# Transmittal of GMD5 model files [file GMD5\_base\_case\_baseline\_notes\_2015Sep02.docx]

Transmitted files include:

GMD5\_base\_case\_baseline\_notes\_2015Sep02.docx [this file]

GMD5\_ML.zip (175 Mbytes): Original multilayer model developed by Balleau GW.

GMD5\_1L.zip (427 Mb): single-layer model version by Steve Larson, SSPA, GMD5 model reviewer.

RS\_wells\_baseline\_bgw.Lst\_1L.zip (235 Mb): one-layer model future baseline list output

RS\_wells\_baseline\_bgw.Sbd\_1L.zip (368 Mb): one-layer model future baseline SFR package output

Reports: folder containing GMD5 model report by Balleau GW and reviewer report by SSPA.

The contents of the first two zipfiles can be used independently. Each contains the Modflow executable file BGWmf2k1\_18.exe and three folders, \Arrays, \SS\_Hist and \baseline, which contain the files required to run respective multilayer and single-layer versions of the calibrated historical base case and the baseline future. Additionally, each includes first-year test runs of the same two cases; the one-year test runs allow testing quickly whether the required data files are present and accessible.

The one-layer model zipfile also contains results for a full 68-year model run (name file RS\_baseline\_bgw.nam), including computed heads (ext. hds) and global budget summary (ext. csv), except that two of the output files are provided as separate zipfiles because of their size, each of which is over 2 Gbytes: the list file (ext. Lst) and the SFR package output file (Sbd). The global budget summary files are included for all model runs, and all output files are included for all first-year model runs.

The GMD5 model folders could be organized with the following folders:

 ML [contents of GMD5\_ML.zip, preserving folder structure]

 1L [contents of GMD5\_1L.zip, preserving folder structure]

**Multilayer model test runs (from a console prompt window, assuming the above folder names)**

First year of historical base case (run from GMD5\ML\SS\_Hist):

..\BGWmf2k1\_18 < bbgmdmod\_1yr.in > bbgmdmod\_1yr.log

68-year historical base case (run from GMD5\ML\SS\_Hist):

..\BGWmf2k1\_18 < bbgmdmod.in

First year of baseline future scenario (run from GMD5\ML\baseline):

..\BGWmf2k1\_18 < nam\RS\_wells\_baseline\_bgw\_1yr.in

68-year baseline future scenario (run from GMD5\ML\baseline):

..\BGWmf2k1\_18 < nam\RS\_wells\_baseline\_bgw.in

 [see also text version of batch file run\_baseline\_scenario\_ML.txt in gmd5\ML\baseline]

# Single-layer model test runs

First year of historical base case (run from GMD5\1L\SS\_Hist):

..\BGWmf2k1\_18 < bbgmdmod\_1yr.in > bbgmdmod\_1yr.log

68-year historical base case (run from GMD5\ML\SS\_Hist):

..\BGWmf2k1\_18 < bbgmdmod.in

First year of baseline future scenario (run from GMD5\1L\baseline):

..\BGWmf2k1\_18 nam\RS\_wells\_baseline\_bgw\_1yr.nam > out\RS\_wells\_baseline\_bgw\_1yr.log

68-year baseline future scenario (run from GMD5\1L\baseline):

..\BGWmf2k1\_18 nam\RS\_wells\_baseline\_bgw.nam > out\RS\_wells\_baseline\_bgw.log

 [see also text version of batch file run\_baseline\_scenario\_1L.txt in gmd5\1L\baseline]

**Notes re BGWmf2k-\_18 (executable file for mf2k version modified by Balleau GW):**

In addition to the output list file (bbgmdmod.lst in the example below), Balleau GW modified mf2k to write a comma-delimited budget summary of rates (file bbgmdmod.csv, below).

HYD package: hydrographs are written to a text file (bbgmdmod.hgr, below). Note: stream hydrograph names include segment number that is limited to three digits, a maximum of 999 (standard). However, the GMD5 stream model is constructed with 5,705 segments, one reach per segment; only the first 999 of these can be specified by Hydmod.

SFR package: Output is written to a text file (bbgmdmod.Sbd, below); this may be standard.

Name files for the historical base case runs (single layer and multilayer, 68-year and first-year versions) refer to all input and output files in the same folder ss\_Hist (except for array files in ..\Arrays). Name files for the future baseline runs are a little more structured, referring to nam\ for name files, out\ for output files and ..\ss\_Hist for input files.

Name file bbgmdmod.nam for historical base case, 1-layer model version:

# NAME file for GMD #5 + Up-Stream Areas

# (use old ss RCH for convg.)

# NOTE: Forward slashes (/) in pathnames may need to be converted

# to back slashes (\) in some computing environments

# Files for this variant

global 1 bbgmdmod.glo

list 2 bbgmdmod.lst

DATA 95 bbgmdmod.csv

DATA(BINARY) 90 bbgmdmod.hds

DATA(BINARY) 91 bbgmdmod.cbb

DATA(BINARY) 81 bbgmdmod.Wbd

DATA(BINARY) 82 bbgmdmod.Rbd

DATA(BINARY) 83 bbgmdmod.Ebd

DATA 45 bbgmdmod.Sbd

DATA 85 bbgmdmod.hgr

DATA 50 rch.dat

DATA 51 et.dat

DATA 52 rchN1940.dat

DATA 53 etN1940.dat

DATA 54 Pre1940Hds\_Layer1.hds

hyd 29 bbgmdmod\_1Layer.Hyd

bas6 8 bbgmdmod\_1Layer.bas

dis 9 bbgmdmod\_1Layer.dis

Huf2 10 bbgmdmod.huf

rch 11 bbgmdmod.rch

gmg 24 bbgmdmod.gmg

wel 25 bbgmdmod\_v6\_1Layer.wel

sfr 26 bbgmdmod\_3d.sfr

evt 27 bbgmdmod.evt

oc 28 bbgmdmod.oc

chd 15 bbgmdmod\_sel\_1Layer.chd

#mult 16 MULT

zone 17 ZONE

#DATA(BINARY) 88 bbgmdmod.bud

Additional notes: standard list and SFR package output files

Original request:

|  |  |
| --- | --- |
| **Date Request Received:**  | 08/21/2015  |
| **Record information Requested:**  |
| Attn: Chris Beightel / Sam Perkins We would like to respectfully request that the copies of the GMD5 groundwater model (both the 7 layer model supplied by the GMD and the developed single layer model) currently held by DWR be made available in a digital format that includes the executable files for the version of Modflow utilized; input files for both the historical calibration model run and a future baseline model run; and standard list output files for the two model runs. In addition if the DWR has available model reports pertaining to the GMD5 model, we would like to request this information be made available especially any documentation regarding how the model was created and calibrated. Zipfiles via an ftp site for download would be excellent means of transfer given the expected size of the modeling files. If you have any questions please feel free to contact me directly. We greatly appreciate the Department of Agriculture's assistance. Daniel Clement Burns & McDonnell 316-518-0893  |