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SANDIA NATIONAL LABORATORIES

WASTE ISOLATION PILOT PLANT

Addendum to the Summary Report on the Migration of the WIPP PA Codes

From VMS to Solaris, AP-162

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Introduction

After the completion of the migration of codes from VMS to Solaris as specified in AP-162 (Kirchner 2012, Kirchner, Gilkey and Long 2014) an error in the implementation of the DRSPALL code was discovered (WIPP PA 2013). This error was resolved by modifying the code and qualifying it as DRSPALL Version 1.22 (WIPP PA 2015a, WIPP PA 2015b, WIPP PA 2015c). Along with the change in the code changes in some control parameters were made in the DRSPALL control input file (Kicker 2015, Kicker, Herrick and Zeitler 2015). This addendum shows the impact of the change in DRSPALL on the outputs from CCDFGF for PABC09 and CRA14. Rerunning portions of these analyses affected by the DRSPALL outputs is a deviation from AP-162. These new analyses are being run to achieve the goal of having new baselines for PABC09 and CRA14 that do not reflect the error in DRSPALL. In addition, this addendum shows a comparison of results using CCDFGF Version 7.02 and CCDFGF Version 6.02. Version 7.02 is backward compatible with Version 6.02 except for changes in the input control file for CCDFGF. Version 7.02 was developed to allow the configuration pattern of the repository to be changed without requiring modification of CCDFGF's code. This was accomplished by adding a table to the input control file that specifies the number of panels, the probability of hitting each panel assuming random placement of wells, the relative location of the panel (upper, middle or lower) and a list of the panels neighboring each panel. Use of this table replaces the random sampling of fixed drilling nodes used in previous versions of CCDFGF. The comparison of results from CCDFGF Version 7.02 to those from version 6.02 is being made in order to establish CCDFGF Version 7.02 as the version of CCDFGF that will be used in future analyses.

A new utility code was employed following the successful execution of CCDFGF. This code is used to compute the across-vector and across-replicate statistics from the CCDFGF "binned" data stored in the PA_Results database. These statistics are then stored in tables in the PA_Results database. Qualification of this code is discussed in Appendix 1.

PABC09 Revision 1

DRSPALL is not typically run in a PA since its input parameters have not changed since it was first run for the CRA-2004 analysis and because it has no dependencies on outputs from other codes. Thus the results obtained from running DRSPALL 1.22 for the PABC09 Revision 1 analysis will be used in the CRA14 Revision 1 analysis and most probably in subsequent analyses. The output of DRSPALL is used by CUTTINGS_S, and the CUTTINGS_S output is used by BRAGFLO_DBR and CCDFGF. Thus the only codes that had to be executed again for the Revision 1 analysis were DRSPALL, CUTTINGS_S, BRAGFLO_DBR and CCDFGF. Outputs from the other PA codes (EPAUNI, LHS, BRAGFLO, NUTS, PANEL, and SECOTP2D) from the previous PABC09 analysis on Solaris where used in the Revision 1 analysis. The analysis was run under QA by the run_mast user. The names of files associated with the analysis are attached in Appendix 2. The input, output, and run control scripts and log files are stored in CVS at $CVSLIB/WIPP_ANALYSES/PABC09/*CODE* where *CODE* is the name of a PA code, e.g. CCDFGF.

The Revision 1 results were compared to the results generated on VMS using DRSPALL Version 1.20. The change in DRSPALL resulted in an increase in the releases due to spallings compared to VMS results in replicates 1 and 3, with replicate 2 having greater probabilities of release at low release levels but lower probabilities of release at high release values (Fig. 1). The differences at higher release levels are controlled by just a few vectors (Fig. 2). Spallings releases remain minor contributors to total releases and the total releases showed only small differences between Revision 1 and the VMS results (Figs. 3-5).

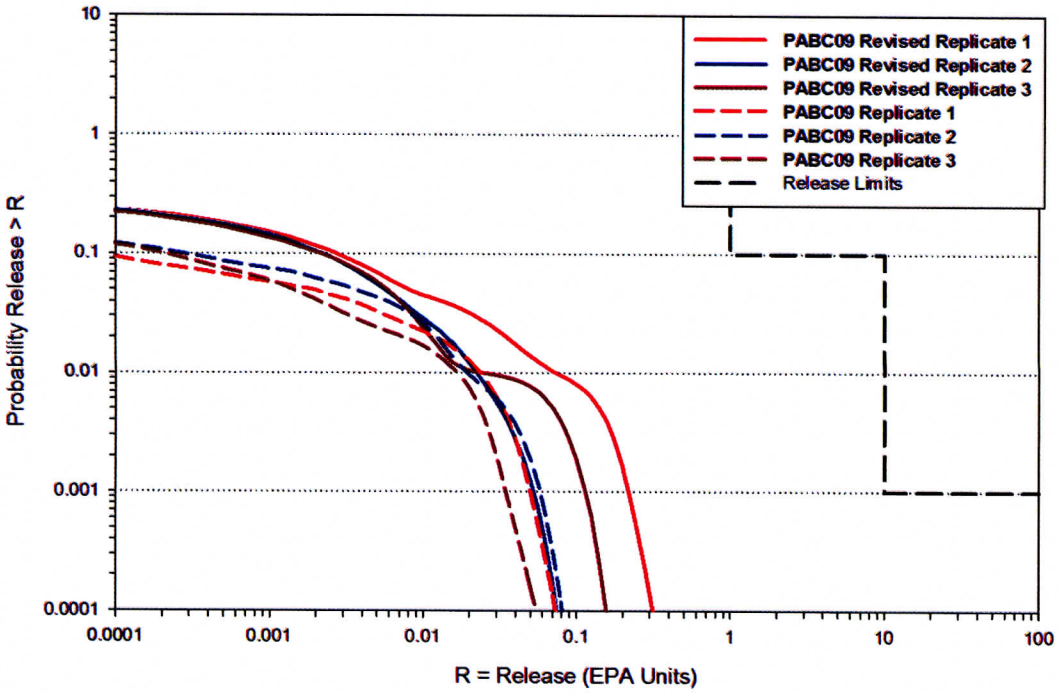

Figure 1. Comparison of spalling releases from Revisions 0 and 1 of PABC09.

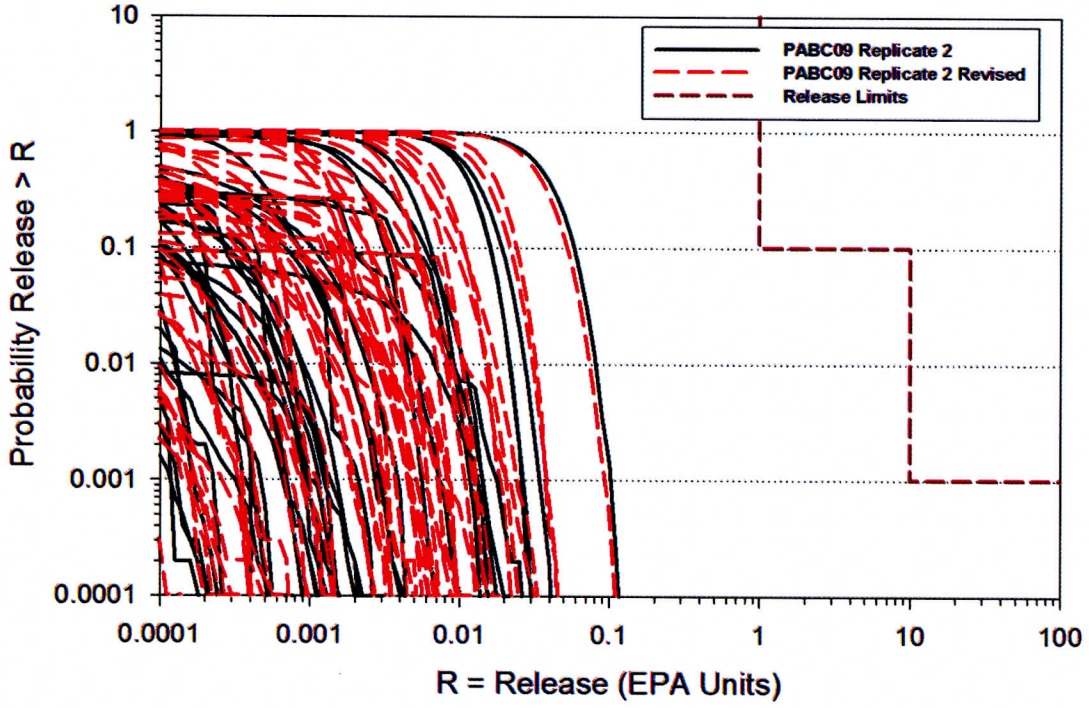

Figure 2. Replicate 2 spallings release CCDF curves by vector.

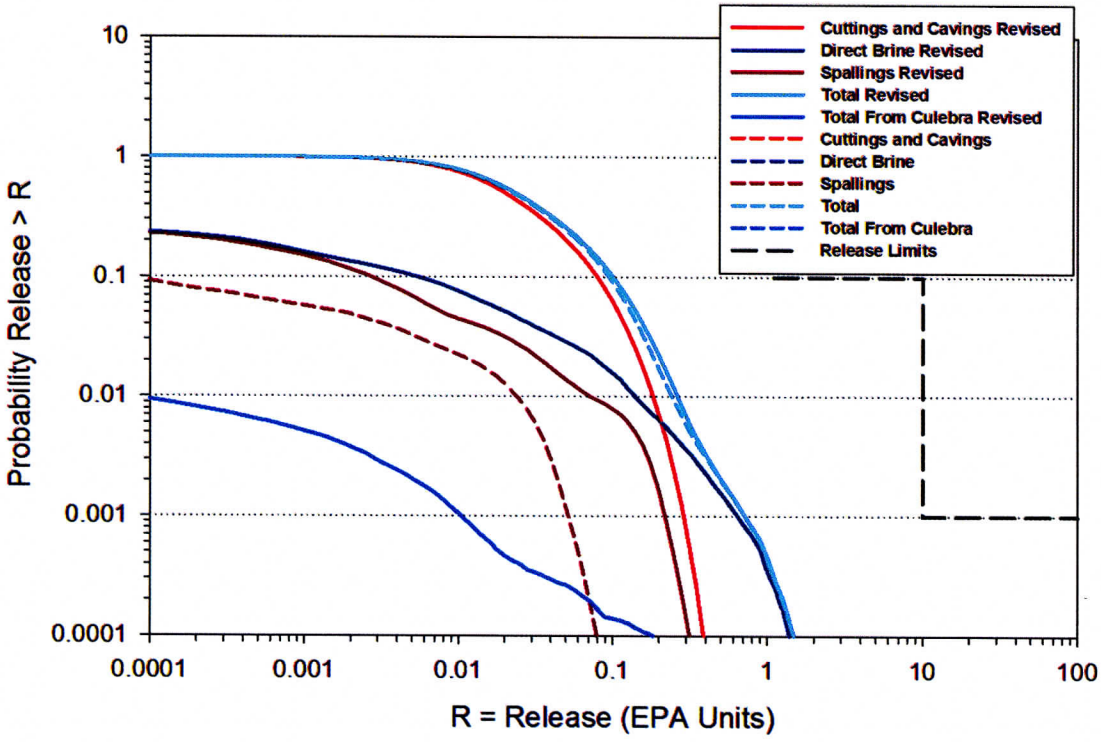

Figure 3. Comparison of releases from Revision 0 and Revision 1 of PABC09 replicate 1.

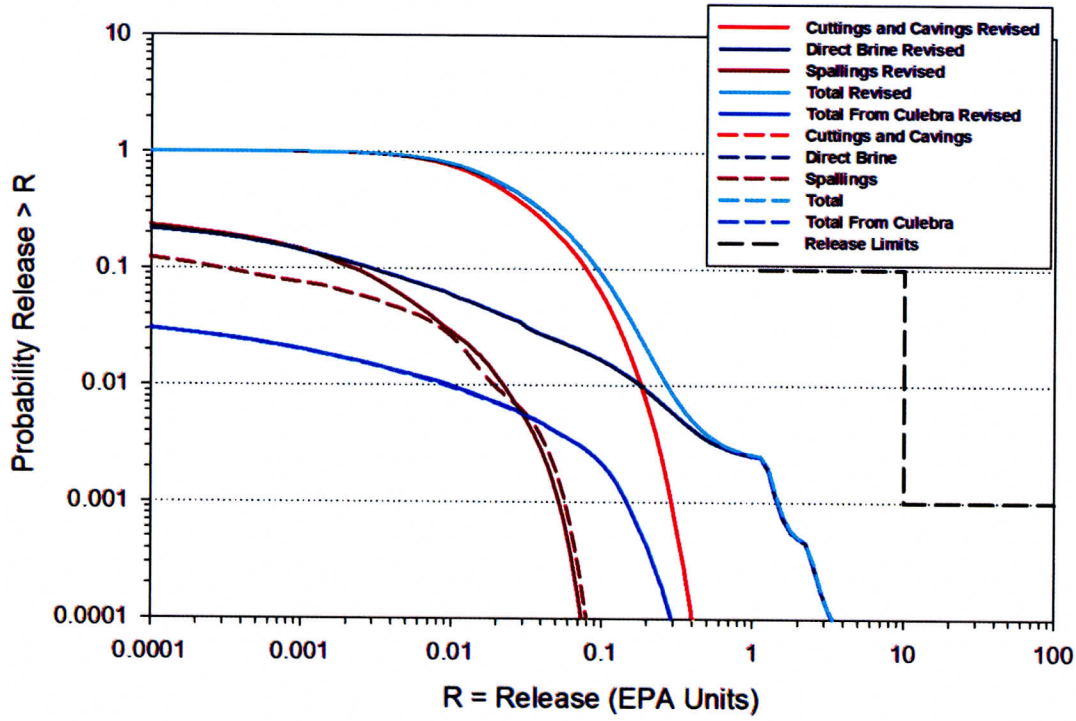

Figure 4. Comparison of releases from Revision 0 and Revision 1 of PABC09 replicate 2.

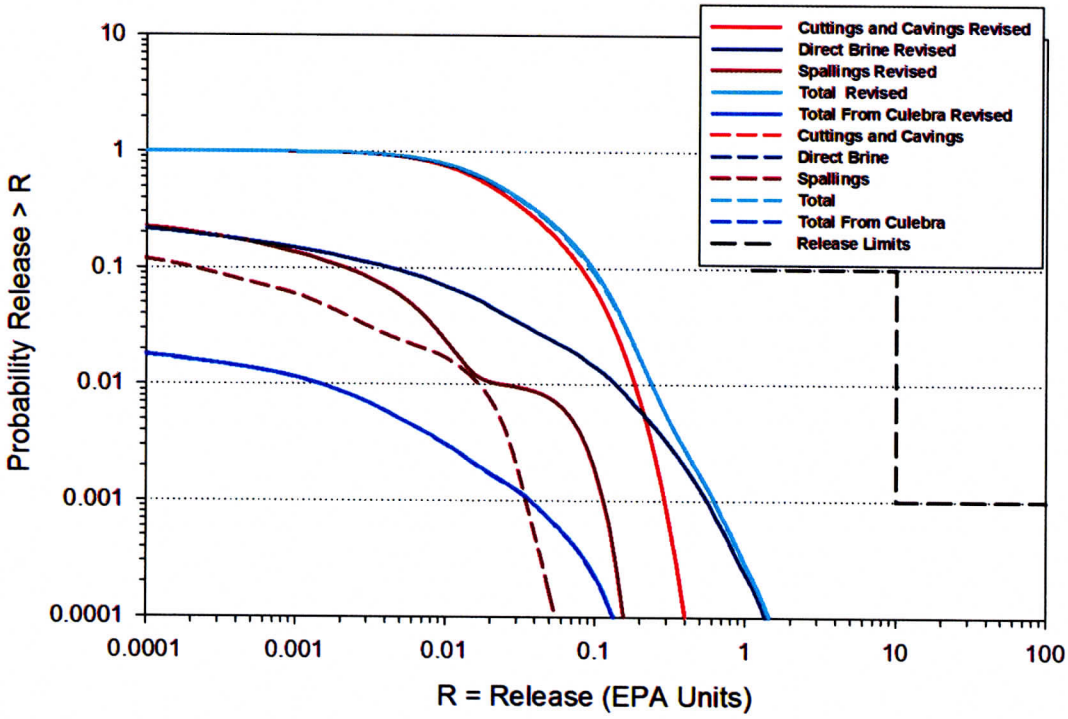

Figure 5. Comparison of releases from Revision 0 and Revision 1 of PABC09 replicate 3.

CRA14 Revision 1

Only CUTTINGS_S, BRAGFLO_DBR and CCDFGF had to be run for the CRA14 Revision 1 analysis. The DRSPALL output tables from PABC09 Revision 1 were used in this analysis, and the outputs from the remaining codes were those generated in CRA14 Revision 0. CRA14 tended to have a greater number of non-zero spallings releases than did PABC09 and that most likely contributed to a more consistent difference between the Revision 0 and Revision 1 results (Fig. 6). The revised DRSPALL model produced higher spalling releases. The impact on total releases was small (Figs. 7-9). The files used in the CRA14 Revision 1 analysis are listed in Appendix 3. The log files are not listed but are preserved in the CVS repositories (located in $CVSLIB/WIPP_ANALYSES/CRA14/*CODE* where *CODE* is CUTTINGS_S, BRAGFLO_DBR and CCDFGF.

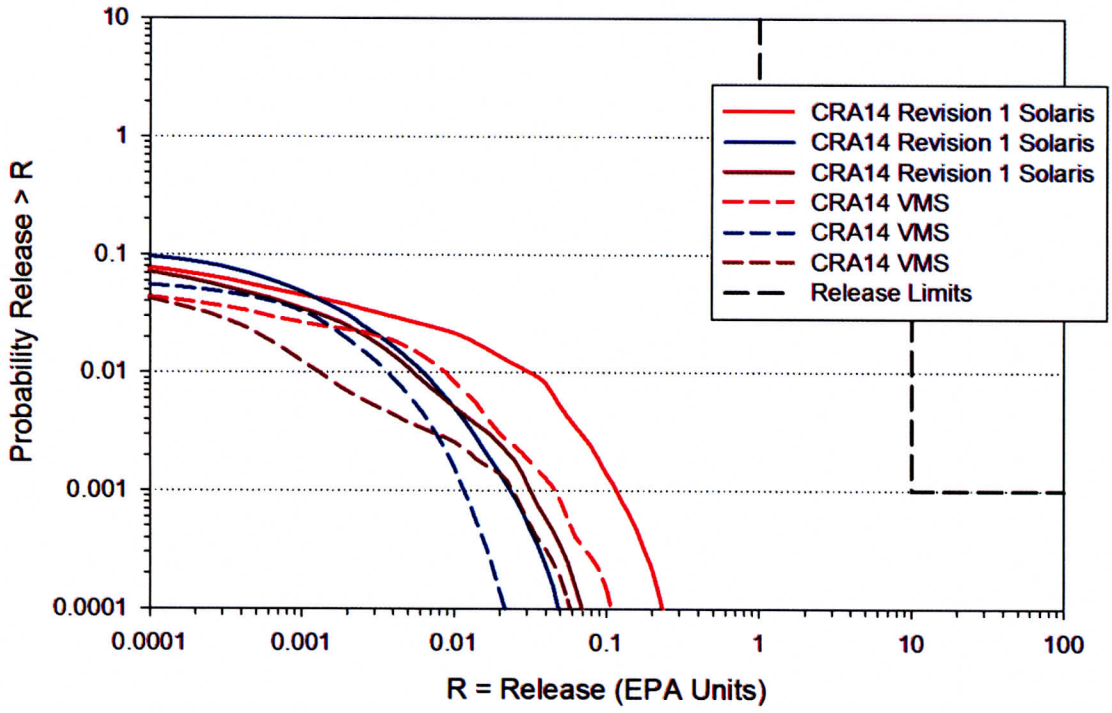

Figure 6. Comparison of mean spallings release curves for Revision 0 and Revision 1 of CRA14.

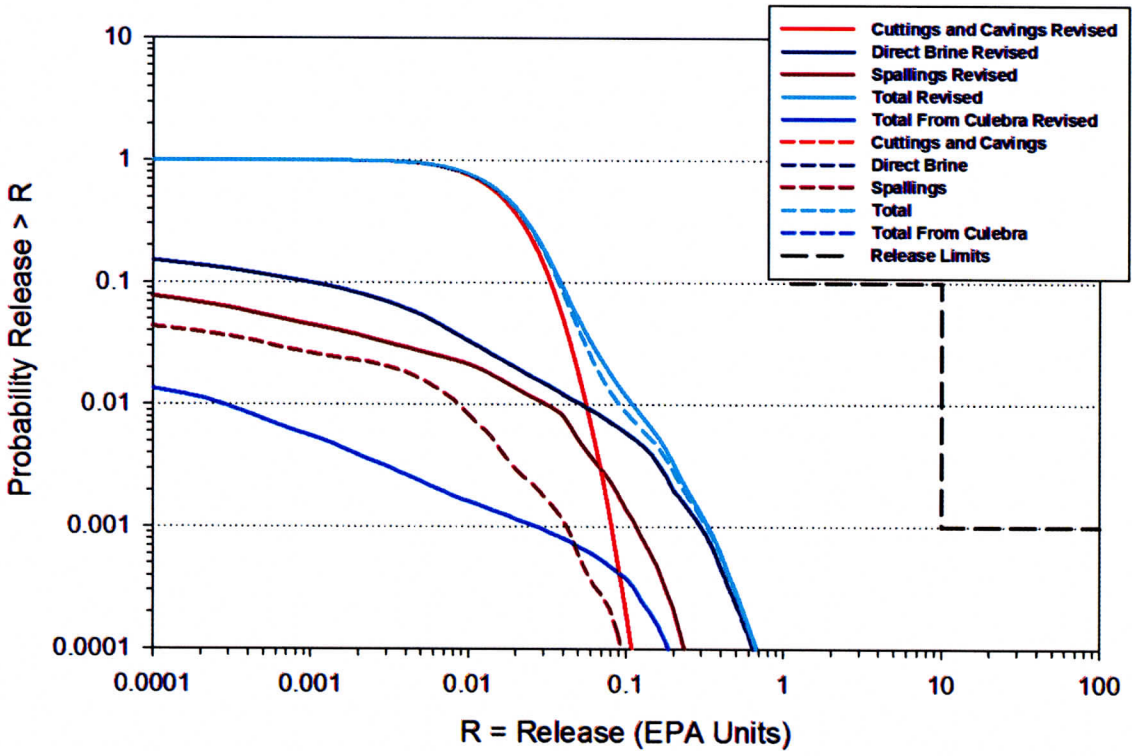

Figure 7. Comparison of releases from Revision 0 and Revision 1 of CRA14 replicate 1.

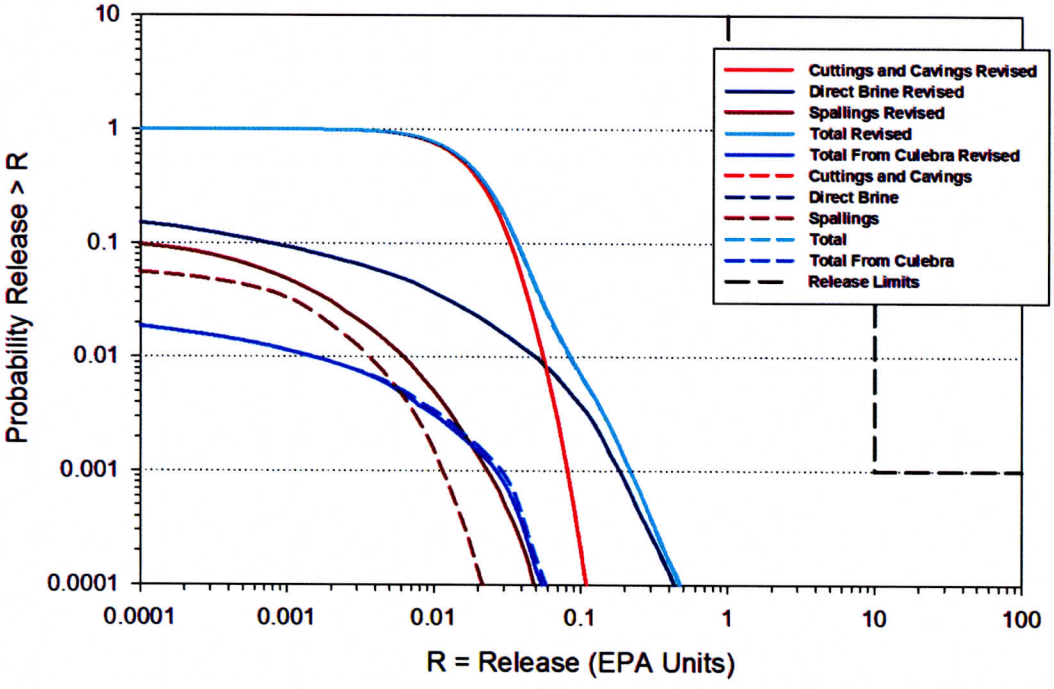

Figure 8. Comparison of releases from Revision 0 and Revision 1 of CRA14 replicate 2.

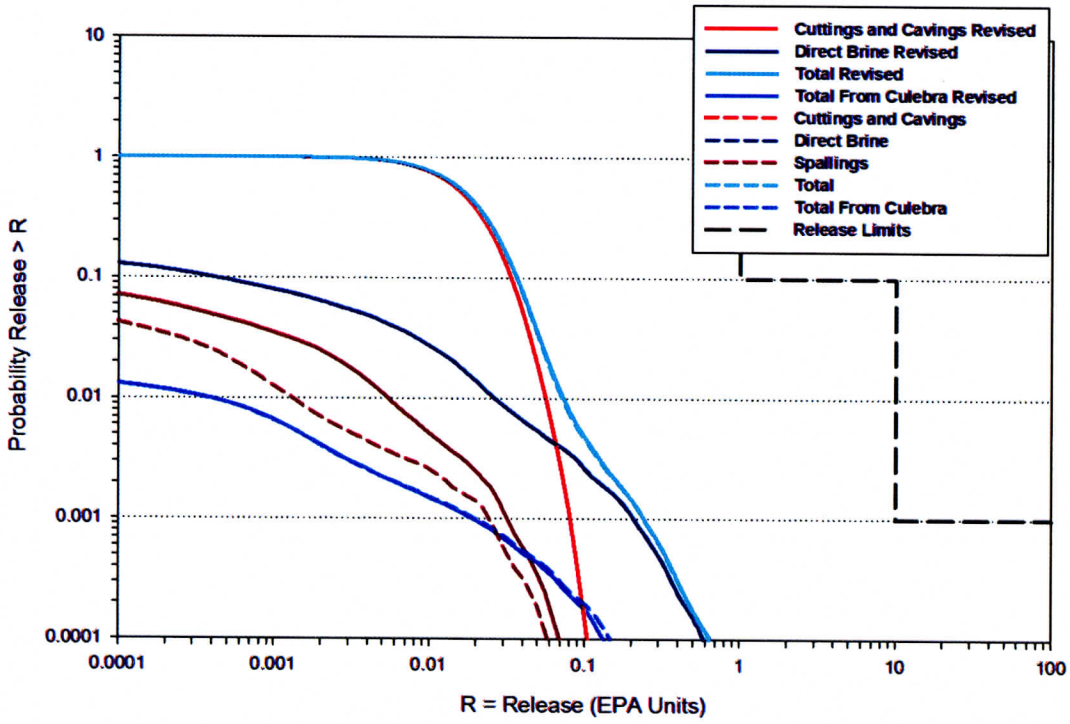

Figure 9. Comparison of releases from Revision 0 and Revision 1 of CRA14 replicate 3.

CCDFGF Version 7.02

CCDFGF Version 7 was developed to allow for a more flexible method of modeling drilling intrusions into panels with regard to repository configuration (WIPP PA 2010). CCDFGF 7.02 was run using Revision 1 outputs from CUTTINGS_S and BRAGFLO_DBR and its outputs compared to the outputs from CCDFGF 6.02. Version 7 uses a table of panel specific information to define the probability of randomly drilling into each panel plus other data that specify the panels' relative locations within the repository and their neighboring panels. The change in the random selection of panels from a method involving a fixed set of drilling locations to one using a table of probabilities of encounters most likely results in a different set of futures being simulated for each vector of input parameters. Nevertheless, the CCDFs by vector are very similar (Fig. 10) and the mean results are nearly indistinguishable (Figs. 11-13).

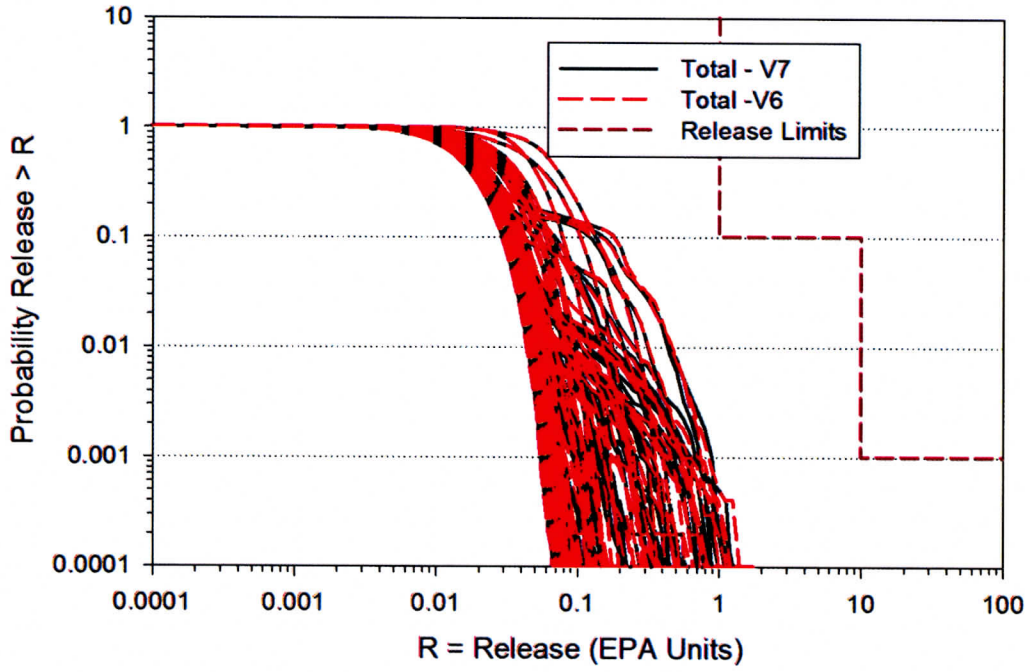

Figure 10. Comparison of vector-wise CCDFs for total releases for CRA14 replicate 1 using CCDFGF 6,02 (V6) and 7.02 (V7).

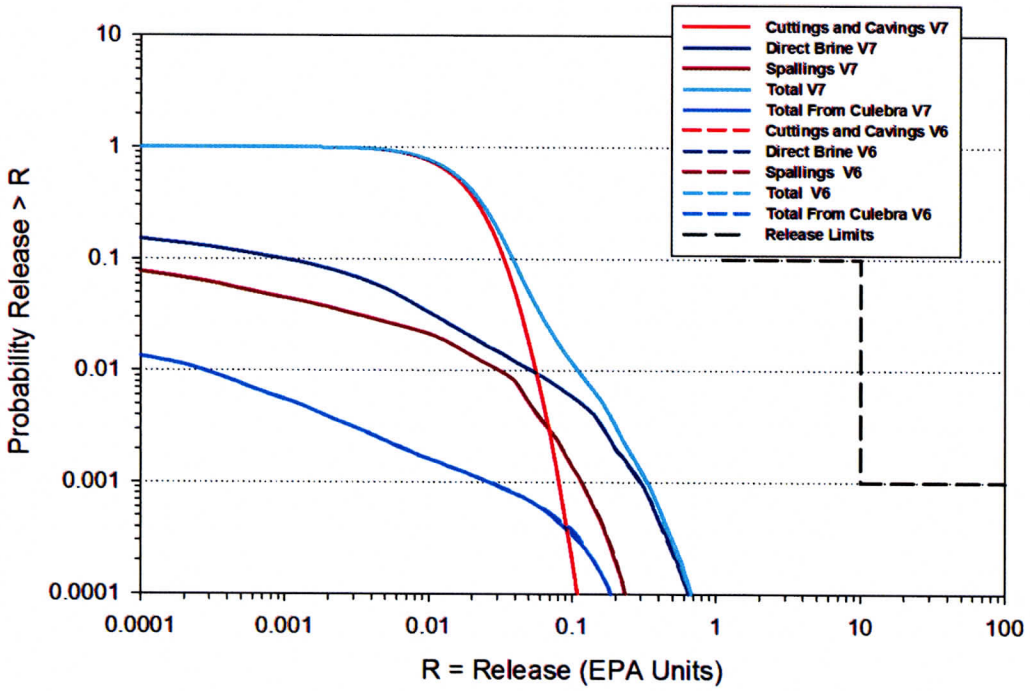

Figure 11. Comparison of replicate 1 mean release CCDF curves using CCDFGF versions 7.02 (V7) and 6.02 (V6).

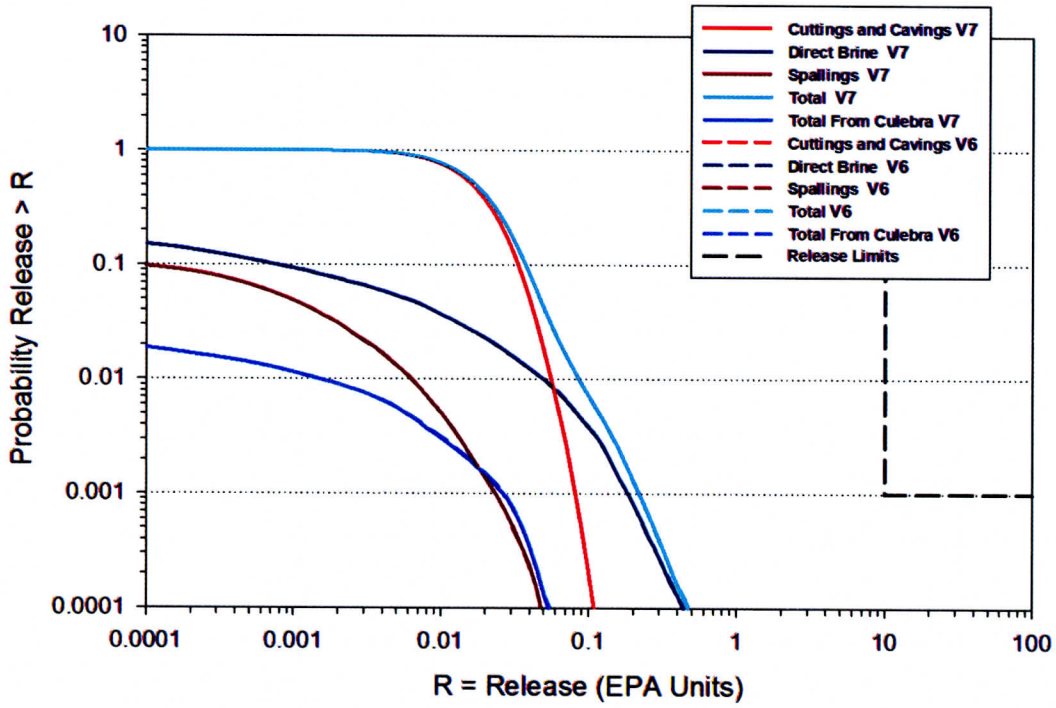

Figure 12. Comparison of replicate 2 mean release CCDF curves using CCDFGF versions 7.02 (V7) and 6.02 (V6).

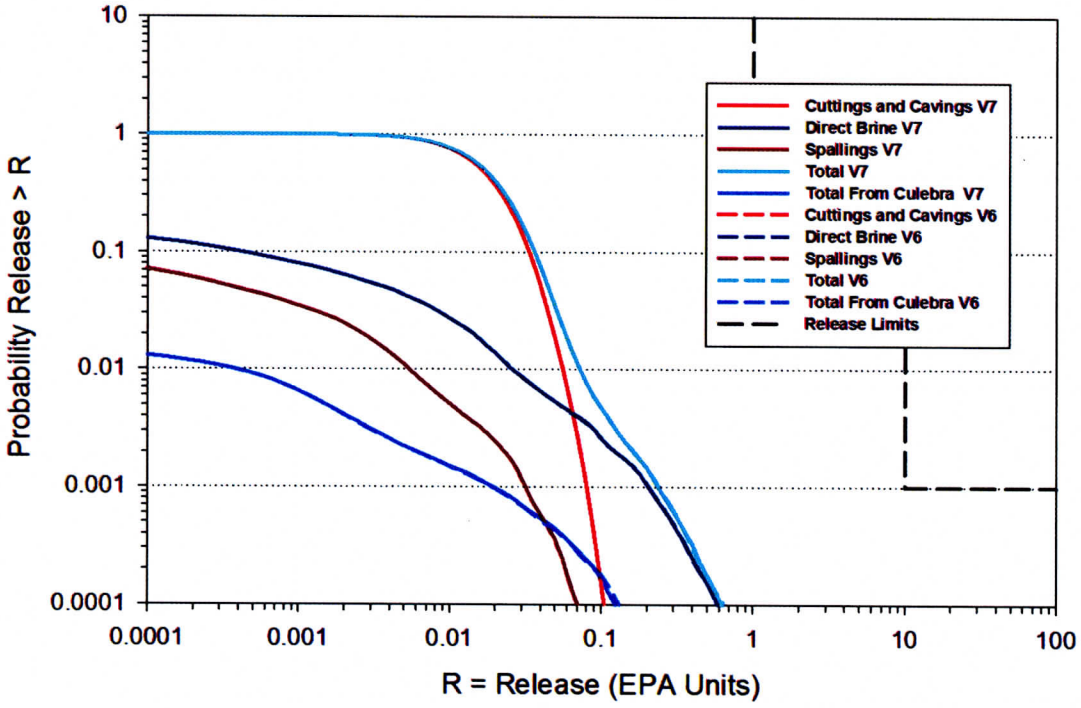

Figure 13. Comparison of replicate 3 mean release CCDF curves using CCDFGF versions 7.02 (V7) and 6.02 (V6).

Conclusion

The change to the DRSPALL code increased the projected spallings releases in most all of the cases. However, the impact on total releases was insignificant. Version 7.02 of CCDFGF was shown to reproduce the mean results of Version 6.02 well.

References

Kicker, D.C. 2015. *DRSPALL Zone Size Sensitivity Study*, Revision 0. Carlsbad, NM: Sandia National Laboratories. ERMS 564427.

Kicker, D. C, C. Herrick and T. Zeitler. 2015. Impact of the DRSPALL Modification on Waste Isolation Pilot Plant Performance Assessment Calculations. Sandia National Laboratories.

Kirchner, T. 2012. AP-162 Revision 0: Analysis Plan for the Migration of the Performance Assessment Codes to the Sun Solaris Blade Server Running with Intel Processors. Sandia National Laboratories. ERMS 557765.

Kirchner, T., A. Gilkey and J. Long. 2014. Summary report on the migration of the WIPP PA codes from VMS to Solaris, AP-162 Revision 1. Sandia National Laboratories.. ERMS 561757

WIPP PA. 2010. Requirements Document for CCDFGF (Version 7.0). Carlsbad, NM: Sandia National Laboratories. ERMS 554044.

WIPP PA. 2013. *Software Problem Report (SPR) 13-001 for DRSPALL Versions 1.10 and 1.21.* Carlsbad, NM: Sandia National Laboratories. ERMS 561524.

WIPP PA 2015a. *Design Document for DRSPALL Version 1.22.* Carlsbad, NM: Sandia National Laboratories. ERMS 562640.

WIPP PA 2015b. *Addendum to User's Manual for DRSPALL Version 1.22.* Carlsbad, NM Sandia National Laboratories. ERMS 562642.

WIPP PA 2015c. Verification and Validation Plan / Validation Document for DRSPALL Version 1.22. Carlsbad, NM: Sandia National Laboratories. ERMS 562643.

Appendix 1. Qualification of CCDFVECTORSTATS

CCDFVECTORSTATS is a program designed to compute the across vector and across-replicate statistics for the CCDFGF releases. The statistics are computed from the binned data stored in the CCDF_Data table of the PA_Results database or a database of the same structure. The statistics computed are the mean, median, 10^{th} percentile, 90^{th} percentile, standard deviation and standard error (standard deviation of the mean). The percentiles are based on order statistics. The across-vector statistics are stored in the StatsAcrossVectors table and the across-replicate statistics are stored in the StatsAcrossReplicates table. Some of these statistics had previously been computed and saved to a text file using another code (CCDFSUM) or computed within a Microsoft Access database (CCDFGF_Analysis). The source code and executable are stored in modules Build/Solaris and Source, respectively of the CVS repository $CVSLIB/WIPP_CODES/PA_CODES/CCDFVECTORSTATS.

The performance of CCDFVECTORSTATS was tested by comparing the statistics from CCDFVECTORSTATS to statistics computed using build-in functions in Access. Data for this test was generated using a Python script (GenData.py, Listing 1), then loaded into the MySQL database PA_Results_tbk. CCDFVECTORSTATS was then run to compute the statistics for those data. A copy of the PA_AnalysisRemote database was created (PA_AnalysisRemote_TestDB, submitted to records on an attached CD) and attached to the MySQL PA_Results_tbk database. Equivalent statistics were computed on the test data using a set of queries (Table 1) and compared by computing relative percent differences (RPDs) between the CCDFVECTORSTAT-computed values and the Access-computed values. The RPDs were all smaller than 3E-9.

```
#!/usr/bin/python
delta=.05
for v in range(1,101):
    p=1
    deltap=(1.0/161)+(v-1)*0.00001

    for i in range(0,161):
        x=pow(10,(-8+delta*i))
        print v,",",i+1,",",x,",",p
        p=p-deltap
        if p<0:
            p=0
```

Listing 1. Listing of the Python script GenData.py used to create a test dataset.

Statistic	Maximum Relative Percent Difference
Mean	3.40919544121515E-13
SD	2.26802028361977E-09
Median	2.16507919180503E-16
10^{th} Percentile	0
9^{th} Percentile	0

Table 1. Maximum relative percent differences between statistics computed by CCDFVECTOSTATS and using Access.

Appendix 2: Files used in the PABC09 analysis.

DRSPALL

Summary of Files Used

Table 2. The run script files used were:

File	Repository	Comment
RunControl/DRSPALL.py	$REP/PABC09/DRSPALL	Python run control script
RunControl/DRSPALLlib.py	$REP/PABC09/DRSPALL	Python run control script class modules
RunControl/rc.py	$REP/PABC09/DRSPALL	Run control module
RunControl/Run.py	$REP/PABC09/DRSPALL	User shell script

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 3. The input files used were:

File	Repository	Comment
Input/drs_PABC09_mxt_p1.inp	$REP/PABC09/DRSPALL	Input file
Input/drs_PABC09_mxt_p2.inp	$REP/PABC09/DRSPALL	Input file
Input/drs_PABC09_mxt_p3.inp	$REP/PABC09/DRSPALL	Input file
Input/drs_PABC09_mxt_p4.inp	$REP/PABC09/DRSPALL	Input file
Input/drs_PABC09_p1.inp	$REP/PABC09/DRSPALL	Input file
Input/drs_PABC09_p2.inp	$REP/PABC09/DRSPALL	Input file
Input/drs_PABC09_p3.inp	$REP/PABC09/DRSPALL	Input file
Input/drs_PABC09_p4.inp	$REP/PABC09/DRSPALL	Input file
Input/gm_drs_PABC09.inp	$REP/PABC09/GENMESH	Input file
Input/ms_drs_PABC09.inp	$REP/PABC09/MATSET	Input file
Input/sum_drs_PABC09_sphere_p1.inp	$REP/PABC09/SUMMARIZE	Input file
Input/sum_drs_PABC09_sphere_p2.inp	$REP/PABC09/SUMMARIZE	Input file
Input/sum_drs_PABC09_sphere_p3.inp	$REP/PABC09/SUMMARIZE	Input file
Input/sum_drs_PABC09_sphere_p4.inp	$REP/PABC09/SUMMARIZE	Input file

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 4. The CVS repositories used were:

CVS Repositories
$CODE/DRSPALL
$CODE/GENMESH
$CODE/MATSET
$CODE/MERGESPALL
$CODE/POSTLHS
$CODE/SUMMARIZE
$REP/PABC09/DRSPALL
$REP/PABC09/GENMESH
$REP/PABC09/MATSET
$REP/PABC09/SUMMARIZE

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

Table 5. The log files used were:

File	Repository	Comment
RunControl/DRSPALL.log	$REP/PABC09/DRSPALL	log file
RunControl/DRSPALL.rtf	$REP/PABC09/DRSPALL	Formatted log file (Word file)

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 6. The output files produced were:

File	Repository	Comment
Output/drs_PABC09_cyl_r*i*_p2_v*yyy*.cdb		NOT SAVED:CDB transfer file
Output/drs_PABC09_cyl_r*i*_p3_v*vvv*.cdb		NOT SAVED:CDB transfer file
Output/drs_PABC09_cyl_r*i*_p4_v*www*.cdb		NOT SAVED:CDB transfer file
Output/drs_PABC09_r*i*_p1_v*xxx*.cdb		NOT SAVED:CDB transfer file
Output/drs_PABC09_r*i*_p2_v*xxx*.cdb		NOT SAVED:CDB transfer file
Output/drs_PABC09_r*i*_p3_v*xxx*.cdb		NOT SAVED:CDB transfer file
Output/drs_PABC09_r*i*_p4_v*xxx*.cdb		NOT SAVED:CDB transfer file
Output/gm_drs_PABC09.cdb		NOT SAVED:CDB transfer file
Output/lhs3_drs_PABC09_r*i*_v*xxx*.cdb		NOT SAVED:LHS file
Output/ms_drs_PABC09.cdb		NOT SAVED:CDB transfer file
Output/ms_drs_PABC09.xdbg	$REP/PABC09/MATSET	Debug file
Output/mspall_drs_PABC09_r*i*.out	$REP/PABC09/DRSPALL	MergeSpall output file
Output/sum_drs_PABC09_cyl_r*i*_p2.tbl	$REP/PABC09/SUMMARIZE	Table file
Output/sum_drs_PABC09_cyl_r*i*_p3.tbl	$REP/PABC09/SUMMARIZE	Table file
Output/sum_drs_PABC09_cyl_r*i*_p4.tbl	$REP/PABC09/SUMMARIZE	Table file
Output/sum_drs_PABC09_sphere_r*i*_p1.tbl	$REP/PABC09/SUMMARIZE	Table file
Output/sum_drs_PABC09_sphere_r*i*_p2.tbl	$REP/PABC09/SUMMARIZE	Table file
Output/sum_drs_PABC09_sphere_r*i*_p3.tbl	$REP/PABC09/SUMMARIZE	Table file
Output/sum_drs_PABC09_sphere_r*i*_p4.tbl	$REP/PABC09/SUMMARIZE	Table file

Where:

i is 1-3
vvv is 001, 025, 032, 041, 059, 071, 086
www is 001, 002, 025, 028, 032, 041, 059, 067, 068, 071, 086
xxx is 001-100
yyy is 025, 032, 041
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 7. The executable files used were:

File	Repository	Comment
Build/Solaris/drspall (Ver:1.22)	$CODE/DRSPALL	Computes volume of waste from drilling
Build/Solaris/genmesh (Ver:6.10)	$CODE/GENMESH	Generates the CAMDAT computational grid
Build/Solaris/matset (Ver:9.22)	$CODE/MATSET	Assigns material properties to CAMDAT grid blocks
Build/Solaris/mergespall (Ver:1.01)	$CODE/MERGESPALL	Executable file
Build/Solaris/postlhs (Ver:4.09)	$CODE/POSTLHS	Assigns sampled parameters to the grid blocks and elements
Build/Solaris/summarize (Ver:3.02)	$CODE/SUMMARIZE	Writes tables of data from many CAMDAT files

Where:

$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

CUTTINGS_S

Summary of Files Used

Table 8. The run script files used were:

File	Repository	Comment
RunControl/CUTTINGS_S.py	$REP/PABC09/CUTTINGS_S	Python run control script
RunControl/CUTTINGS_Slib.py	$REP/PABC09/CUTTINGS_S	Python run control script class modules
RunControl/rc.py	$REP/PABC09/CUTTINGS_S	Run control module
RunControl/Run.py	$REP/PABC09/CUTTINGS_S	User shell script

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 9. The input files used were:

File	Repository	Comment
Output/bf3_PABC09_r*i*_s*n*_v*vvv*.cdb	$REP/PABC09/BRAGFLO	
Input/cusp_PABC09.inp	$REP/PABC09/CUTTINGS_S	
Input/gm_cusp_PABC09.inp	$REP/PABC09/GENMESH	
Input/ms_cusp_PABC09.inp	$REP/PABC09/MATSET	
Output/mspall_drs_PABC09_r*i*.out	$REP/PABC09/DRSPALL	

Where:

i is 1-3
n is 1-5
vvv is 001-100
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 10. The CVS repositories used were:

CVS Repositories
$CODE/CUTTINGS_S
$CODE/GENMESH
$CODE/MATSET
$CODE/POSTLHS
$REP/PABC09/BRAGFLO
$REP/PABC09/CUTTINGS_S
$REP/PABC09/DRSPALL
$REP/PABC09/GENMESH
$REP/PABC09/MATSET

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES
$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

Table 11. The log files used were:

File	Repository	Comment
RunControl/CUTTINGS_S.log	$REP/PABC09/CUTTINGS_S	log file
RunControl/CUTTINGS_S.rtf	$REP/PABC09/CUTTINGS_S	Formatted log file (Word file)

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 12. The output files produced were:

File	Repository	Comment
Output/cusp_PABC09_master_*ri*.inp	$REP/PABC09/CUTTINGS_S	
Output/cusp_PABC09_*ri*.tbl	$REP/PABC09/CUTTINGS_S	
Output/cusp_PABC09_*ri*_*sn*_*ttttt*_L_*vvvv*.cdb		NOT SAVED:
Output/cusp_PABC09_*ri*_*sn*_*ttttt*_M_*vvvv*.cdb		NOT SAVED:
Output/cusp_PABC09_*ri*_*sn*_*ttttt*_U_*vvvv*.cdb		NOT SAVED:
Output/gm_cusp_PABC09.cdb		NOT SAVED:CDB transfer file
Output/lhs3_cusp_PABC09_*ri*_*vvvv*.cdb		NOT SAVED:
Output/ms_cusp_PABC09.cdb		NOT SAVED:CDB transfer file

Where:

i is 1-3
n is 1-5
ttttt is 00100, 00350, 01000, 03000, 05000, 10000 for S1
00550, 00750, 02000, 04000, 10000 for S2, S4
01200, 01400, 03000, 05000, 10000 for S3, S5
vvv is 001-100
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 13. The executable files used were:

File	Repository	Comment
Build/Solaris/cuttings_s (Ver:6.03)	$CODE/CUTTINGS_S	Computes cuttings/spall generated by drilling
Build/Solaris/genmesh (Ver:6.10)	$CODE/GENMESH	Generates the CAMDAT computational grid
Build/Solaris/matset (Ver:9.22)	$CODE/MATSET	Assigns material properties to CAMDAT grid blocks
Build/Solaris/postlhs (Ver:4.09)	$CODE/POSTLHS	Assigns sampled parameters to the grid blocks and elements

Where:

$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

BRAGFLO_DBR
Summary of Files Used

Table 14. The run script files used were:

File	Repository	Comment
RunControl/BRAGFLO_DBR.py	$REP/PABC09/BRAGFLO_DBR	Python run control script
RunControl/BRAGFLO_DBRlib.py	$REP/PABC09/BRAGFLO_DBR	Python run control script class modules
RunControl/rc.py	$REP/PABC09/BRAGFLO_DBR	Run control module
RunControl/Run.py	$REP/PABC09/BRAGFLO_DBR	User shell script

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 15. The input files used were:

File	Repository	Comment
Input/alg1_dbr_PABC09.inp	$REP/PABC09/ALGEBRACDB	
Input/alg2_dbr_PABC09_*sn*.inp	$REP/PABC09/ALGEBRACDB	
Input/alg3_dbr_PABC09.inp	$REP/PABC09/ALGEBRACDB	
Input/bf1_dbr_PABC09_L.inp	$REP/PABC09/PREBRAG	
Input/bf1_dbr_PABC09_M.inp	$REP/PABC09/PREBRAG	
Input/bf1_dbr_PABC09_U.inp	$REP/PABC09/PREBRAG	
Output/bf3_PABC09_r*i*_s*n*_v*vvv*.cdb	$REP/PABC09/BRAGFLO	
Output/cusp_PABC09_r*i*_s*n*_t*ttttt*_L_v*vvv*.cdb	$REP/PABC09/CUTTINGS_S	
Output/cusp_PABC09_r*i*_s*n*_t*ttttt*_M_v*vvv*.cdb	$REP/PABC09/CUTTINGS_S	
Output/cusp_PABC09_r*i*_s*n*_t*ttttt*_U_v*vvv*.cdb	$REP/PABC09/CUTTINGS_S	
Input/gm_dbr_PABC09.inp	$REP/PABC09/GENMESH	
Input/ic_dbr_PABC09_*sn*.inp	$REP/PABC09/ICSET	
Input/ms_dbr_PABC09.inp	$REP/PABC09/MATSET	
Input/rel1_dbr_PABC09.inp	$REP/PABC09/RELATE	
Input/rel2_dbr_PABC09_*sn*.inp	$REP/PABC09/RELATE	

File	Repository	Comment
Input/sum_dbr.inp	$REP/PABC09/SUMMARIZE	

Where:

i is 1-3
n is 1-5
ttttt is 00100, 00350, 01000, 03000, 05000, 10000 for S1
00550, 00750, 02000, 04000, 10000 for S2, S4
01200, 01400, 03000, 05000, 10000 for S3, S5
vvv is 001-100
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 16. The CVS repositories used were:

CVS Repositories
$CODE/ALGEBRACDB
$CODE/BRAGFLO
$CODE/GENMESH
$CODE/ICSET
$CODE/MATSET
$CODE/POSTBRAG
$CODE/POSTLHS
$CODE/PREBRAG
$CODE/RELATE
$CODE/SUMMARIZE
$REP/PABC09/ALGEBRACDB
$REP/PABC09/BRAGFLO
$REP/PABC09/BRAGFLO_DBR
$REP/PABC09/CUTTINGS_S
$REP/PABC09/GENMESH
$REP/PABC09/ICSET
$REP/PABC09/MATSET
$REP/PABC09/PREBRAG
$REP/PABC09/RELATE
$REP/PABC09/SUMMARIZE

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES
$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

Table 17. The log files used were:

File	Repository	Comment
RunControl/BRAGFLO_DBR.log	$REP/PABC09/BRAGFLO_DBR	log file
RunControl/BRAGFLO_DBR.rtf	$REP/PABC09/BRAGFLO_DBR	Formatted log file (Word file)

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 18. The output files produced were:

File	Repository	Comment
Output/alg1_dbr_PABC09_r*i*_s*n*_t*tttt*_v*vvv*.cdb		NOT SAVED:
Output/alg2_dbr_PABC09_r*i*_s*n*_t*tttt*_v*vvv*.cdb		NOT SAVED:
Output/alg3_dbr_PABC09_r*i*_s*n*_t*tttt*_L_v*vvv*.cdb		NOT SAVED:
Output/alg3_dbr_PABC09_r*i*_s*n*_t*tttt*_M_v*vvv*.cdb		NOT SAVED:
Output/alg3_dbr_PABC09_r*i*_s*n*_t*tttt*_U_v*vvv*.cdb		NOT SAVED:
Output/bf2_dbr_PABC09_r*i*_s*n*_t*tttt*_L_v*vvv*.inp	$REP/PABC09/BRAGFLO_DBR	
Output/bf2_dbr_PABC09_r*i*_s*n*_t*tttt*_M_v*vvv*.inp	$REP/PABC09/BRAGFLO_DBR	
Output/bf2_dbr_PABC09_r*i*_s*n*_t*tttt*_U_v*vvv*.inp	$REP/PABC09/BRAGFLO_DBR	
Output/bf3_dbr_PABC09_r*i*_s*n*_t*tttt*_L_v*vvv*.cdb		NOT SAVED:
Output/bf3_dbr_PABC09_r*i*_s*n*_t*tttt*_M_v*vvv*.cdb		NOT SAVED:
Output/bf3_dbr_PABC09_r*i*_s*n*_t*tttt*_U_v*vvv*.cdb		NOT SAVED:
Output/gm_dbr_PABC09.cdb		NOT SAVED:
Output/ic_dbr_PABC09_r*i*_s*n*_t*tttt*_v*vvv*.cdb		NOT SAVED:
Output/ms_dbr_PABC09.cdb		NOT SAVED:
Output/rel1_dbr_PABC09_r*i*_s*n*_t*tttt*_v*vvv*.cdb		NOT SAVED:
Output/rel2_dbr_PABC09_r*i*_s*n*_t*tttt*_v*vvv*.cdb		NOT SAVED:
Output/sum_dbr_PABC09_r*i*_s*n*_t*tttt*_L.tbl	$REP/PABC09/SUMMARIZE	
Output/sum_dbr_PABC09_r*i*_s*n*_t*tttt*_M.tbl	$REP/PABC09/SUMMARIZE	
Output/sum_dbr_PABC09_r*i*_s*n*_t*tttt*_U.tbl	$REP/PABC09/SUMMARIZE	

Where:

i is 1-3
n is 1-5
tttt is 00100, 00350, 01000, 03000, 05000, 10000 for S1
00550, 00750, 02000, 04000, 10000 for S2, S4
01200, 01400, 03000, 05000, 10000 for S3, S5
vvv is 001-100
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 19. The executable files used were:

File	Repository	Comment
Build/Solaris/algebracdb (Ver:2.36)	$CODE/ALGEBRACDB	Manipulates CAMDAT data by evaluating algebraic expressions
Build/Solaris/bragflo (Ver:6.03)	$CODE/BRAGFLO	Computes brine and gas flow in the repository
Build/Solaris/genmesh (Ver:6.10)	$CODE/GENMESH	Generates the CAMDAT computational grid
Build/Solaris/icset (Ver:2.23)	$CODE/ICSET	Assigns initial conditions to the CAMDAT grid elements
Build/Solaris/matset (Ver:9.22)	$CODE/MATSET	Assigns material properties to CAMDAT grid blocks
Build/Solaris/postbrag (Ver:4.02)	$CODE/POSTBRAG	Post-processes data for bragflo

File	Repository	Comment
Build/Solaris/algebracdb (Ver:2.36)	$CODE/ALGEBRACDB	Manipulates CAMDAT data by evaluating algebraic expressions
Build/Solaris/bragflo (Ver:6.03)	$CODE/BRAGFLO	Computes brine and gas flow in the repository
Build/Solaris/genmesh (Ver:6.10)	$CODE/GENMESH	Generates the CAMDAT computational grid
Build/Solaris/icset (Ver:2.23)	$CODE/ICSET	Assigns initial conditions to the CAMDAT grid elements
Build/Solaris/matset (Ver:9.22)	$CODE/MATSET	Assigns material properties to CAMDAT grid blocks
Build/Solaris/postbrag (Ver:4.02)	$CODE/POSTBRAG	Post-processes data for bragflo
Build/Solaris/postlhs (Ver:4.09)	$CODE/POSTLHS	Assigns sampled parameters to the grid blocks and elements
Build/Solaris/prebrag (Ver:8.03)	$CODE/PREBRAG	Pre-processes data for bragflo
Build/Solaris/relate (Ver:1.45)	$CODE/RELATE	Transfers CAMDAT data to another CAMDAT file
Build/Solaris/summarize (Ver:3.02)	$CODE/SUMMARIZE	Writes tables of data from many CAMDAT files

Where:

$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

CCDFGF
Summary of Files Used

Table 20. The run script files used were:

File	Repository	Comment
RunControl/CCDFGF.py	$REP/PABC09/CCDFGF	Python run control script
RunControl/CCDFGFlib.py	$REP/PABC09/CCDFGF	Python run control script class modules
RunControl/rc.py	$REP/PABC09/CCDFGF	Run control module
RunControl/Run.py	$REP/PABC09/CCDFGF	User shell script

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 21. The input files used were:

File	Repository	Comment
Input/ccgf_PABC09_control_*ri*.inp	$REP/PABC09/CCDFGF	Input file
Output/cusp_PABC09_*ri*.tbl	$REP/PABC09/CUTTINGS_S	Release table file
Output/epu_PABC09_ch.dat	$REP/PABC09/EPAUNI	Release table file
Output/epu_PABC09_rh.dat	$REP/PABC09/EPAUNI	Release table file
Input/gm_ccgf_PABC09.inp	$REP/PABC09/GENMESH	Input file
Input/intrusiontimes.in	$REP/PABC09/PRECCDFGF	Input file
Input/ms_ccgf_PABC09.inp	$REP/PABC09/MATSET	Input file
Output/sum_dbr_PABC09_r*i*_s*o*_t*vvvvv*_L.tbl	$REP/PABC09/SUMMARIZE	Release table file
Output/sum_dbr_PABC09_r*i*_s*o*_t*vvvvv*_M.tbl	$REP/PABC09/SUMMARIZE	Release table file
Output/sum_dbr_PABC09_r*i*_s*o*_t*vvvvv*_U.tbl	$REP/PABC09/SUMMARIZE	Release table file
Output/sum_nut_PABC09_r*i*_s*o*_t*uuuuu*.tbl	$REP/PABC09/SUMMARIZE	Release table file
Output/sum_panel_con_PABC09_r*i*_s*n*.tbl	$REP/PABC09/SUMMARIZE	Release table file
Output/sum_panel_int_PABC09_r*i*_s*p*_t*tttt*.tbl	$REP/PABC09/SUMMARIZE	Release table file
Output/sum_panel_st_PABC09_r*i*_s*n*.tbl	$REP/PABC09/SUMMARIZE	Release table file
Output/sum_st2d_PABC09_r*i*_mf.tbl	$REP/PABC09/SUMMARIZE	Release table file
Output/sum_st2d_PABC09_r*i*_mp.tbl	$REP/PABC09/SUMMARIZE	Release table file

Where:

i is 1-3
n is 1-2
o is 1-5
p is 6
ttttt is 00100, 00350, 01000, 02000, 04000, 06000, 09000
uuuuu is 0100 for s1
00100, 00350 for S2,S4
01000, 03000, 05000, 07000, 09000 for S3, S5
vvvvv is 00100, 00350, 01000, 03000, 05000, 10000 for S1
00550, 00750, 02000, 04000, 10000 for S2, S4
01200, 01400, 03000, 05000, 10000 for S3, S5
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 22. The CVS repositories used were:

CVS Repositories
$CODE/CCDFGF
$CODE/CCDFVECTORSTATS
$CODE/GENMESH
$CODE/MATSET
$CODE/POSTLHS
$CODE/PRECCDFGF
$REP/PABC09/CCDFGF
$REP/PABC09/CUTTINGS_S
$REP/PABC09/EPAUNI
$REP/PABC09/GENMESH
$REP/PABC09/MATSET
$REP/PABC09/PRECCDFGF
$REP/PABC09/SUMMARIZE

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES
$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

Table 23. The log files used were:

File	Repository	Comment
RunControl/CCDFGF.log	$REP/PABC09/CCDFGF	log file
RunControl/CCDFGF.rtf	$REP/PABC09/CCDFGF	Formatted log file (Word file)

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 24. The output files produced were:

File	Repository	Comment
Output/ccgf_PABC09_reltab_*ri*.dat	$REP/PABC09/PRECCDFGF	CCDFGF Reults
Output/ccgf_PABC09_*ri*.out	$REP/PABC09/CCDFGF	CCDFGF Reults
Output/gm_ccgf_PABC09.cdb		NOT SAVED:CDB transfer file
Output/lhs3_ccgf_PABC09_*ri*_*vvvv*.cdb		NOT SAVED:LHS file
Output/ms_ccgf_PABC09.cdb		NOT SAVED:CDB transfer file

Where:

i is 1-3

vvv is 001-100

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 25. The executable files used were:

File	Repository	Comment
Build/Solaris/ccdfgf (Ver:5.04)	$CODE/CCDFGF	Constructs complimentary cumulative distribution functions for radionuclide releases
Build/Solaris/ccdfvectorstats	$CODE/CCDFVECTORSTATS	Executable file
Build/Solaris/genmesh (Ver:6.10)	$CODE/GENMESH	Generates the CAMDAT computational grid
Build/Solaris/matset (Ver:9.22)	$CODE/MATSET	Assigns material properties to CAMDAT grid blocks
Build/Solaris/postlhs (Ver:4.09)	$CODE/POSTLHS	Assigns sampled parameters to the grid blocks and elements
Build/Solaris/preccdfgf (Ver:1.06)	$CODE/PRECCDFGF	Pre-processes data for ccdfgf

Where:

$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

Appendix 3. Files used in the CRA14 Revision 1 analysis

CUTTINGS_S
Summary of Files Used

Table 26. The run script files used were:

File	Repository	Comment
RunControl/CUTTINGS_S.py	$REP/CRA14/CUTTINGS_S	Python run control script
RunControl/CUTTINGS_Slib.py	$REP/CRA14/CUTTINGS_S	Python run control script class modules
RunControl/rc.py	$REP/CRA14/CUTTINGS_S	Run control module
RunControl/Run.py	$REP/CRA14/CUTTINGS_S	Main control script

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 27. The input files used were:

File	Repository	Comment
Output/bf3_CRA14_*ri_sn_vvvv*.cdb	$REP/CRA14/BRAGFLO	
Input/cusp_CRA14.inp	$REP/CRA14/CUTTINGS_S	
Input/gm_cusp_CRA14.inp	$REP/CRA14/GENMESH	
Input/ms_cusp_CRA14.inp	$REP/CRA14/MATSET	
Output/mspall_drs_PABC09_*ri*.out	/home/run_mast/GD/MyRepositories/PABC09/DRSPALL	

Where:

i is 1-3
n is 1-5
vvv is 001-100
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 28. The CVS repositories used were:

CVS Repositories
$CODE/CUTTINGS_S
$CODE/GENMESH
$CODE/MATSET
$CODE/POSTLHS
$REP/CRA14/BRAGFLO
$REP/CRA14/CUTTINGS_S
$REP/CRA14/GENMESH
$REP/CRA14/MATSET
/home/run_mast/GD/MyRepositories/PABC09/DRSPALL

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES
$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

Table 29. The log files used were:

File	Repository	Comment
RunControl/CUTTINGS_S.log	$REP/CRA14/CUTTINGS_S	log file
RunControl/CUTTINGS_S.rtf	$REP/CRA14/CUTTINGS_S	Formatted log file (Word file)

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 30. The output files produced were:

File	Repository	Comment
Output/cusp_CRA14_master_*ri*.inp	$REP/CRA14/CUTTINGS_S	
Output/cusp_CRA14_*ri*.tbl	$REP/CRA14/CUTTINGS_S	
Output/cusp_CRA14_*ri*_*sn*_*ttttt*_L_*vvvv*.cdb		NOT SAVED:
Output/cusp_CRA14_*ri*_*sn*_*ttttt*_M_*vvvv*.cdb		NOT SAVED:
Output/cusp_CRA14_*ri*_*sn*_*ttttt*_U_*vvvv*.cdb		NOT SAVED:
Output/gm_cusp_CRA14.cdb		NOT SAVED:CDB transfer file
Output/lhs3_cusp_CRA14_*ri*_*vvvv*.cdb		NOT SAVED:
Output/ms_cusp_CRA14.cdb		NOT SAVED:CDB transfer file

Where:

i is 1-3
n is 1-5
ttttt is 00100, 00350, 01000, 03000, 05000, 10000 for S1
00550, 00750, 02000, 04000, 10000 for S2, S4
01200, 01400, 03000, 05000, 10000 for S3, S5
vvv is 001-100
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 31. The executable files used were:

File	Repository	Comment
Build/Solaris/cuttings_s (Ver:6.03)	$CODE/CUTTINGS_S	Computes cuttings/spall generated by drilling
Build/Solaris/genmesh (Ver:6.10)	$CODE/GENMESH	Generates the CAMDAT computational grid
Build/Solaris/matset (Ver:9.22)	$CODE/MATSET	Assigns material properties to CAMDAT grid blocks
Build/Solaris/postlhs (Ver:4.09)	$CODE/POSTLHS	Assigns sampled parameters to the grid blocks and elements

Where:

$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

BRAGFLO_DBR
Summary of Files Used

Table 32. The run script files used were:

File	Repository	Comment
RunControl/BRAGFLO_DBR.py	$REP/CRA14/BRAGFLO_DBR	Python run control script
RunControl/BRAGFLO_DBRlib.py	$REP/CRA14/BRAGFLO_DBR	Python run control script class modules
RunControl/rc.py	$REP/CRA14/BRAGFLO_DBR	Run control module
RunControl/Run.py	$REP/CRA14/BRAGFLO_DBR	User shell script

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 33. The input files used were:

File	Repository	Comment
Input/alg1_dbr_CRA14.inp	$REP/CRA14/ALGEBRACDB	
Input/alg2_dbr_CRA14_*so*.inp	$REP/CRA14/ALGEBRACDB	
Input/alg3_dbr_CRA14_L.inp	$REP/CRA14/ALGEBRACDB	
Input/alg3_dbr_CRA14_M.inp	$REP/CRA14/ALGEBRACDB	
Input/alg3_dbr_CRA14_U.inp	$REP/CRA14/ALGEBRACDB	
Input/bf1_dbr_CRA14_L.inp	$REP/CRA14/PREBRAG	
Input/bf1_dbr_CRA14_M.inp	$REP/CRA14/PREBRAG	
Input/bf1_dbr_CRA14_*sn*_100_L.inp	$REP/CRA14/PREBRAG	
Input/bf1_dbr_CRA14_*sn*_100_M.inp	$REP/CRA14/PREBRAG	
Input/bf1_dbr_CRA14_*sn*_100_U.inp	$REP/CRA14/PREBRAG	
Input/bf1_dbr_CRA14_U.inp	$REP/CRA14/PREBRAG	
Output/bf3_CRA14_*ri*_*so*_*vvvv*.cdb	$REP/CRA14/BRAGFLO	
Output/cusp_CRA14_*ri*_*so*_*ttttt*_L_*vvvv*.cdb	$REP/CRA14/CUTTINGS_S	
Output/cusp_CRA14_*ri*_*so*_*ttttt*_M_*vvvv*.cdb	$REP/CRA14/CUTTINGS_S	
Output/cusp_CRA14_*ri*_*so*_*ttttt*_U_*vvvv*.cdb	$REP/CRA14/CUTTINGS_S	
Input/gm_dbr_CRA14.inp	$REP/CRA14/GENMESH	
Input/ic_dbr_CRA14_*so*.inp	$REP/CRA14/ICSET	
Input/ms_dbr_CRA14.inp	$REP/CRA14/MATSET	
Input/rel1_dbr_CRA14.inp	$REP/CRA14/RELATE	
Input/rel2_dbr_CRA14_*so*.inp	$REP/CRA14/RELATE	
Input/sum_dbr.inp	$REP/CRA14/SUMMARIZE	

Where:

i is 1-3
n is 1
o is 1-5
ttttt is 00100, 00350, 01000, 03000, 05000, 10000 for S1
00550, 00750, 02000, 04000, 10000 for S2, S4
01200, 01400, 03000, 05000, 10000 for S3, S5
vvv is 001-100
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 34. The CVS repositories used were:

CVS Repositories
$CODE/ALGEBRACDB
$CODE/BRAGFLO
$CODE/GENMESH
$CODE/ICSET
$CODE/MATSET
$CODE/POSTBRAG
$CODE/POSTLHS
$CODE/PREBRAG
$CODE/RELATE
$CODE/SUMMARIZE
$REP/CRA14/ALGEBRACDB
$REP/CRA14/BRAGFLO
$REP/CRA14/BRAGFLO_DBR
$REP/CRA14/CUTTINGS_S
$REP/CRA14/GENMESH
$REP/CRA14/ICSET
$REP/CRA14/MATSET
$REP/CRA14/PREBRAG
$REP/CRA14/RELATE
$REP/CRA14/SUMMARIZE

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES
$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

Table 35. The log files used were:

File	Repository	Comment
RunControl/BRAGFLO_DBR.log	$REP/CRA14/BRAGFLO_DBR	log file
RunControl/BRAGFLO_DBR.rtf	$REP/CRA14/BRAGFLO_DBR	Formatted log file (Word file)

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 36. The output files produced were:

File	Repository	Comment
Output/alg1_dbr_CRA14_*ri_sn_ttttt*_*vvvv*.cdb		NOT SAVED:
Output/alg2_dbr_CRA14_*ri_sn_ttttt*_*vvvv*.cdb		NOT SAVED:
Output/alg3_dbr_CRA14_*ri_sn_ttttt*_L_*vvvv*.cdb		NOT SAVED:
Output/alg3_dbr_CRA14_*ri_sn_ttttt*_M_*vvvv*.cdb		NOT SAVED:
Output/alg3_dbr_CRA14_*ri_sn_ttttt*_U_*vvvv*.cdb		NOT SAVED:
Output/bf2_dbr_CRA14_*ri_sn_ttttt*_L_*vvvv*.inp	$REP/CRA14/BRAGFLO_DBR	
Output/bf2_dbr_CRA14_*ri_sn_ttttt*_M_*vvvv*.inp	$REP/CRA14/BRAGFLO_DBR	
Output/bf2_dbr_CRA14_*ri_sn_ttttt*_U_*vvvv*.inp	$REP/CRA14/BRAGFLO_DBR	
Output/bf3_dbr_CRA14_*ri_sn_ttttt*_L_*vvvv*.cdb		NOT SAVED:
Output/bf3_dbr_CRA14_*ri_sn_ttttt*_M_*vvvv*.cdb		NOT SAVED:
Output/bf3_dbr_CRA14_*ri_sn_ttttt*_U_*vvvv*.cdb		NOT SAVED:

File	Repository	Comment
Output/alg1_dbr_CRA14_r*i*_s*n*_t*tttt*_v*vvv*.cdb		NOT SAVED:
Output/alg2_dbr_CRA14_r*i*_s*n*_t*tttt*_v*vvv*.cdb		NOT SAVED:
Output/alg3_dbr_CRA14_r*i*_s*n*_t*tttt*_L_v*vvv*.cdb		NOT SAVED:
Output/alg3_dbr_CRA14_r*i*_s*n*_t*tttt*_M_v*vvv*.cdb		NOT SAVED:
Output/alg3_dbr_CRA14_r*i*_s*n*_t*tttt*_U_v*vvv*.cdb		NOT SAVED:
Output/bf2_dbr_CRA14_r*i*_s*n*_t*tttt*_L_v*vvv*.inp	$REP/CRA14/BRAGFLO_DBR	
Output/bf2_dbr_CRA14_r*i*_s*n*_t*tttt*_M_v*vvv*.inp	$REP/CRA14/BRAGFLO_DBR	
Output/bf2_dbr_CRA14_r*i*_s*n*_t*tttt*_U_v*vvv*.inp	$REP/CRA14/BRAGFLO_DBR	
Output/bf3_dbr_CRA14_r*i*_s*n*_t*tttt*_L_v*vvv*.cdb		NOT SAVED:
Output/bf3_dbr_CRA14_r*i*_s*n*_t*tttt*_M_v*vvv*.cdb		NOT SAVED:
Output/bf3_dbr_CRA14_r*i*_s*n*_t*tttt*_U_v*vvv*.cdb		NOT SAVED:
Output/gm_dbr_CRA14.cdb		NOT SAVED:
Output/ic_dbr_CRA14_r*i*_s*n*_t*tttt*_v*vvv*.cdb		NOT SAVED:
Output/ms_dbr_CRA14.cdb		NOT SAVED:
Output/rel1_dbr_CRA14_r*i*_s*n*_t*tttt*_v*vvv*.cdb		NOT SAVED:
Output/rel2_dbr_CRA14_r*i*_s*n*_t*tttt*_v*vvv*.cdb		NOT SAVED:
Output/sum_dbr_CRA14_r*i*_s*n*_t*tttt*_L.tbl	$REP/CRA14/SUMMARIZE	
Output/sum_dbr_CRA14_r*i*_s*n*_t*tttt*_M.tbl	$REP/CRA14/SUMMARIZE	
Output/sum_dbr_CRA14_r*i*_s*n*_t*tttt*_U.tbl	$REP/CRA14/SUMMARIZE	

Where:

i is 1-3
n is 1-5
ttttt is 00100, 00350, 01000, 03000, 05000, 10000 for S1
00550, 00750, 02000, 04000, 10000 for S2, S4
01200, 01400, 03000, 05000, 10000 for S3, S5
vvv is 001-100
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 37. The executable files used were:

File	Repository	Comment
Build/Solaris/algebracdb (Ver:2.36)	$CODE/ALGEBRACDB	Manipulates CAMDAT data by evaluating algebraic expressions
Build/Solaris/bragflo (Ver:6.03)	$CODE/BRAGFLO	Computes brine and gas flow in the repository
Build/Solaris/genmesh (Ver:6.10)	$CODE/GENMESH	Generates the CAMDAT computational grid
Build/Solaris/icset (Ver:2.23)	$CODE/ICSET	Assigns initial conditions to the CAMDAT grid elements
Build/Solaris/matset (Ver:9.22)	$CODE/MATSET	Assigns material properties to CAMDAT grid blocks
Build/Solaris/postbrag (Ver:4.02)	$CODE/POSTBRAG	Post-processes data for bragflo
Build/Solaris/postlhs (Ver:4.09)	$CODE/POSTLHS	Assigns sampled parameters to the grid

File	Repository	Comment
		blocks and elements
Build/Solaris/prebrag (Ver:8.03)	$CODE/PREBRAG	Pre-processes data for bragflo
Build/Solaris/relate (Ver:1.45)	$CODE/RELATE	Transfers CAMDAT data to another CAMDAT file
Build/Solaris/summarize (Ver:3.02)	$CODE/SUMMARIZE	Writes tables of data from many CAMDAT files

Where:

$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

CCDFGF
Summary of Files Used

Table 38. The run script files used were:

File	Repository	Comment
RunControl/CCDFGF.py	$REP/CRA14/CCDFGF	Python run control script
RunControl/CCDFGFlib.py	$REP/CRA14/CCDFGF	Python run control script class modules
RunControl/rc.py	$REP/CRA14/CCDFGF	Run control module
RunControl/Run.py	$REP/CRA14/CCDFGF	User shell script

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 39. The input files used were:

File	Repository	Comment
Input/ccgf_CRA14_control_*ri*.inp	$REP/CRA14/CCDFGF	Input file
Output/cusp_CRA14_*ri*.tbl	$REP/CRA14/CUTTINGS_S	Release table file
Output/epu_CRA14BL_ch.dat	/home/run_mast/GD/MyRepositories/CRA14BL/EPAUNI	Release table file
Output/epu_CRA14BL_rh.dat	/home/run_mast/GD/MyRepositories/CRA14BL/EPAUNI	Release table file
Input/gm_ccgf_CRA14.inp	$REP/CRA14/GENMESH	Input file
Input/intrusiontimes.in	$REP/CRA14/PRECCDFGF	Input file
Input/ms_ccgf_CRA14.inp	$REP/CRA14/MATSET	Input file
Output/sum_dbr_CRA14_*ri_so_tvvvvv*_L.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_dbr_CRA14_*ri_so_tvvvvv*_M.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_dbr_CRA14_*ri_so_tvvvvv*_U.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_nut_CRA14_*ri_so_tuuuuu*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_con_CRA14BV_b1_*ri_sn*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_con_CRA14BV_b2_*ri_sn*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_con_CRA14BV_b3_*ri_sn*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_con_CRA14BV_b4_*ri_sn*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_con_CRA14BV_b5_*ri_sn*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_int_CRA14BV_b1_*ri_sp_ttttt*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_st_CRA14BV_b1_*ri_sn*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_st_CRA14BV_b2_*ri_sn*.tbl	$REP/CRA14/SUMMARIZE	Release table file

File	Repository	Comment
Output/sum_panel_st_CRA14BV_b3_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_st_CRA14BV_b4_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_st_CRA14BV_b5_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_st2d_PABC09_r*i*_mf.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_st2d_PABC09_r*i*_mp.tbl	$REP/CRA14/SUMMARIZE	Release table file

Where:

i is 1-3
n is 1-2
o is 1-5
p is 6
ttttt is 00100, 00350, 01000, 02000, 04000, 06000, 09000
uuuuu is 0100 for s1
00100, 00350 for S2,S4
01000, 03000, 05000, 07000, 09000 for S3, S5
vvvvv is 00100, 00350, 01000, 03000, 05000, 10000 for S1
00550, 00750, 02000, 04000, 10000 for S2, S4
01200, 01400, 03000, 05000, 10000 for S3, S5
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 40. The CVS repositories used were:

CVS Repositories
$CODE/CCDFGF
$CODE/CCDFVECTORSTATS
$CODE/GENMESH
$CODE/MATSET
$CODE/POSTLHS
$CODE/PRECCDFGF
$REP/CRA14/CCDFGF
$REP/CRA14/CUTTINGS_S
$REP/CRA14/GENMESH
$REP/CRA14/MATSET
$REP/CRA14/PRECCDFGF
$REP/CRA14/SUMMARIZE
/home/run_mast/GD/MyRepositories/CRA14BL/EPAUNI

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES
$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

Table 41. The log files used were:

File	Repository	Comment
RunControl/CCDFGF.log	$REP/CRA14/CCDFGF	log file
RunControl/CCDFGF.rtf	$REP/CRA14/CCDFGF	Formatted log file (Word file)

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 42. The output files produced were:

File	Repository	Comment
Output/ccgf_CRA14_reltab_*ri*.dat	$REP/CRA14/PRECCDFGF	CCDFGF Reults
Output/ccgf_CRA14_*ri*.out	$REP/CRA14/CCDFGF	CCDFGF Reults
Output/gm_ccgf_CRA14.cdb		NOT SAVED:CDB transfer file
Output/lhs3_ccgf_CRA14_*ri*_*vvvv*.cdb		NOT SAVED:LHS file
Output/ms_ccgf_CRA14.cdb		NOT SAVED:CDB transfer file

Where:

i is 1-3
vvv is 001-100
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 43. The executable files used were:

File	Repository	Comment
Build/Solaris/ccdfgf (Ver:6.02)	$CODE/CCDFGF	Constructs complimentary cumulative distribution functions for radionuclide releases
Build/Solaris/ccdfvectorstats	$CODE/CCDFVECTORSTATS	Executable file
Build/Solaris/genmesh (Ver:6.10)	$CODE/GENMESH	Generates the CAMDAT computational grid
Build/Solaris/matset (Ver:9.22)	$CODE/MATSET	Assigns material properties to CAMDAT grid blocks
Build/Solaris/postlhs (Ver:4.09)	$CODE/POSTLHS	Assigns sampled parameters to the grid blocks and elements
Build/Solaris/preccdfgf (Ver:2.01)	$CODE/PRECCDFGF	Pre-processes data for ccdfgf

Where:

$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

Appendix 4: Files used for running CCDFGF Version 7.02

Summary of Files Used

Table 44. The run script files used were:

File	Repository	Comment
RunControl/CCDFGF.py	$REP/CRA14/CCDFGF	Python run control script
RunControl/CCDFGFlib.py	$REP/CRA14/CCDFGF	Python run control script class modules

File	Repository	Comment
RunControl/rc.py	$REP/CRA14/CCDFGF	Run control module
RunControl/Run.py	$REP/CRA14/CCDFGF	Main control script

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 45. The input files used were:

File	Repository	Comment
Input/ccgf_CRA14_control_r*i*.inp	$REP/CRA14/CCDFGF	Input file
Output/cusp_CRA14_r*i*.tbl	$REP/CRA14/CUTTINGS_S	Release table file
Output/epu_CRA14BL_ch.dat	/home/run_mast/GD/MyRepositories/CRA14BL/EPAUNI	Release table file
Output/epu_CRA14BL_rh.dat	/home/run_mast/GD/MyRepositories/CRA14BL/EPAUNI	Release table file
Input/gm_ccgf_CRA14.inp	$REP/CRA14/GENMESH	Input file
Input/intrusiontimes.in	$REP/CRA14/PRECCDFGF	Input file
Input/ms_ccgf_CRA14.inp	$REP/CRA14/MATSET	Input file
Output/sum_dbr_CRA14_r*i*_so_tvvvvv_L.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_dbr_CRA14_r*i*_so_tvvvvv_M.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_dbr_CRA14_r*i*_so_tvvvvv_U.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_nut_CRA14_r*i*_so_t*uuuuu*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_con_CRA14BV_b1_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_con_CRA14BV_b2_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_con_CRA14BV_b3_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_con_CRA14BV_b4_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_con_CRA14BV_b5_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_int_CRA14BV_b1_r*i*_s*p*_t*ttttt*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_st_CRA14BV_b1_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_st_CRA14BV_b2_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_st_CRA14BV_b3_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_st_CRA14BV_b4_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_panel_st_CRA14BV_b5_r*i*_s*n*.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_st2d_PABC09_r*i*_mf.tbl	$REP/CRA14/SUMMARIZE	Release table file
Output/sum_st2d_PABC09_r*i*_mp.tbl	$REP/CRA14/SUMMARIZE	Release table file

Where:

i is 1-3
n is 1-2
o is 1-5
p is 6
ttttt is 00100, 00350, 01000, 02000, 04000, 06000, 09000
uuuuu is 0100 for s1
00100, 00350 for S2,S4
01000, 03000, 05000, 07000, 09000 for S3, S5
vvvvv is 00100, 00350, 01000, 03000, 05000, 10000 for S1
00550, 00750, 02000, 04000, 10000 for S2, S4
01200, 01400, 03000, 05000, 10000 for S3, S5
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 46. The CVS repositories used were:

CVS Repositories
$CODE/CCDFGF
$CODE/CCDFVECTORSTATS
$CODE/GENMESH
$CODE/MATSET
$CODE/POSTLHS
$CODE/PRECCDFGF
$REP/CRA14/CCDFGF
$REP/CRA14/CUTTINGS_S
$REP/CRA14/GENMESH
$REP/CRA14/MATSET
$REP/CRA14/PRECCDFGF
$REP/CRA14/SUMMARIZE
/home/run_mast/GD/MyRepositories/CRA14BL/EPAUNI

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES
$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES

Table 47. The log files used were:

File	Repository	Comment
RunControl/CCDFGF.log	$REP/CRA14/CCDFGF	log file
RunControl/CCDFGF.rtf	$REP/CRA14/CCDFGF	Formatted log file (Word file)

Where:

$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 48. The output files produced were:

File	Repository	Comment
Output/ccgf_CRA14_reltab_*ri*.dat	$REP/CRA14/PRECCDFGF	CCDFGF Reults
Output/ccgf_CRA14_*ri*.out	$REP/CRA14/CCDFGF	CCDFGF Reults
Output/gm_ccgf_CRA14.cdb		NOT SAVED:CDB transfer file
Output/lhs3_ccgf_CRA14_*ri*_v*vvv*.cdb		NOT SAVED:LHS file
Output/ms_ccgf_CRA14.cdb		NOT SAVED:CDB transfer file

Where:

i is 1-3
vvv is 001-100
$REP = /nfs/data/CVSLIB/WIPP_ANALYSES

Table 49. The executable files used were:

File	Repository	Comment
Build/Solaris/ccdfgf (Ver:7.02)	$CODE/CCDFGF	Constructs complimentary cumulative distribution functions for radionuclide releases
Build/Solaris/ccdfvectorstats	$CODE/CCDFVECTORSTATS	Executable file
Build/Solaris/genmesh (Ver:6.10)	$CODE/GENMESH	Generates the CAMDAT computational grid
Build/Solaris/matset (Ver:9.22)	$CODE/MATSET	Assigns material properties to CAMDAT grid blocks
Build/Solaris/postlhs (Ver:4.09)	$CODE/POSTLHS	Assigns sampled parameters to the grid blocks and elements
Build/Solaris/preccdfgf (Ver:2.01)	$CODE/PRECCDFGF	Pre-processes data for ccdfgf

Where:

$CODE = /nfs/data/CVSLIB/WIPP_CODES/PA_CODES