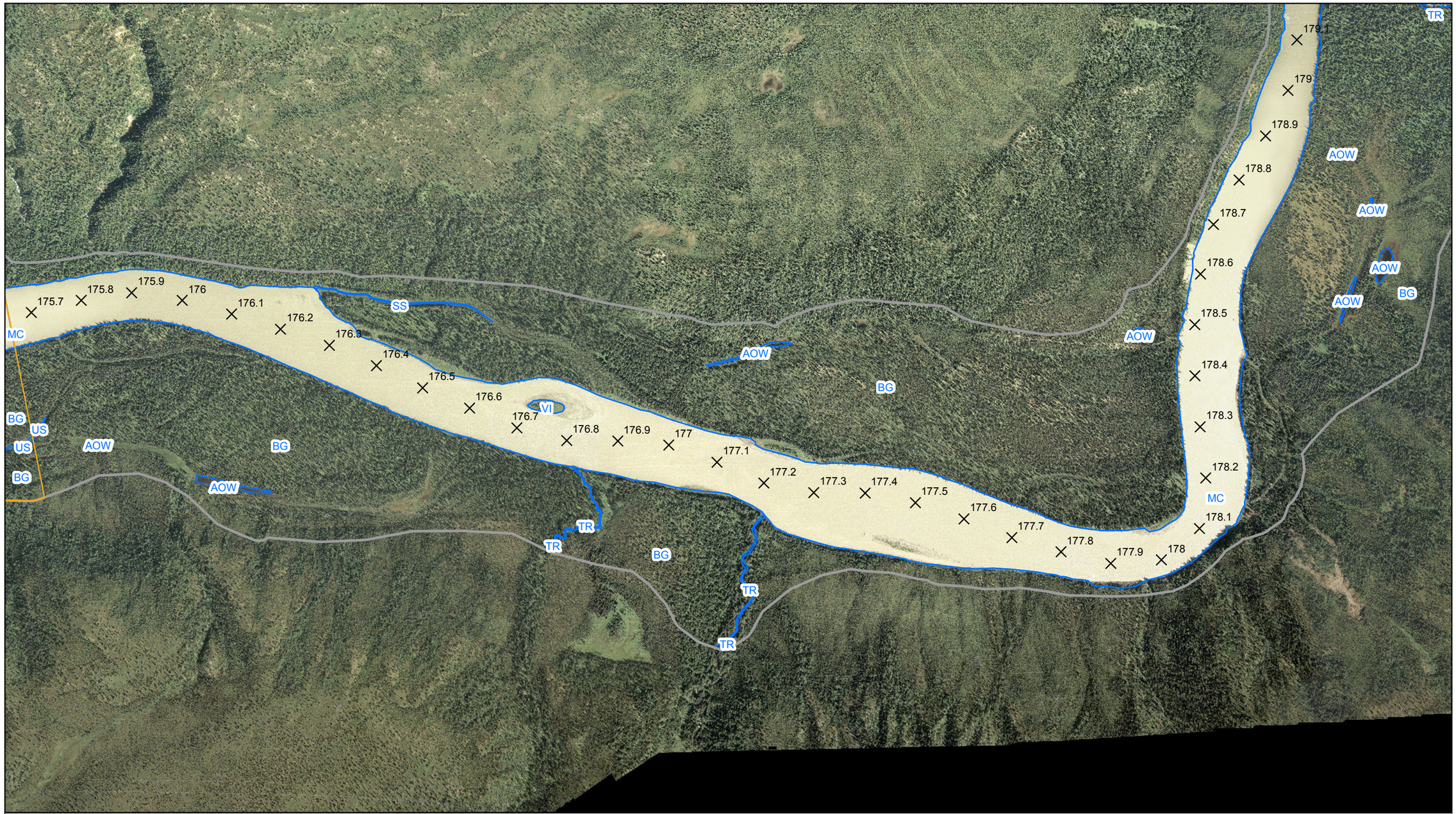
1 inch = 1,000 feet

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MIDDLE SUSITNA RIVER SEGMENT 1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date, Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980- 35,800 cfs 07/20/1980, 31,600 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

1 inch = 1,000 feet

See index page for legend and additional data information.

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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 154.0 - 187.1	07/19/1980-	35,800 cfs
	07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

See index page for legend and additional data information.

1 inch = 1,000 feet

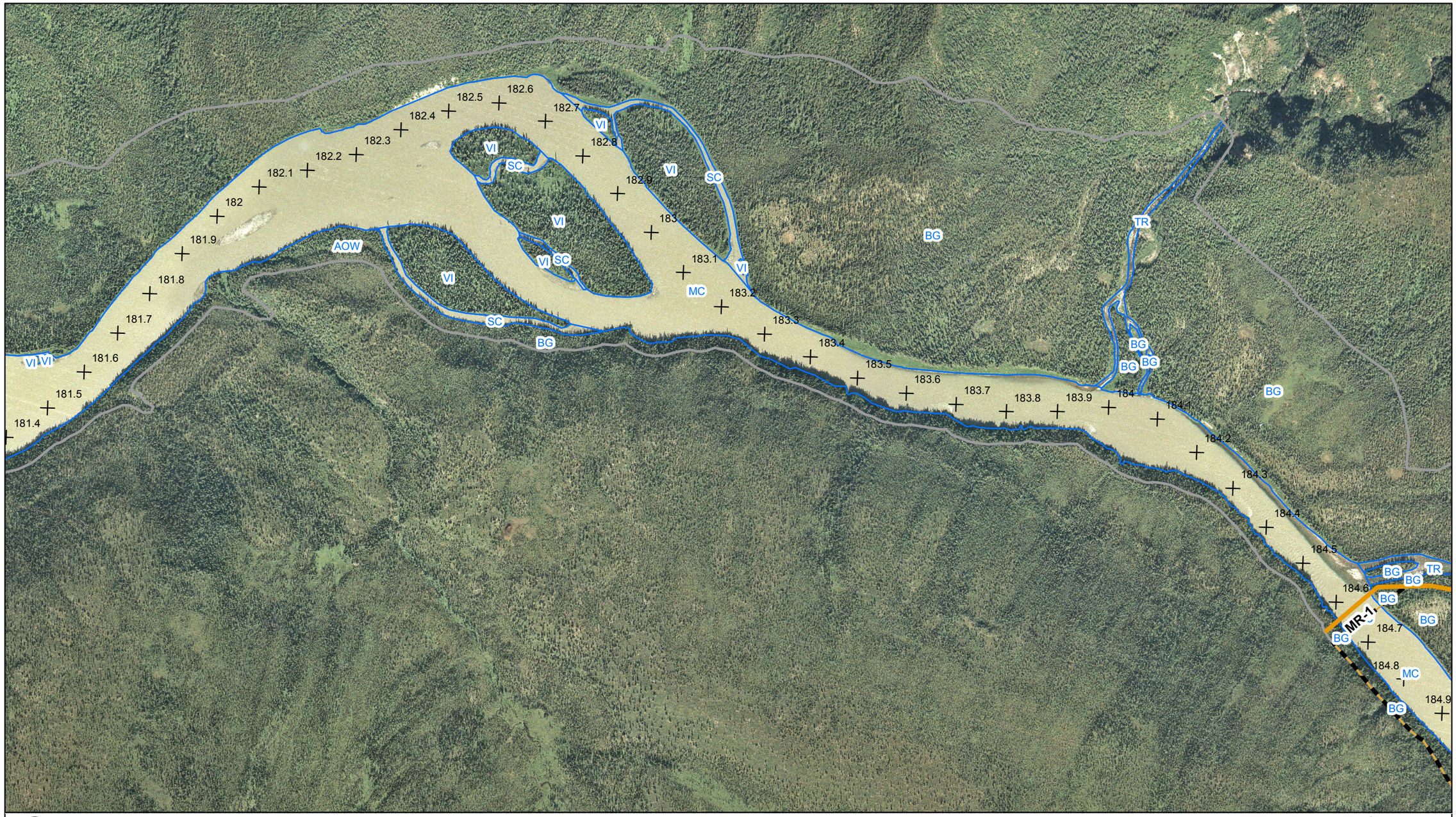
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MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs

Location:	Imagery Date, Discharge (Gold Creek)	
PRM 154.0 - 187.1	07/19/1980-	35,800 cfs
	07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

See index page for legend and additional data information.

1 inch = 1,000 feet

Sheet 33 of 34

MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date, Discharge (Gold Creek)	
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
				07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY



0 1,000 2,000 Feet

See index page for legend and additional data information.

1 inch = 1,000 feet

Sheet 34 of 34

MIDDLE SUSITNA RIVER SEGMENT
1983 GEOMORPHIC FEATURES

Location:	Imagery Date,	Discharge (Gold Creek)	Location:	Imagery Date,	Discharge (Gold Creek)
PRM 102.0 - 154.0	09/11/1983,	12,500 cfs	**PRM 154.0 - 187.1**	07/19/1980-	35,800 cfs
				07/20/1980,	31,600 cfs

ALASKA ENERGY AUTHORITY