

San Juan Basin Hydrology Model and Rules Naming Conventions

June 29, 2004

A naming convention for the San Juan basin hydrology models and rules has been implemented that facilitates documentation, tracking, and evolution of the models and rules. Collectively, these models are described as the San Juan Basin Hydrology Model (the Model). These models were developed to support water management decisions in the San Juan River basin. In particular, the Model has been used to support the San Juan Recovery Implementation Program (SJRIP). The naming convention tells a user the RiverWare version, the model version and type, and the rules version. A model and inventory file provides a listing of models and rulesets, their creation date, and a link to documentation. The primary documentation is a log file that includes explanation of incremental changes from model to model and from ruleset to ruleset of the primary models and rulesets. This may also include links to more extensive documentation.

Any change in configuration or major data modifications is considered a model change. RiverWare automatically saves the version of RiverWare in the header of a model or ruleset. Therefore, official model names and rulesets will not include the RiverWare version in the naming convention. However, the log file will document the RiverWare version. Recall that RiverWare models and rulesets are saved in individual text files.

Three generations of the San Juan Basin Hydrology Model exist which are:

1. First generation - Rules used TCL using Patch 6 (pre license) version of RiverWare with ALP expressed as gains and losses.
2. Second generation – ALP was implemented as an operating project. Until relatively lately, rulesets were predominately RPL (RiverWare Policy Language) with some legacy TCL code still used for flushing hydrograph computations. This generation used a licensed version of RiverWare. The flushing release computations were converted to use entirely RPL in 12/2000.
3. Third generation - These are models and rulesets configured to use CDSS StateMod naturalized flows and revised operating criteria. They consist of monthly and daily models.

The naming convention provides recognition of SJRIP model and ruleset development. The naming convention also provides identification of significant incremental modifications between major modifications as well as smaller incremental changes. Scenario model runs (specific runs of a model and ruleset) will be maintained in a separate tabulation. Model type is a general description of the usage of a model. The following model types and identifiers are being used:

1. Natural flow model (NF) – A model that computes naturalized flows.
2. Gains model (GM) – A model that only has hydrologic nodes used to compute gains.
3. Validation model (VAL) – A model that runs without rules to validate that data water is properly conveyed through model.
4. Calibration model (CAL) – A model that runs with rules under historic operating criteria to verify that the performance of operating criteria.
5. Migration model (MIG) – A model that moves data between two models to facilitate disaggregation and data conversions.
6. Baseline model (BL) – A model that runs with rules under specified operating criteria and baseline depletions to study alternative operating criteria and baseline impacts.
7. Bridge model (BR) – A model used to bridge between model generations.

A “D” prefix is used to indicate a daily time-step model.

The following nomenclature has been implemented for the naming convention:

Basin - Identifier that tells the watershed of the model such as SJ.

Type - Identifier that tells the type of the model.

Qualifier - Optional field that specifies special subtypes or scenarios.

Model or ruleset version - version number that corresponds to a specific configuration, data set, scenario, and generation as version number.

File type - Identifies if a model or ruleset as Model or RuleSet

Underscores should be used to separate basin and type from version numbers. Decimals will be used to separate sub-versions. The Qualifier attribute will not be used for models and rulesets that use the primary configuration. It will be used to qualify special models configurations and rulesets and scenario model runs. All RiverWare models are compressed with "gnu" compression software and have a ".gz" extension. First and second generation RuleSets are ASCII (text) files and use a ".RuleSet" extension. Third generation RuleSets are compressed and use a ".RuleSet.gz" extension. The following are examples:

Model name examples:

SJ_BL_1.12.0.gz

SJ_CAL_1.0.2.gz

SJ_BL_2.1.1.gz

SJ_BL_NavajoGallup_2.1.1.gz

SJ_CAL_1.0.3.gz

SJ_VAL_3.0.1.gz

SJ_DBL_3.1.1.gz

RuleSet name examples:

SJ_BL_1.12.0.RuleSet

SJ_CAL_1.0.2.RuleSet

SJ_BL_2.1.1.RuleSet

SJ_BL_NavajoGallup_2.1.1.RuleSet

SJ_CAL_1.0.3.RuleSet.gz

SJ_VAL_3.0.1.RuleSet.gz

SJ_DBL_3.0.1.RuleSet.gz

Model and ruleset names will be kept consistent. If a ruleset modification is made without an equivalent model change, the previous version of the model will be used. The first generation rules (TCL) are linked to a compressed 'tar' file because the rulesets consist of numerous individual TCL files in multiple subdirectories. The naming convention was applied to the compressed 'tar' file with a "tar.gz." extension instead of 'RuleSet'.

The inventory file will be structured something like:

Date	Model	RuleSet	Description	Runs
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The above conventions will be used for official models and rulesets. The inventory file will not contain scenario model runs but will provide links to scenario model runs. First and second generation scenario model runs will not be renamed. Development staff can use whatever name is convenient during development but the above conventions will be used when models and rulesets are made publicly available.