table name	attribute	type	mandatory	default	unit	comment
v2_1d_boundary_condtions						Boundary condition for 1D connection nodes. Boundaries can only be placed on nodes connected to a single channel or pipe.
	id	serial	*			Leave blank. Is filled automatically.
	boundary_type	integer	*		1: m above datum 2: m/s 3: m3/s	Boundary type. 1: waterlevelbnd 2: velocitybnd 3: discharge boundary For types 2 and 3 the channel direction determines sign of the input value. If the boundary is placed on the channel endpoint, positive values mean water is being extracted from the model.
	connection_node_id	integer	*			Unique connection node id.
	timeseries	text	*		min,value min,value	Format: min,value min,value Between time succesive lines values are interpolated. (note that during 1 timestep the values is still constant) - Leave no trailing spaces or empty rows at the end of your file. - Make sure there is no space between min,value - In case of multiple boundaries in 1 model: make sure they all have the same number of timeseries rows with exactly the same temporal interval. - In case of multiple boundaries in 1 model: also start- and end time of all timeseries must be the same. - In QGIS it is not posible to directly type enter/newline characters into a table. To enter this format into spatialite you must either use a text editor to compose your timeseries through the field calculator using '\n' to add a new line.
v2_1d_lateral						Lateral for 1D connection nodes
	id	serial	*			Leave blank. Is filled automatically.
	connection_node_id	integer	*			Unique connection node id.
	timeseries	text	*		min,m3/s	Format: min,value min,value Between time succesive lines values are interpolated. (note that during 1 timestep the values is still constant) - Leave no trailing spaces or empty rows at the end of your file. - Make sure there is no space between min,value - In case of multiple laterals in 1 model: make sure they all have the same number of timeseries rows with exactly the same temporal interval. - In case of multiple laterals in 1 model: also start- and end time of all timeseries must be the same. - In QGIS it is not posible to directly type enter/newline characters into a table. To enter this format into spatialite you must either use a text editor to compose your timeseries through the field calculator using '\n' to add a new line.
v2_2d_boundary_conditions						Boundary condition for 2D model edge (must be on edge of DEM file)
	id	serial	*		-	Leave blank. Is filled automatically.
	boundary_type	integer	*		1: m above datum 2: m/s 3: m3/s 5: -	1: waterlevelbnd 2: velocitybnd 3: discharge boundary 5: Sommerfeld rand (waterlevel slope) schematisation requirements: - the boundary linestring must be placed on the edge of the DEM (outer calculation cells) - the boundary linestring must intersect at least two calculation cells - the complete boundary Linestring must be on on active edge (read: on data pixels). If (a part of) the boundary is on nodata pixels then the boundarie is ignored - the boundary linestring may be slightly skewed (maximum 6 pixels skewed) - the boundary also looks at the cross section area at the outside of the model (so the outer pixels at the dem) whether flow is possible
	display_name	text	*			Name field, no constraints
	timeseries	text	*		min,value min,value	Format: min,value min,value Between time succesive lines values are interpolated. (note that during 1 timestep the values is still constant) - Leave no trailing spaces or empty rows at the end of your file. - Make sure there is no space between min,value - In case of multiple boundaries in 1 model: make sure they all have the same number of timeseries rows with exactly the same temporal interval. - In case of multiple boundaries in 1 model: also start- and end time of all timeseries must be the same. - In QGIS it is not posible to directly type enter/newline characters into a table. To enter this format into spatialite you must either use a text editor to compose your timeseries through the field calculator using '\n' to add a new line.
v2_2d_lateral						Lateral discharge for location on 2D
	id	serial	*			Leave blank. Is filled automatically.

	discharge	double	*		min, m3/s	"Format: min,value min,value Between time succesive lines values are interpolated. (note that during 1 timestep the values is still constant) - Leave no trailing spaces or empty rows at the end of your file. - Make sure there is no space between min,value - In case of multiple laterals in 1 model: make sure they all have the same number of timeseries rows with exactly the same temporal interval. - In case of multiple laterals in 1 model: also start- and end time of all timeseries must be the same. - In QGIS it is not posible to directly type enter/newline characters into a table. To enter this format into spatialite you must either use a text editor to compose your timeseries through the field calculator using '\n' to add a new line. - The horizontal lines should be defined from west to east - The vertical lines should be defined from south to north
	type	integer	*			1: surface
v2_aggregation_settings						Settings for aggretation that are found in the flow_aggregate.nc
	id					Leave blank. Is filled automatically.
	aggregation_in_space	boolean	*	FALSE	-	not yet implemented.
	aggregation_method	char(10)	*		-	Method of aggretation, choose from: avg, min, max, cum, med, cum_negative, cum_positive
	flow_variable	char(100)			-	The name of output variable that is aggregated. Possible flow variables: discharge flow_velocity infiltration pump_discharge rain waterlevel wet_cross-section wet_surface lateral_discharge
	global_settings	integer				v2_global_settings scenario id. If not set, the aggregation rule is applied to all models in global_settings. if set, the aggregation rule is only applied to that specific model.
	timestep	integer	*		s	Timestep size for aggregation.
	var_name	char(100)	*		-	Mandatory Name field for flow variable name.
v2_channel						Channel lines between connection nodes. All channels must have at least one cross_section_location.
	id	serial	*			Leave blank. Is filled automatically.
	calculation_type	integer	*			100 = embedded channel 101 = stand-alone channel 102 = connected channel 105 = double connected channel Embedded or connected can only be used where a DEM is present. Any start-, end- or calculation node along a channel with these types may not lay outside the DEM.
	code	text	*			Name field, no constraints
	connection_node_end_id	integer	*			End node for channel line. Must be present in v2_connection_nodes and the channel geometry endpoint must be snappen on the given connection node.
	connection_node_start_id	integer	*			Start node for channel line. Must be present in v2_connection_nodes and the channel geometry startpoint must be snappen on the given connection node.
	display_name	text	*			Name field, no constraints
	dist_calc_points	double	*		m	Distance between calculation points on linesegments.
	zoom_category	integer				Visibility in live site. - 1 is lowest for smallest level (i.e. ditch) and 5 for highest (rivers)
v2_connection_nodes						Location and ID of nodes between channels, pipes and structures. Make sure that: i) When removing a node or changing its ID, make sure the node is not referred to in any of the other tables, ii) When moving a node, make sure to also move any channels and culverts that are snapped to the node, iii) make sure no node is left without any connection, and iv) make sure that every node is connected to either a channel or is used as a manhole (otherwise the calculation type is unknown).
	id	serial	*			Leave blank. Is filled automatically.
	initial_waterlevel	double			m above datum (NL: NAP)	Initial water level at connection node. Initial waterlevel is interpolated across channel calculation nodes.
	storage_area				m2	Storage area for manhole in sewerage calculations. If a manhole is present on a connection node the storage area must be larger than zero. Storage area can also be added to a connection node without the use of a manhole. Nodes that are not connected to channels (for instance when betwee 2 culverts) require a storage area larger than zero, for others storage area is derived from the channel cross section, reference level and calculation distance.
v2_cross_section_definition						Table of cross-section definitions
	id	serial	*		-	Leave blank. Is filled automatically.
	code	text	*			Name field, no constraints

	height	text	**		m	For tabulated fill in space-separated heights of profile. All height values must be larger than zero, except for the first value **Mandatory for types 3, 5 & 6.
	shape	integer	*			1 = rectangle; specify width and height (profile/upper side is automatically closed) 2 = circle; specify width (profile/upper side is automatically closed) 3 = egg; specify space-sperated width and height intervals. Between intervals the profile is interpolated. Can be closed by stating width 0 at heighest heigth 5 = tabulated rectangle; specify space-seperated width and height intervals. Between intervals the profile is defined straight. Can be closed by stating width 0 at heighest heigth 6 = tabulated trapezium; specify space-sperated width and height intervals. Between intervals the profile is interpolated. Can be closed by stating width 0 at heighest heigth
	width	text	*		-	For tabulated fill in space-separated widths of profile. Fill in diameter for circle.
v2_cross_section_location						Location of cross-section for channels. All cross-section locations must be snapped to a channel vertex. May not be placed on or within 1 cm within start- or endnode.
	id	serial	*			Leave blank. Is filled automatically.
	bank_level	double	**		m above datum (NL: NAP)	For connected channels only. Reference level for exchange between 1D and 2D. ** Mandatory when channel type is 102.
	channel_id	integer	*			Reference to v2_channel id. Channel id must match the channel on which the location lies.
	code	text	*			Name field, no constraints
	definition_id	integer	*			Reference to v2_cross_section_definition id. Must be present in v2_cross-section_definition table.
	friction_type	integer	*			1 = Chezy 2 = Manning
	friction_value	double	*		1: m1/2/s 2: s/m1/3	Friction or roughness value for profile
	reference_level	double	*		m above datum (NL: NAP)	Reference level or bottom level for profile.
v2_culvert						Table of culverts, connection between connection nodes
	id	serial	*			Leave blank. Is filled automatically.
	calculation_type	integer	*	101		100 = embedded channel 101 = stand-alone channel 102 = connected channel 105 = double connected channel Embedded or connected can only be used where a DEM is present. Any start-, end- or calculation node along a channel with these types may not lay outside the DEM.
	code	text	*			Name field, no constraints
	connection_node_end_id	integer	*			End node for culvert line. Must be present in v2_connection_nodes and the culvert geometry endpoint must be snappen on the given connection node.
	connection_node_start_id	integer	*			Start node for culvert line. Must be present in v2_connection_nodes and the culvert geometry startpoint must be snappen on the given connection node.
	cross_section_definition_id	integer	*			Reference to v2_cross_section_definition id. Must be present in v2_cross-section_definition table.
	discharge_coefficient_negative	*double*				*Not yet implemented.*
	discharge_coefficient_positive	*double*				*Not yet implemented.*
	display_name	text	*			Name field, no constraints
	dist_calc_points	double	*		m	Distance between calculation points on linesegments.
	friction_type	integer	*			Friction type 1 = Chezy 2 = Manning
	friction_value	double	*		1: m1/2/s 2: s/m1/3	Friction or roughness value for profile
	invert_level_end_point	double	*		m above datum (NL: NAP)	Invert level at culvert endpoint. Must be equal or above ajoining manhole or channel bottom/reference level.
	invert_level_start_point	double	*		m above datum (NL: NAP)	Invert level at culvert startpoint. Must be equal or above ajoining manhole or channel bottom/reference level.
	zoom_category	integer				Visibility in live site. - 1 is lowest for smallest level (i.e. ditch) and 5 for highest (rivers)
v2_global_settings						Global settings
	id	serial	*			Leave blank. Is filled automatically.
	advection_1d	integer	*	0/1		Use advection in 1D, other schemes 2-6 are in experimental phase
	advection_2d	integer	*	0/1		Use advection in 2D.
	control_group_id	integer				Reference to id that contains control settings for this scenario.
	dem_file	text	*	raster/yourfile.tif	m above datum (NL: NAP)	Relative path to dem file (.tif)
	dem_obstacle_detection	boolean	*		-	Automatically detect obstacles based on DEM-file. Works only in combination with dem_obstacle_height (has no relation with v2_obstacle)

	dem_obstacle_height	double	**		m	Relative height (above lowest pixel of calc cell) for obstacle detection. ** Mandatory when using dem obstacle detection.
	dist_calc_points	double			m	Global distance between calculation points for line elements.
	embedded_cutoff_threshold	double		0.05	factor [0 - 1]	Relative length of cell size. When embedded channel intersects 2D grid size over length shorter than the cellsize * cutoff threshold, the embedded channel skips this 2D cell. Usefull for preventing very short embedded channel segments (which slow down your model).
	epsg_code	integer	*		m	Define map projection for study area. Much match raster projection.
	flooding_threshold	double	*	>=0.0	m	Water depth threshold for flow between 2D cells. Depth relative to lowest bathymetry pixel at the edge between two 2D cell.
	frict_avg	integer	*	0	-	The roughness coefficient will be averaged within one cell.
	frict_coef	double	*		1:[m1/2/s], 2: [s/m1/3]	Constant friction coefficient for 2D.
	frict_coef_file	text		raster/yourfile.tif	1:[m1/2/s], 2: [s/m1/3]	Relative path to friction file (.tif)
	frict_type	integer				1: Chezy 2: Manning
	grid_space	double	*		m	Size of smallest grid cell in quadtree, k=1. Must be a multitude of the raster pixel size.
	groundwater_settings_id	integer				Reference to id that contains groundwater settings for this scenario.
	guess_dams					IS NOT IMPLEMENTED
	initial_groundwater_level	double			m above datum (NL: NAP)	
	initial_groundwater_level_file	text		raster/yourfile.tif	m above datum (NL: NAP)	
	initial_groundwater_level_type	integer	**			
	initial_waterlevel	double	*		m above datum (NL: NAP)	Global initial water level.
	initial_waterlevel_file	text		raster/yourfile.tif	m above datum (NL: NAP)	Relative path to initial water level file (.tif)
	interflow_settings_id	integer				Reference to id that contains interflow settings for this scenario.
	kmax	integer	*			Maximum multitude of smallest grid size in quadtree starting from grid_space at k=1. Grid size increases according to 2^(k-1) * grid_space.
	manhole_storage_area	double	**		m2	Default manhole storage area. **Mandatory when using only 1d flow (no dem) manhole area must be larger than 0 (and an INTEGER) Must be NULL when using only 2d.
	max_angle_1d_advection	double			degrees [0-90]	Maximum angle at which advection is considered.
	max_interception					IS NOT IMPLEMENTED
	max_interception_file					IS NOT IMPLEMENTED
	maximum_sim_time_step	double	**		s	Maximum timestep during simulation. ** Mandatory when using timestep plus.
	minimum_sim_time_step	double			s	Minimum timestep during smulation.
	name	text	*			Names must be unique globally. Do not use spaces or capitals. Keep names shorter than 10 characters. Don't use same name as sqlite name.
	nr_timesteps	integer	*			Maximum nr of timesteps. This value is not used in the web portal.
	numerical_settings_id	integer				Reference to id that contains numerical settings for this scenario.
	output_time_step	double	*		s	Timestep written in output file
	sim_time_step	double	*		s	Simulation time step
	simple_infiltration_settings_id	integer				Reference to id that contains settings for simple infiltration for this scenario.
	start_date	date	*			Format: 2017-01-01
	start_time	timestamp with time zone	*			Starttime of simulation. Format: 00:00:00 (LM: volgens mij mag dit format niet en moet het zoiets zijn: 2014-01-01 00:00:00)
	table_step_size	double	*		m	User-defined table stepsize/increment (m). Use 0.01 for detailed simulation or larger stepsize to speed up exploring model schematisation.
	table_step_size_1d	double		table_step_size	m	User-defined table stepsize/increment (m) for 1d cross-sections and volumes. default value = table_step_size
	table_step_size_volume_2d	double		table_step_size	m	User-defined table stepsize/increment (m) for defining 2D volumes. Can increase speed when this is set larger than table_step_size. default value = table_step_size
	timestep_plus	boolean	*		-	Allow switching to larger timestep when simulation is steady.
	use_0d_inflow	integer	*			Include 0D inflow (NWRW/impervious surfaces) in simulation. 0 do not use 0d inflow 1 use v2_impervious_surface 2 use v2_surface
	use_1d_flow	boolean	*			Include 1D flow in simulation. When using only 1D flow, manhole_storage_area must be larger than zero.

	use_2d_flow	boolean	*			Include 2D flow in simulation. When using only 2D flow, set manhole_storage_area to NULL.
	use_2d_rain	boolean	*			Use rainfall via 2D surface for this scenario
	water_level_ini_type	integer	**			0=max, 1=min, 2=avg **Mandatory when using initial water level file.
	wind_shielding_file	text				
v2_groundwater						***do not use in combination with simple_infiltration***
	id	serial	*			Leave blank. Is filled automatically.
	display_name	text	*			Name field, no constraints
	equilibrium_infiltration_rate	double	*		mm/day	
	equilibrium_infiltration_rate_file	text		raster/yourfile.tif	mm/day	
	equilibrium_infiltration_rate_type	integer	**			0=max, 1=min, 2=avg **Mandatory when using equilibrium infiltration file.
	groundwater_hydro_connectivity	double	*		m/day	
	groundwater_hydro_connectivity_file	text		raster/yourfile.tif	m/day	
	groundwater_hydro_connectivity_type	integer	**		-	0=max, 1=min, 2=avg **Mandatory when using groundwater_hydro_connectivity_file
	groundwater_impervious_layer_level	double	*		m tov NAP	
	groundwater_impervious_layer_level_file	text		raster/yourfile.tif	m tov NAP	
	groundwater_impervious_layer_level_type	integer	**			0=max, 1=min, 2=avg **Mandatory when using groundwater_impervious_layer_level_file.
	infiltration_decay_period	double	*		days	
	infiltration_decay_period_file	text		raster/yourfile.tif	days	
	infiltration_decay_period_type	integer	**			0=max, 1=min, 2=avg **Mandatory when using infiltration_decay_period _file.
	initial_infiltration_rate	double	*		mm/day	
	initial_infiltration_rate_file	text		raster/yourfile.tif	mm/day	
	initial_infiltration_rate_type	integer	**			0=max, 1=min, 2=avg **Mandatory when using initial infiltration file.
	leakage	double	*		mm/d	positive is adding water to the domain, negative is extracting water from the domain.
	leakage_file	text		raster/yourfile.tif	mm/d	positive is adding water to the domain, negative is extracting water from the domain.
	phreatic_storage_capacity	double	*	>0	-	
	phreatic_storage_capacity_file	text		raster/yourfile.tif	-	
	phreatic_storage_capacity_type	integer	**		-	0=max, 1=min, 2=avg **Mandatory when using phreatic_storage_capacity_file.
v2_interflow						
	id	serial	*		-	Leave blank. Is filled automatically.
	display_name	text	*		-	Name field, no constraints
	hydraulic_conductivity	double	**		m/day	Global hydraulic conductivity (Darcy) **When interflow_type > 0 then hydraulic_conductivity OR hydraulic_conductivity_file is mandatory
	hydraulic_conductivity_file	text		raster/yourfile.tif	m/day	Relative path to hydraulic conductivity path (.tif) **When interflow_type > 0 then hydraulic_conductivity OR hydraulic_conductivity_file is mandatory
	impervious_layer_elevation	double	**	> 0	m	When using interflow: Depth of interflow layer defined below lowest pixel (so always positive). Imaginary bottom of interflow layer. For interflow types 1 and 2 it is ignored for the volume in the interflow layer (but still it must be filled in when using interflow). The volume in these types is determined by the porosity and the porosity layer thickness. For interflow types 3 and 4 it is used to determine the volume in the interflow layer. In all types the waterlevel in the interflow layer starts at this level. It does not influence flow. ** Mandatory when using interflow
	interflow_type	integer	* **	0		Include interflow in simulation. 0: No Interflow 1: define 1 porosity value for model. This porsity will be rescaled per pixel (to lowest pixel per cell), so (interflow) volume is the same for each pixel within 1 cell --> define porosity, hydraulic_conductivity, porosity_layer_thickness and impervious_layer_elevation 2: define 1 porosity value for model. This porsity will be rescaled per pixel (to lowest pixel whole model), so (interflow) volume is the same for each pixel in whole model --> define porosity, hydraulic_conductivity, porosity_layer_thickness and impervious_layer_elevation 3: define 1 porosity value for model. This porsity will not be rescaled, but each pixel in the model has the same porosity. The (interflow) volume for each pixel depends on the impervious_layer_elevation, which is below lowest pixel of cell --> define porosity, hydraulic_conductivity and impervious_layer_elevation 4: define 1 porosity value for model. This porsity will not be rescaled, but each pixel in the model has the same porosity. The (interflow) volume for each pixel depends on the impervious_layer_elevation, which is below lowest pixel of whole model --> define porosity, hydraulic_conductivity and impervious_layer_elevation * NOT NULL ** do not use interflow in combination with limiter_slope_crossectional_area_2d >0 AND/OR limiter_slope_friction_2d>0
	porosity	double	**			Porosity (between 0 and 1) of interflow layer. ** Mandatory when using interflow
	porosity_file	text		raster/yourfile.tif	-	Relative path to porosity file (.tif)

	porosity_layer_thickness	double	**	> 0	m	Thickness of porosity layer relative to DEM. **Mandatory for interflow_type 1 and 2.
v2_numerical_settings						Advanced numerical settings
	id	serial	*		-	Leave blank. Is filled automatically.
	cfl_strictness_factor_1d	double		1	-	Stricktness of CFL condition for 1D.
	cfl_strictness_factor_2d	double		1	-	Stricktness of CFL condition for 2D.
	convergence_cg	double		0.000000001		For numerical computation several tresholds are needed in the code, to avoid deficiencies due to a limited numerical accuracy. Generally this is to keep the behaviour consistent.
	convergence_eps	double	*	0.00001		Minimal residual for convergence of newton iteration.
	flow_direction_threshold	double		0.000001	m/s	For numerical computation several tresholds are needed in the code, to avoid deficiencies due to a limited numerical accuracy. Generally this is to keep the behaviour consistent.
	frict_shallow_water_correction	integer		0	-	In case the friction assumptions based on the dominant friction balance gives a structurally underestimation of the friction, one can switch this setting on. 0 is off, 1 is maximum between averaged friction and divided channel based friction, 2 is always linearized, 3 linearizes the depth based on a weighed averaged. In this case the maximum depth of a thin layer needs to be defined. Do not use in combination with interflow
	general_numerical_threshold	double		0.00000001		For numerical computation several tresholds are needed in the code, to avoid deficiencies due to a limited numerical accuracy. Generally this is to keep the behaviour consistent.
	integration_method	integer	*	0		Time integration method: 0=Euler implicit
	limiter_grad_1d	integer		1		The limiter on the water level gradient allows the model to deal with unrealistically steep gradients.
	limiter_grad_2d	integer		0	-	The limiter on the water level gradient allows the model to deal with unrealistically steep gradients. When field is left empty, it is switched on!!!
	limiter_slope_crossectional_area_2d	integer		0	-	This limiter starts working in case the depth based on the downstream water level is zero and may be useful in sloping areas. 0 is off, and 1 is a limiter which ends in a a higher order scheme, but is sensitive too instabilities, 2, treats the cross-sections as an upwind method volume/surface area under the assumption that the flow acts like a thin layer, 3 makes a combination of the traditional method in combination with the thin layer apporach. In this case the maximum depth of a thin layer needs to be defined. Do not use in combination with interflow
	limiter_slope_friction_2d	integer		0	-	This limiter starts working in case the depth based on the downstream water level is zero and may be useful in sloping areas. 0 is off, and 1 is on. This limiter is obliged in combination with limiter_slope_crossectional_area_2d>0.. l Do not use in combination with interflow
	max_degree	integer	*	see comment		Setting for matrix solver. Values below are adviced for different model types 700 for 1D flow 7 for 1D and 2D flow 5 for 2D flow only
	max_nonlin_iterations	integer	*	20		Maximum number of nonlinear iterations in single time step.
	minimum_friction_velocity	double		0.05	m/s	For numerical computation several tresholds are needed in the code, to avoid deficiencies due to a limited numerical accuracy. Generally this is to keep the behaviour consistent.
	minimum_surface_area	double		0.00000001	m2	For numerical computation several tresholds are needed in the code, to avoid deficiencies due to a limited numerical accuracy. Generally this is to keep the behaviour consistent.
	precon_cg	integer		1	-	Use preconditioner for matrix solver. Increases simulation speed in most cases, Set to 0 or 1 (default).
	preissmann_slot	double		0	m2	A conceptual vertical and narrow slot providing a conceptual free surface condition for the flow when the water level is above the top of a closed conduit. Often used to guarentee stability, in 3Di unnessary unless used for presurized pipe flow. Works only for circular profiles.
	pump_implicit_ratio	double		1		Determines whether pump discharge is always maximum capacity (0) or discharge is limited to available inflow (1). The latter ensures a smooth discharge. Value between 0 and 1.
	thin_water_layer_definition	double	**	0.1	m	** mandatory when using friction shallow water correction option 3 or limiter_slope_crossectional_area_2d on option 3
	use_of_cg	integer	*	20		Number of iteration of conjugate gradient method, before swtiching to another method
	use_of_nested_newton	integer	*	0/1		1 for 1D calculation with closed profiles to handle non-linearity in volume-waterlevel relation. When using 0 nested newton is switch off by default but will be used when calculations become non-linear. For sewerage systems 1 is advised.
v2_grid_refinement						Lines that determine local 2D calculation grid refinement.
	id	serial	*			Leave blank. Is filled automatically.
	display_name	text	*			Name field, no constraints
	refinement_level	integer	*			Local refinement level. Starting from 1. Values above kmax (v2_global_settings) are ignored.
v2_grid_refinement_area						Lines that determine local 2D calculation grid refinement.
	id	serial	*			Leave blank. Is filled automatically.
	display_name	text	*			Name field, no constraints
	refinement_level	integer	*			Local refinement level. Starting from 1. Values above kmax (v2_global_settings) are ignored.
v2_impervious_surface						Definition of 0D-surfaces.
	id	serial	*		-	Leave blank. Is filled automatically.
	area	double precision	*			Cannot be left blank. A value of 0 is allowed.
	code	text	*		-	Code field, no constraints
	display_name	text	*		-	Name field, no constraints
	dry_weather_flow	double			L/day per inhabitant	Dry weather flow per inhabitant.
	nr_of_inhabitants	double			-	Number of inhabitant used for dry wheather flow.
	surface_class	text	*		-	gesloten verharding , open verharding , half verhard , onverhard , pand
	surface_inclination	text	*		-	vlak, hellend, uitgestrekt

	zoom_category	integer			-	Visibility in live site. - 1 is lowest for smallest level (i.e. ditch) and 5 for highest (rivers)
v2_impervious_surface_map						Table that linkes v2_impervious_surfaces to connection node ID's.
	id	serial	*		-	Leave blank. Is filled automatically.
	connection_node_id	integer	*		-	ID of connection node
	impervious_surface_id	integer	*		-	ID of impervious surfce feature
	percentage	integer	*		%	Percentage of impervious surface area places on connection node
v2_levee						Line with fixed crest level that overides DEM- values at calculation cell borders.
	id	serial	*		-	Leave blank. Is filled automatically.
	crest_level	double	*		m above datum (NL: NAP)	Crest level of levee segment.
	material	integer	**		-	** Mandatory when you want to use a levee breach during your calculation Material used for breach growth. 1: sand 2: clay
	max_breach_depth	double	**		m below levee crest_level	** Mandatory when you want to use a levee breach during your calculation Maximum breach depth relative to crest level (thus a positive value must be filled in).
v2_manhole						Sewerage manhole
	id	serial	*		-	Leave blank. Is filled automatically.
	bottom_level	double	*		m above datum (NL: NAP)	Manhole bottom level.
	calculation_type	integer	*		-	Manhole calculation type for 1D-2D connection. 0: embedded 1: isolated 2: connected
	code	text	*		-	Name field, no constraints
	connection_node_id	integer	*		-	ID of connection node on which manhole is placed.
	display_name	text	*		-	Name field, no constraints
	drain_level	double	**		m above datum (NL: NAP)	Manhole drain level (**for connected manholes). If there is a connected manhole without drain level, 3Di will take the top of the pipe from the connection pipes as drain level.
	length	double	**		m	Manhole length **Mandatory when shape = 02
	manhole_indicator	integer	*		-	0: inspection (inspectieput) 1: outlet 2: pump
	shape	text	*		-	00: vierkant 01: rond 02: rechthoek
	surface_level	double	*		m above datum (NL: NAP)	Manhole surface level.
	width	double	*		m	Manhole width or diameter
	zoom_category	integer	*		-	Visibility in live site. - 1 is lowest for smallest level (i.e. ditch) and 5 for highest (rivers)
v2_obstacle						Line with fixed crest level that overides DEM- values at calculation cell borders.
	id	serial	*		-	Leave blank. Is filled automatically.
	crest_level	double	*		m above datum (NL: NAP)	Crest level of obstacle segment
v2_orifice						Structure that can be used for spillways or bridges
	id	serial	*		-	Leave blank. Is filled automatically.
	code	text	*		-	Name field, no constraints
	connection_node_end_id	integer	*		-	End node for orifice. Must be present in v2_connection_nodes
	connection_node_start_id	integer	*		-	Start node for orifice. Must be present in v2_connection_nodes
	crest_level	double	*		m above datum (NL: NAP)	Crest or bottom level. Must be equal or above ajoining manhole or channel bottom/reference level.
	crest_type	integer	*		-	Type of weir formulation. 3: broad crested 4: short crested
	cross_section_definition_id	integer	*		-	ID of cross section definition in v2_cross_section_definition
	discharge_coefficient_negative	double	*	1	-	Discharge coefficient for positive flow (from start to end node). Can be set to 0 when closed.
	discharge_coefficient_positive	double	*	1	-	Discharge coefficient for positive flow (from start to end node). Can be set to 0 when closed.
	display_name	text	*		-	Name field, no constraints

	friction_type	integer	*			Friction Type. 1: Chezy 2: Manning
	friction_value	double	*		1:[m1/2/s], 2: [s/m1/3]	Friction or roughness value for profile
	sewerage	boolean			-	For internal book keeping. Can be used for statistics in QGIS plugin.
	zoom_category	integer	*			Visibility in live site. - 1 is lowest for smallest level (i.e. ditch) and 5 for highest (rivers)
v2_pipe						Table of pipes
	id	serial			-	Leave blank. Is filled automatically.
	calculation_type	integer	*	101		Calculation type for pipe. When start en end connection nodes are manholes only used for calculation points half-way pipe. 0 = embedded 1 = isolated 2 = connected 3 = broad crest 4 = short crest
	code	text			-	Name field, no constraints
	connection_node_end_id	integer				End node for pipe. Must be present in v2_connection_nodes
	connection_node_start_id	integer				Start node for pipe. Must be present in v2_connection_nodes
	cross_section_definition_id	integer	*		-	ID of cross section definition in v2_cross_section_definition
	display_name	text			-	Name field, no constraints
	dist_calc_points	double			m	Distance between calculation points on pipe.
	friction_type	integer	*			Friction type. 1: Chezy 2: Manning
	friction_value	double	*		1:[m1/2/s], 2: [s/m1/3]	Friction or roughness value for profile; friction only accounted for in case of broad crested weir
	invert_level_end_point	double	*		m above datum (NL: NAP)	Invert level at culvert endpoint. Must be equal or above ajoining manhole or channel bottom/reference level.
	invert_level_start_point	double	*		m above datum (NL: NAP)	Invert level at culvert startpoint. Must be equal or above ajoining manhole or channel bottom/reference level.
	material	integer				Material of pipe, used for internal bookkeeping only. 0: concrete 1: pvc 2: gres 3: cast iron 4: brickwork 5: HPE 6: HDPE 7: plate iron 8: steel
	original_length	double			m	For internal use only.
	profile_num	integer				For internal use only.
	sewerage_type	integer			-	Pipe type. 3Di requires the sewerage_type to be one of the following: 0: gemengd - mixed 1: rwa - rain water 2: dwa - dry wheather flow 3: transport 4: overstort - spillway 5: zinker 6: berging - storage 7: bergbezinkbak - storage tank Some organisations use additional codes. This is not allowed in 3Di.
	zoom_category	integer				Visibility in live site. - 1 is lowest for smallest level (i.e. ditch) and 5 for highest (rivers)
v2_pumpstation						List of pumpstations
	id	serial	*			Leave blank. Is filled automatically.
	capacity	double	*		L/s	Pump capacity.
	classification	integer				For internal book keeping.
	code	text	*			Name field, no constraints
	connection_node_end_id	integer				End node for pumpstation. Must be present in v2_connection_nodes. Can be left blanc in which case pump functions as boundary.

	connection_node_start_id	integer				Start node for pumpstation. Must be present in v2_connection_nodes. Can be left blanc in which case pump functions as boundary.
	display_name	text	*			Name field, no constraints
	lower_stop_level	double	*		m above datum (NL: NAP)	Level at pump start or end node at which pump stops pumping. Must be below start level.
	sewerage	boolean	*			For internal book keeping.
	start_level	double	*		m above datum (NL: NAP)	Level at pump start or end node from from which it starts pumping. Must be equal or above ajoining manhole or channel bottom/reference level.
	type	integer	*			Type that determines pump function. 1: pump reacts only on suction side 2: pump reacts only on delivery side
	upper_stop_level	double			m above datum (NL: NAP)	Level at pump start or end node at which pump stops pumping. Must be above start level.
	zoom_category	integer	*			Visibility in live site. - 1 is lowest for smallest level (i.e. ditch) and 5 for highest (rivers)
v2_simple_infitration						***do not use in combination with v2_groundwater***
	id	serial	*			Leave blank. Is filled automatically.
	display_name	text	*			Name field, no constraints
	infiltration_rate	double	*	0	mm/day	Global infiltration rate.
	infiltration_rate_file	text		raster/yourfile.tif	mm/day	Relative path to infiltration file (.tif). Infiltration uses the sum of pixel values per calculation cell in case of rain and sum of wet pixels in case of standing water. Must be NULL (and not "") when not using infiltration otherwise 3di expects infiltration.
	infiltration_surface_option	integer		0		Option that sets how the infiltration works in calculation cells. 0: rain (whole surface when raining, only wet pixels when dry) 1: whole surface (always whole surface) 2: only wet surface (always only wet pixels)
	max_infiltration_capacity_file	text		raster/yourfile.tif	m	Relative path to max infiltration file (.tif). Maximum infiltration uses the sum of pixel values per calculation cell.
v2_surface						
	id	serial	*			Leave blank. Is filled automatically.
	area	double	*		m2	Cannot be left blank. A value of 0 is allowed.
	code	text	*			Name field, no constraints
	display_name	text	*			Name field, no constraints
	dry_weather_flow	double			L/day per inhabitant	Dry weather flow per inhabitant.
	function	text				LM: I think this is for your own administration. You can fill in for instance: dak vlak, dak hellend
	nr_of_inhabitants	double			-	Number of inhabitant used for dry wheather flow.
	surface_parameters_id	integer	*			Reference to v2_surface_parameters. The id filled in here must be present in this (v2_surface_parameters) table
	zoom_category	integer	*			Visibility in live site. - 1 is lowest for smallest level (i.e. ditch) and 5 for highest (rivers)
v2_surface_map						
	id	serial	*		-	Leave blank. Is filled automatically.
	connection_node_id	integer	*		-	ID of connection_node. Connecting the surface area from v2_surface to an connection_node
	percentage	double	*		%	percentage of area to the connection_node
	surface_id	integer	*		-	ID of surface feature
	surface_type	text	*		-	choice to use the 'v2_surface' or 'v2_impervious_surface'
v2_surface_parameters	For more information on these parameters see: Leidraad riolering C2100 page: 51					
	id	serial	*		-	Leave blank. Is filled automatically.
	infiltration	boolean	*			False or True
	infiltration_decay_constant	double	*		/h	time factor decay infiltration capacity of the surface
	infiltration_recovery_constant	double	*		/h	time factor recovery infiltration capacity of the surface
	max_infiltration_capacity	double	*		mm/h	Maximum ifiltration capacity of the surface
	min_infiltration_capacity	double	*		mm/h	Minimum ifiltration capacity of the surface
	outflow_delay	double	*		/min	delay of outflow
	surface_layer_thickness	double	*		mm	mm storage on the surface
v2_weir						List of weirs
	id	serial	*		-	Leave blank. Is filled automatically.
	code	text	*		-	Name field, no constraints
	connection_node_end_id	integer				End node for weir. Must be present in v2_connection_nodes and on channel end node
	connection_node_start_id	integer				Start node for weir. Must be present in v2_connection_nodes and on channel start node

	crest_level	double	*		m above datum (NL: NAP)	Crest level. Must be equal or above ajoining manhole or channel bottom/reference level.
	crest_type	integer	*		-	Type of weir formulation. 3: broad crested 4: short crested
	cross_section_definition_id	integer	*		-	ID of cross section definition in v2_cross_section_definition
	discharge_coefficient_negative	double	*		-	Discharge coefficient for positive flow (from start to end node).
	discharge_coefficient_positive	double	*		-	Discharge coefficient for positive flow (from start to end node).
	display_name	text	*		-	Name field, no constraints
	external	boolean				For internal book keeping
	friction_type	integer	*			Friction type. 1: Chezy 2: Manning
	friction_value	double	*		1:[m1/2/s], 2: [s/m1/3]	Friction or roughness value for profile; friction only accounted for in case of broad crested weir
	sewerage	boolean				For internal book keeping, 0 (false) or 1 (true)
	zoom category	integer				Visibility in live site. - 1 is lowest for smallest level (i.e. ditch) and 5 for highest (rivers)
v2_wind						Settings for wind external forcing.
	id	serial				Leave blank. Is filled automatically.
	drag_coeffictient	double		0.005	-	Wind drag coeficient.
	time	integer			s	Point in time from start of simulation
	winddirection	double			degrees	Wind direction based on North Azimuth
	windspeed	double			m/s	Wind speed
v2_windshielding						List of drag coefficients for 1D channels. (does not work on 2D)
	id					Leave blank. Is filled automatically.
	...	doube				...
	channel_id	integer				Reference to v2_channel id.
	north	double		1	-	windshielding coefficient for direction north (0 degrees)
	nothwest	double		1	-	windshielding coefficient for direction northwest (0 degrees)