

MGP Utility Model Standards
Water Geometry Rules

Feature Class1	Subtype1	Rule	Feature Class2	Subtype2	Action
wsControlValve_POINT	NA	Must intersect end vertex of	wsPressurizedMain_LINE	NA	Control Valve Splits Pressurized Main
wsFitting_POINT	Bend	Must intersect non-end vertex of	wsPressurizedMain_LINE	NA	Fitting -Bend does not split Pressurized Main
wsFitting_POINT	Cap	Must intersect end vertex of	wsPressurizedMain_LINE	NA	Fitting - Cap resides at endpoint of Pressurized Main
wsFitting_POINT	Coupling	Must intersect end vertex of	wsPressurizedMain_LINE	NA	Fitting - Coupling splits Pressurized Main
wsFitting_POINT	Cross	Must intersect end vertex of	wsPressurizedMain_LINE	NA	Fitting - Cross splits Pressurized Main
wsFitting_POINT	Reducer	Must intersect end vertex of	wsPressurizedMain_LINE	NA	Fitting - Reducer splits Pressurized Main
wsFitting_POINT	Tap	Must intersect end vertex of	wsLateralLine_LINE (Public side)	Domestic	Fitting - Tap resides at endpoint of public side Lateral Line - Domestic
wsFitting_POINT	Tap	Must intersect non-end vertex of	wsPressurizedMain_LINE	NA	Fitting - Tap does not split Pressurized Main
wsFitting_POINT	Tee	Must intersect end vertex of	wsPressurizedMain_LINE	Hydrant Lead	Fitting - Tee resides at endpoint of Pressurized Main - Hydrant Lead
wsFitting_POINT	Tee	Must intersect end vertex of	wsPressurizedMain_LINE	NA	Fitting - Tee splits Pressurized Main
wsFitting_POINT	Wye	Must intersect end vertex of	wsPressurizedMain_LINE	NA	Fitting - Wye splits Pressurized Main
wsFitting_POINT	Saddle	Must intersect non-end vertex of	wsPressurizedMain_LINE	NA	Fitting - Saddle does not split Pressurized Main
wsHydrant_POINT	NA	Must intersect end vertex of	wsPressurizedMain_LINE	Hydrant Lead	Hydrant resides at endpoint of Pressurized Main - Hydrant Lead
wsPressurizedMain_LINE	Hydrant Lead	End vertices must intersect	wsFitting_POINT	Tee	Pressurized Main - Hydrant Lead has Fitting - Tee at endpoint
wsPressurizedMain_LINE	Hydrant Lead	End vertices must intersect	wsHydrant_POINT	NA	Pressurized Main - Hydrant Lead has Hydrant at endpoint
wsLateralLine_LINE (Private side)	NA	End vertices must intersect	wsMeter_POINT	NA	Private side Lateral Line - Domestic has Meter at endpoint
wsLateralLine_LINE (Private side)	NA	End vertices must intersect	wsSystemValve_POINT	ServiceValve	Private side Lateral Line - Domestic has Service Valve at endpoint
wsLateralLine_LINE (Public side)	NA	End vertices must intersect	wsFitting_POINT	Tap	Public side Lateral Line - Domestic has Fitting - Tap at endpoint
wsLateralLine_LINE (Public side)	NA	End vertices must intersect	wsSystemValve_POINT	ServiceValve	Public side Lateral Line - Domestic has Service Valve at endpoint
wsMeter_POINT	NA	Must intersect end vertex of	wsLateralLine_LINE	Domestic	Meter resides at endpoint of Lateral Line - Domestic
wsMeter_POINT	NA	Must intersect end vertex of	wsPressurizedMain_LINE	Distribution	Meter resides at endpoint of Pressurized Main
wsPressurizedMain_LINE	Distribution	End vertices must intersect	wsControlValve_POINT	NA	Pressurized Main is split by Control Valve
wsPressurizedMain_LINE	Distribution	End vertices must intersect	wsFitting_POINT	Cap	Pressurized Main has Fitting - Cap at endpoint
wsPressurizedMain_LINE	Distribution	End vertices must intersect	wsFitting_POINT	Bend	Pressurized Main is not split by Fitting - Bend
wsPressurizedMain_LINE	Distribution	End vertices must intersect	wsFitting_POINT	Coupling	Pressurized Main is split by Fitting - Coupling
wsPressurizedMain_LINE	Distribution	End vertices must intersect	wsFitting_POINT	Cross	Pressurized Main is split by Fitting - Cross
wsPressurizedMain_LINE	Distribution	End vertices must intersect	wsFitting_POINT	Reducer	Pressurized Main is split by Fitting - Reducer
wsPressurizedMain_LINE	Distribution	End vertices must intersect	wsFitting_POINT	Tee	Pressurized Main is split by Fitting - Tee
wsPressurizedMain_LINE	Distribution	End vertices must intersect	wsFitting_POINT	Wye	Pressurized Main is split by Fitting - Wye
wsPressurizedMain_LINE	Distribution	End vertices must intersect	wsPump_POINT	NA	Pressurized Main is split by Pump
wsPressurizedMain_LINE	Distribution	End vertices must intersect	wsSystemValve_POINT	In-Line Valve	Pressurized Main is split by In-line System Valve
wsPressurizedMain_LINE	NA	End vertices must intersect	wsMeter_POINT	NA	Pressurized Main is split by Meter
wsPump_POINT	NA	Must intersect end vertex of	wsPressurizedMain_LINE	NA	Pump resides at endpoint of Pressurized Main
wsSystemValve_POINT	In-Line Valve	Must intersect end vertex of	wsPressurizedMain_LINE	NA	In-line System Valve resides at endpoint of Pressurized Main
wsSystemValve_POINT	ServiceValve	Must intersect end vertex of	wsLateralLine_LINE (Private side)	Domestic	Service valve resides at endpoint of Private side Lateral Line
wsSystemValve_POINT	ServiceValve	Must intersect end vertex of	wsLateralLine_LINE (Public side)	Domestic	Service valve resides at endpoint of Public side Lateral Line

MGP Utility Model Standards

Water Geometry Matrix

	ControlValve_POINT - NA	Fitting_POINT - Tap	Fitting_POINT - Tee	Fitting_POINT - Cap	Fitting_POINT - Reducer	Fitting_POINT - Wye	Fitting_POINT - Cross	Fitting_POINT - Coupling	Hydrant_POINT - Bend	PressurizedMain_LINE - NA	LateralLine_LINE - Hydrant Lead	LateralLine_LINE (Private side)	Meter_POINT - NA	PressurizedMain_LINE - NA	Pump_POINT - NA	SystemValve_POINT - ServiceValve	SystemValve_POINT - In-Line Valve
ControlValve_POINT - NA	X	X	X	X	X	X	X	X	X	X	X	X	X	S	X	X	X
Fitting_POINT - Tap	X	X	X	X	X	X	X	X	X	X	X	EP	X	NS	X	X	X
Fitting_POINT - Tee	X	X	X	X	X	X	X	X	X	EP	X	X	X	S	X	X	X
Fitting_POINT - Cap	X	X	X	X	X	X	X	X	X	X	X	X	X	S	X	X	X
Fitting_POINT - Reducer	X	X	X	X	X	X	X	X	X	X	X	X	X	S	X	X	X
Fitting_POINT - Wye	X	X	X	X	X	X	X	X	X	X	X	X	X	S	X	X	X
Fitting_POINT - Cross	X	X	X	X	X	X	X	X	X	X	X	X	X	S	X	X	X
Fitting_POINT - Coupling	X	X	X	X	X	X	X	X	X	X	X	X	X	S	X	X	X
Fitting_POINT - Bend	X	X	X	X	X	X	X	X	X	NS	NS	NS	X	NS	X	X	X
Hydrant_POINT - NA	X	X	X	X	X	X	X	X	X	S	X	X	X	X	X	X	X
PressurizedMain_LINE - Hydrant Lead	X	X	EP	X	X	X	X	NS	EP	X	X	X	X	S	X	X	X
LateralLine_LINE (Private side)	X	X	X	X	X	X	X	NS	X	X	X	X	EP	X	X	EP	X
LateralLine_LINE (Public side)	X	EP	X	X	X	X	X	NS	X	X	X	X	X	NS	X	EP	X
Meter_POINT - NA	X	X	X	X	X	X	X	X	X	X	EP	X	X	S	X	X	X
PressurizedMain_LINE - NA	S	NS	S	S	S	S	S	NS	X	S	X	NS	S	X	S	X	S
Pump_POINT - NA	X	X	X	X	X	X	X	X	X	X	X	X	X	S	X	X	X
SystemValve_POINT - ServiceValve	X	X	X	X	X	X	X	X	X	X	S	S	X	X	X	X	X
SystemValve_POINT - In-Line Valve	X	X	X	X	X	X	X	X	X	X	X	X	X	S	X	X	X

INT - Intersects
 NS - Does not split
 S - Splits
 EP - End point

Water Required Fields

Feature Class	Required Field
WSCONTROLVALVE_POINT	INSTALLDATE
WSCONTROLVALVE_POINT	LIFECYCLESTATUS
WSCONTROLVALVE_POINT	WATERTYPE
WSCONTROLVALVE_POINT	SUBTYPE
WSCONTROLVALVE_POINT	DIAMETER
WSCONTROLVALVE_POINT	OWNERSHIP
WSFITTING_POINT	WATERTYPE
WSFITTING_POINT	OWNERSHIP
WSFITTING_POINT	SUBTYPE
WSFITTING_POINT	INSTALLDATE
WSFITTING_POINT	LIFECYCLESTATUS
WSHYDRANT_POINT	LIFECYCLESTATUS
WSHYDRANT_POINT	WATERTYPE
WSHYDRANT_POINT	OWNERSHIP
WSHYDRANT_POINT	INSTALLDATE
WSLATERALLINE_LINE	LIFECYCLESTATUS
WSLATERALLINE_LINE	WATERTYPE
WSLATERALLINE_LINE	OWNERSHIP
WSLATERALLINE_LINE	INSTALLDATE
WSLATERALLINE_LINE	SUBTYPE
WSLATERALLINE_LINE	DIAMETER
WSLATERALLINE_LINE	MATERIAL
WSMETER_POINT	SUBTYPE
WSMETER_POINT	DIAMETER
WSMETER_POINT	LIFECYCLESTATUS
WSMETER_POINT	WATERTYPE
WSMETER_POINT	OWNERSHIP
WSMETER_POINT	INSTALLDATE
WSPRESSURIZEDMAIN_LINE	LIFECYCLESTATUS
WSPRESSURIZEDMAIN_LINE	WATERTYPE
WSPRESSURIZEDMAIN_LINE	OWNERSHIP
WSPRESSURIZEDMAIN_LINE	INSTALLDATE
WSPRESSURIZEDMAIN_LINE	SUBTYPE
WSPRESSURIZEDMAIN_LINE	DIAMETER
WSPRESSURIZEDMAIN_LINE	MATERIAL
WSSYSTEMVALVE_POINT	LIFECYCLESTATUS
WSSYSTEMVALVE_POINT	OWNERSHIP
WSSYSTEMVALVE_POINT	INSTALLDATE
WSSYSTEMVALVE_POINT	DIAMETER
WSSYSTEMVALVE_POINT	TURNSTOCLOSE
WSSYSTEMVALVE_POINT	ISSERVICE
WSSYSTEMVALVE_POINT	ENCLOSURETYPE
WSSYSTEMVALVE_POINT	WATERTYPE

MGP Utility Model Standards

Sewer Geometry Rules

Feature Class1	Subtype1	Rule	Feature Class2	Subtype2	Action
ssCatchBasin_POINT	NA	Must intersect end vertex of	ssGravityMain_LINE	NA	Catch Basin splits Gravity Main or resides at upstream endpoint of Gravity Main
ssCleanOut_POINT	NA	Must intersect end vertex of	ssLateralLine_LINE (Private side)	NA	Cleanout resides at end of private side Lateral Line
ssCleanOut_POINT	NA	Must intersect end vertex of	ssLateralLine_LINE (Public side)	NA	Cleanout resides at end of public side Lateral Line
ssOpenConveyanceChannel_LINE	NA	Must intersect end vertex of	ssgravityMain_LINE	NA	Open Conveyance must intersect endpoint of Gravity Main
ssDischarge_POINT	NA	Must intersect	ssFitting_POINT	Flared End Section	Discharge Point overlaps Fitting - Flared end section (FES)
ssDischarge_POINT	NA	Must intersect	ssGravityMain_LINE	NA	Discharge Point resides at downstream endpoint of Gravity Main
ssDischarge_POINT	NA	Must intersect	ssOpenConveyanceChannel_LINE	NA	Discharge Point resides at upstream endpoint of Conveyance Line
ssFitting_POINT	Bend	Must intersect non-end vertex of	ssGravityMain_LINE	NA	Fitting - Bend does not split Gravity Main
ssFitting_POINT	Cap	Must intersect end vertex of	ssGravityMain_LINE	NA	Fitting - Cap resides at endpoint of Gravity Main
ssFitting_POINT	Coupling	Must intersect end vertex of	ssGravityMain_LINE	NA	Fitting - Coupling splits Gravity Main
ssFitting_POINT	Cross	Must intersect end vertex of	ssGravityMain_LINE	NA	Fitting - Cross splits Gravity Main
ssFitting_POINT	Flared End Section	Must intersect	ssDischarge_POINT	NA	Fitting - Flared end section (FES) overlaps Discharge Point
ssFitting_POINT	Flared End Section	Must intersect end vertex of	ssOpenConveyanceChannel_LINE	NA	Fitting - Flared end section (FES) resides at upstream endpoint of Conveyance Line
ssFitting_POINT	Flared End Section	Must intersect end vertex of	ssGravityMain_LINE	NA	Fitting - Flared end section (FES) resides at downstream endpoint of Gravity Main
ssFitting_POINT	Reducer	Must intersect end vertex of	ssGravityMain_LINE	NA	Fitting - Reducer splits Gravity Main
ssFitting_POINT	Tap	Must intersect non-end vertex of	ssGravityMain_LINE	NA	Fitting - Tap does not split Gravity Main
ssFitting_POINT	Tap	Must intersect end vertex of	ssLateralLine_LINE (Public side)	Domestic	Fitting - Tap resides at downstream endpoint of Lateral Line
ssFitting_POINT	Tee	Must intersect end vertex of	ssGravityMain_LINE	NA	Fitting - Tee splits Gravity main
ssFitting_POINT	Wye	Must intersect end vertex of	ssGravityMain_LINE	NA	Fitting - Wye splits Gravity Main
ssGravityMain_LINE	NA	End vertices must intersect	ssCatchBasin_POINT	NA	Gravity Main is split by Catch Basin or has Catch Basin at upstream endpoint
ssGravityMain_LINE	NA	End vertices must intersect	ssDischarge_POINT	NA	Gravity Main is has Discharge Point as downstream endpoint
ssGravityMain_LINE	NA	End vertices must intersect	ssFitting_POINT	Bend	Gravity Main is not split by Fitting - Bend
ssGravityMain_LINE	NA	End vertices must intersect	ssFitting_POINT	Cap	Gravity Main has Fitting - Cap at endpoint
ssGravityMain_LINE	NA	End vertices must intersect	ssFitting_POINT	Coupling	Gravity Main is split by Fitting - Coupling
ssGravityMain_LINE	NA	End vertices must intersect	ssFitting_POINT	Cross	Gravity Main is split by Fitting - Cross
ssGravityMain_LINE	NA	End vertices must intersect	ssFitting_POINT	Flared End Section	Gravity Main is has Fitting - Flared end section (FES) as downstream endpoint
ssGravityMain_LINE	NA	End vertices must intersect	ssFitting_POINT	Reducer	Gravity Main is split by Fitting - Reducer
ssGravityMain_LINE	NA	End vertices must intersect	ssFitting_POINT	Tap	Gravity Main is not split by Fitting - Tap
ssGravityMain_LINE	NA	End vertices must intersect	ssFitting_POINT	Tee	Gravity Main is split by Fitting - Tee
ssGravityMain_LINE	NA	End vertices must intersect	ssFitting_POINT	Wye	Gravity Main is split by Fitting - Wye
ssGravityMain_LINE	NA	End vertices must intersect	ssInlet_POINT	NA	Gravity Main is split by Inlet or has Inlet at upstream endpoint
ssGravityMain_LINE	NA	End vertices must intersect	ssManhole_POINT	NA	Gravity Main is split by Manhole or has Manhole at upstream endpoint
ssGravityMain_LINE	NA	End vertices must intersect	ssPump_POINT	NA	Gravity Main has Pump at downstream endpoint
ssInlet_POINT	NA	Must intersect end vertex of	ssGravityMain_LINE	NA	Inlet splits Gravity Main or resides at upstream endpoint of Gravity Main
ssLateralLine_LINE (Private side)	Domestic	End vertices must intersect	ssCleanOut_POINT	NA	Private side Lateral Line has Cleanout at downstream endpoint
ssLateralLine_LINE (Private side)	Domestic	End vertices must intersect	TerminationPoint	NA	Private side Lateral Line has Termination Point at upstream endpoint
ssLateralLine_LINE (Public side)	Domestic	End vertices must intersect	ssCleanOut_POINT	NA	Public side Lateral Line has Cleanout at upstream endpoint
ssLateralLine_LINE (Public side)	Domestic	End vertices must intersect	ssFitting_POINT	Tap	Public side Lateral Line has Fitting - Tap at downstream endpoint
ssManhole_POINT	NA	Must intersect end vertex of	ssGravityMain_LINE	NA	Manhole splits Gravity Main or resides at upstream endpoint of Gravity Main
ssPressurizedMain_LINE	NA	End vertices must intersect	ssPump_POINT	NA	Force Main has Pump at upstream endpoint
ssPump_POINT	NA	Must intersect end vertex of	ssGravityMain_LINE	NA	Pump resides at downstream endpoint of Gravity Main
ssPump_POINT	NA	Must intersect end vertex of	ssPressurizedMain_LINE	NA	Pump resides at upstream endpoint of Force Main

MGP Utility Model Standards

Sewer Geometry Matrix

	ssCatchBasin_POINT	ssDischarge_POINT	ssFitting_POINT - Bend	ssFitting_POINT - Cap	ssFitting_POINT - Coupling	ssFitting_POINT - Cross	ssFitting_POINT - Flared End Section	ssFitting_POINT - Reducer	ssFitting_POINT - Tap	ssFitting_POINT - Tee	ssFitting_POINT - Wye	ssGravityMain_LINE	ssInlet_POINT	ssLateralLine_LINE (Private side)	ssLateralLine_LINE (Public side)	ssManhole_POINT	ssPressurizedMain_LINE	ssPump_POINT	ssCleanout_POINT	ssOpenConveyanceChannel_LINE
ssCatchBasin_POINT	X	X	X	X	X	X	X	X	X	X	S	X	X	X	X	X	X	X	X	X
ssDischarge_POINT	X	X	X	X	X	X	INT	X	X	X	X	EP	X	X	X	X	X	X	X	EP
ssFitting_POINT - Bend	X	X	X	X	X	X	X	X	X	X	NS	X	X	X	X	NS	X	X	X	X
ssFitting_POINT - Cap	X	X	X	X	X	X	X	X	X	X	S	X	X	X	X	S	X	X	X	X
ssFitting_POINT - Coupling	X	X	X	X	X	X	X	X	X	X	S	X	X	X	X	S	X	X	X	X
ssFitting_POINT - Cross	X	X	X	X	X	X	X	X	X	X	S	X	X	X	X	X	X	X	X	X
ssFitting_POINT - Flared End Section	X	INT	X	X	X	X	X	X	X	X	EP	X	X	X	X	X	X	X	EP	
ssFitting_POINT - Reducer	X	X	X	X	X	X	X	X	X	X	S	X	X	X	X	S	X	X	X	X
ssFitting_POINT - Tap	X	X	X	X	X	X	X	X	X	X	NS	X	X	NS	X	X	X	X	X	X
ssFitting_POINT - Tee	X	X	X	X	X	X	X	X	X	X	S	X	X	X	X	S	X	X	X	X
ssFitting_POINT - Wye	X	X	X	X	X	X	X	X	X	X	S	X	X	X	X	S	X	X	X	X
ssGravityMain_LINE	S	S	NS	S	S	S	S	NS	S	S	X	S	X	NS	S	EP	EP	X	EP	
ssInlet_POINT	X	X	X	X	X	X	X	X	X	X	S	X	X	X	X	X	X	X	X	X
ssLateralLine_LINE (Private side)	X	X	X	X	X	X	X	X	X	X	X	X	X	NS	X	X	X	EP	X	
ssLateralLine_LINE (Public side)	X	X	X	X	X	X	X	EP	X	X	NS	X	EP	X	X	X	X	EP	X	
ssManhole_POINT	X	X	X	X	X	X	X	X	X	X	S	X	X	X	X	X	X	X	X	X
ssPressurizedMain_LINE	X	X	NS	S	S	X	X	S	X	S	EP	X	X	X	X	X	EP	X	X	
ssPump_POINT	X	X	X	X	X	X	X	X	X	X	S	X	X	X	X	EP	X	X	X	X
ssCleanout_POINT	X	X	X	X	X	X	X	X	X	X	X	X	EP	EP	X	X	X	X	X	X
ssOpenConveyanceChannel_LINE	X	EP	X	X	X	X	EP	X	X	X	EP	X	X	X	X	X	X	X	X	X

INT - Intersects
 NS - Does not split
 S - Splits
 EP - End point

MGP Utility Model Standards

Sewer Required Fields

Feature Class	Required Field
SSCATCHBASIN_POINT	INSTALLDATE
SSCATCHBASIN_POINT	LIFECYCLESTATUS
SSCATCHBASIN_POINT	OWNERSHIP
SSCATCHBASIN_POINT	WATERTYPE
SSCLEANOUT_POINT	INSTALLDATE
SSCLEANOUT_POINT	LIFECYCLESTATUS
SSCLEANOUT_POINT	OWNERSHIP
SSCLEANOUT_POINT	SUBTYPE
SSCLEANOUT_POINT	WATERTYPE
SSDISCHARGEPOINT_POINT	DIAMETER
SSDISCHARGEPOINT_POINT	INSTALLDATE
SSDISCHARGEPOINT_POINT	LIFECYCLESTATUS
SSDISCHARGEPOINT_POINT	OWNERSHIP
SSDISCHARGEPOINT_POINT	WATERTYPE
SSGRAVITYMAIN_LINE	INSTALLDATE
SSGRAVITYMAIN_LINE	LIFECYCLESTATUS
SSGRAVITYMAIN_LINE	MATERIAL
SSGRAVITYMAIN_LINE	MEASUREMENT1
SSGRAVITYMAIN_LINE	OWNERSHIP
SSGRAVITYMAIN_LINE	SUBTYPE
SSGRAVITYMAIN_LINE	WATERTYPE
SSINLET_POINT	INSTALLDATE
SSINLET_POINT	LIFECYCLESTATUS
SSINLET_POINT	OWNERSHIP
SSINLET_POINT	WATERTYPE
SSLATERALLINE_LINE	DIAMETER
SSLATERALLINE_LINE	INSTALLDATE
SSLATERALLINE_LINE	LIFECYCLESTATUS
SSLATERALLINE_LINE	MATERIAL
SSLATERALLINE_LINE	OWNERSHIP
SSLATERALLINE_LINE	SUBTYPE
SSLATERALLINE_LINE	WATERTYPE
SSMANHOLE_POINT	INSTALLDATE
SSMANHOLE_POINT	LIFECYCLESTATUS
SSMANHOLE_POINT	OWNERSHIP
SSMANHOLE_POINT	WATERTYPE
SSPRESSURIZEDMAIN_LINE	DIAMETER
SSPRESSURIZEDMAIN_LINE	INSTALLDATE
SSPRESSURIZEDMAIN_LINE	LIFECYCLESTATUS
SSPRESSURIZEDMAIN_LINE	MATERIAL
SSPRESSURIZEDMAIN_LINE	OWNERSHIP
SSPRESSURIZEDMAIN_LINE	SUBTYPE
SSPRESSURIZEDMAIN_LINE	WATERTYPE