Appendix K: FY14 Annual Well Networks Update Report

ANNUAL WELL NETWORKS UPDATE SUMMARY FOR FY2014

April 2015

The FY2014 Annual Well Networks Update Summary includes information on newly installed wells, closed wells, damaged/repaired network wells, and updates to the Rocky Mountain Arsenal Environmental Database (RMAED) Mapfile, Wellinfo, Wellextra, and Well_Networks tables from 1 October 2013 through 30 September 2014.

UPDATES TO THE RMAED TABLES RELATED TO THE WELL NETWORKS

- Information in the RMAED was updated for 12 wells in the **well_network_purpose** table. No changes were made to the other tables as indicated below. See the summary table on the next page for the list of purpose updates in the **well_network_purpose** table.

- Wells which were updated in **wellinfo:**

    - Not applicable in FY2014.

- Wells which were updated in **wellextra:**

    - Not applicable in FY2014.

- Wells which were updated in **mapfile:**

    - Not applicable in FY2014.

NETWORK WELLS CLOSED OR CANCELED

- Not applicable in FY2014.

NETWORK WELLS DAMAGED/REPAIRED

- Not applicable in FY2014.

NETWORK WELLS INSTALLED

- Not applicable in FY2014.

NETWORK WELLS WITH UPDATED PURPOSES

- Occasionally, updates to well purposes are approved for existing wells within the network. During FY2014, the following well were updated with additional purposes:

Well ID	New Purpose	New Frequency	Date of Update
01049	Post Shut-off/WQ	One-time	05-13-2014
01312	Post Shut-off/WQ	Twice in 5 years	05-13-2014
01312	Monitoring/WL	Annual	05-05-2014
01600	Post Shut-off/WQ	Annual	05-13-2014
01670	Post Shut-off/WQ	Annual	05-13-2014
01687	Post Shut-off/WQ	Annual	05-13-2014
26307	Performance/WQ	Annual	05-13-2014
35301	Performance/WQ	Annual	05-13-2014
35302	Performance/WQ	Annual	05-13-2014
35303	Performance/WQ	Annual	05-13-2014
35304	Performance/WQ	Annual	05-13-2014
35305	Performance/WQ	Annual	05-13-2014
35306	Performance/WQ	Annual	05-13-2014

Appendix L: Lab Codes, Flag Codes, and Chemical Codes

Laboratory and Organization Codes

Code	Description
AR	Applied Research and Development Laboratory, Inc.
GS	U.S. Geological Survey
NR	Navarro Research and Engineering, Inc.
SA	South Adams County Water and Sanitation District
TO	Tri-County Health Department
WG	URS (formerly Washington Group International)

Flag Codes

Code	Description
@	Value is estimated. To be used only when result is above the reporting limit of the method and the sample cannot be diluted and reanalyzed (i.e., volatile organics in air), and when the LCS, MS, and surrogate results are below the MRL but are "real."
B	Analyte found in blank as well as sample. This flagging code is to be used for analytes which are found and quantitated above the Reporting Limit (RL) or at higher-than-normal background levels in the method blank and also in analytical samples.
D	Duplicate sample or test name. This flagging code is to be used to distinguish analytical results when duplicate analyses are requested. This flagging code should be used for the second (duplicate) sample only.
F	Sample filtered before analysis. This flagging code is to be used when the results of filtered samples are to be differentiated from non-filtered samples, or when (required) filtering of samples is a deviation from the SOP.
I	Sample results may be biased high or low based on QC results.

Chemical Codes

111TCE 1,1,1-Trichloroethane
112TCE 1,1,2-Trichloroethane
11DCE 1,1-Dichloroethylene
11DCLE 1,1-Dichloroethane
124TCB 1,2,4-Trichlorobenzene
12DCLB 1,2-Dichlorobenzene
12DCLE 1,2-Dichloroethane
12DCLP 1,2-Dichloropropane
12DMB 1,2-Dimethylbenzene
13DCLB 1,3-Dichlorobenzene
14DCLB 1,4-Dichlorobenzene
14DIOX 1,4-Dioxane
245TCP 2,4,5-Trichlorophenol
246TCP 2,4,6-Trichlorophenol
24DCLP 2,4-Dichlorophenol
24DMPN 2,4-Dimethylphenol
24DNP 2,4-Dinitrophenol
24DNT 2,4-Dinitrotoluene
26DNT 2,6-Dinitrotoluene
2CLP 2-Chlorophenol
2CNAP 2-Chloronaphthalene
2MNAP 2-Methylnaphthalene
2MP 2-Methylphenol
2NANIL 2-Nitroaniline
2NP 2-Nitrophenol
33DCBD ..... 3,3'-Dichlorobenzidine
34MPH 3,4-Methylphenol
3NANIL 3-Nitroaniline
46DN2C 2-Methyl-4,6-dinitrophenol
4BRPPE ..... 4-Bromophenylphenyl ether
4CANIL 4-Chloroaniline
4CL3C 3-Methyl-4-chlorophenol
4CLPPE ..... 4-Chlorophenylphenyl ether
4NANIL 4-Nitroaniline
4NP 4-Nitrophenol
ABHC ..... alpha-Benzenehexachloride
ACET ..... Acetone
ACLDAN ..... alpha-Chlordane
ACRYLO ..... Acrylonitrile
AENSLF ..... alpha-Endosulfan
AG ..... Silver
AL ..... Aluminum
ALDRN ..... Aldrin

ANAPNE ..... Acenaphthene
ANAPYL ..... Acenaphthylene
ANTRC ..... Anthracene
AS ..... Arsenic
ATZ ..... Atrazine
B2CEXM ..... Bis (2-chloroethoxy) methane
B2CIPE ..... Bis (2-chloroisopropyl) ether
B2CLEE ..... Bis (2-chloroethyl) ether
B2EHP ..... Bis (2-ethylhexyl) phthalate
BA ..... Barium
BAANTR ..... Benzo[A]anthracene
BAPYR ..... Benzo[A]pyrene
BBFANT ..... Benzo[B]fluoranthene
BBHC ..... beta-Benzenehexachloride
BBZP ..... Butylbenzyl phthalate
BCHPD ..... Bicyclo[2,2,1]hepta-2,5-diene
BE ..... Beryllium
BENSLF ..... beta-Endosulfan
BGHIPY ..... Benzo[G,H,I]perylene
BKFANT ..... Benzo[K]fluoranthene
BRDCLM ..... Bromodichloromethane
BTZ ..... Benzothiazole
C12DCE cis-1,2-Dichloroethylene
C13DCP cis-1,3-Dichloropropylene
C2H3CL ..... Chloroethene/Vinyl chloride
C2H5CL ..... Chloroethane
C6H6 ..... Benzene
CA ..... Calcium
CCL2F2 ..... Dichlorodifluoromethane
CCL3F ..... Trichlorofluoromethane
CCL4 ..... Carbon tetrachloride
CD ..... Cadmium
CH2CL2 ..... Methylene chloride
CH3BR ..... Bromomethane
CH3CL ..... Chloromethane
CHBR3 ..... Bromoform
CHCL3 ..... Chloroform
CHRY ..... Chrysene
CL ..... Chloride
CL6BZ ..... Hexachlorobenzene
CL6CP ..... Hexachlorocyclopentadiene
CL6ET ..... Hexachloroethane
CLC6H5 ..... Chlorobenzene
CO ..... Cobalt
CPMS ..... Chlorophenylmethyl sulfide
CPMSO ..... Chlorophenylmethyl sulfoxide

CPMSO2 ..... Chlorophenylmethyl sulfone
CR ..... Chromium
CS2 ..... Carbon disulfide
CU ..... Copper
DBAHA ..... Dibenz[A,H]anthracene
DBCP ..... Dibromochloropropane
DBHC ..... delta-Benzenehexachloride
DBRCLM ..... Dibromochloromethane
DBZFUR ..... Dibenzofuran
DCPD ..... Dicyclopentadiene
DDVP ..... Vapona
DEP ..... Diethyl phthalate
DIMP ..... Diisopropylmethyl phosphonate
DITH ..... Dithiane
DLDRN ..... Dieldrin
DMDS ..... Dimethyl disulfide
DMMP ..... Dimethylmethylphosphate
DMP ..... Dimethyl phthalate
DNBP ..... Di-N-butyl phthalate
DNOP ..... Di-N-octyl phthalate
ENDRN ..... Endrin
ENDRNA ..... Endrin aldehyde
ENDRNK ..... Endrin ketone
ESFSO4 ..... Endosulfan sulfate
ETC6H5 ..... Ethylbenzene
F ..... Fluoride
FANT ..... Fluoranthene
FE ..... Iron
FLRENE ..... Fluorene
GCLDAN ..... gamma-Chlordane
HCBD ..... Hexachlorobutadiene
HG ..... Mercury
HPCL ..... Heptachlor
HPCLE ..... Heptachlor epoxide
ICDPYR ..... Indeno[1,2,3-C,D]pyrene
ISODR ..... Isodrin
ISOPHR ..... Isophorene
K ..... Potassium
LIN ..... Lindane
MEC6H5 ..... Toluene
MEK ..... Methylethyl ketone

MEXCLR ..... Methoxychlor
MG ..... Magnesium
MIBK ..... Methylisobutyl ketone
MLTHN ..... Malathion
MN ..... Manganese
MNBK ..... Methyl-N-butyl ketone
NA ..... Sodium
NAP ..... Naphthalene
NB ..... Nitrobenzene
NI ..... Nickel
NDMA or NNDMEA ..... n-Nitrosodimethylamine
NNDNPA ..... n-Nitrosodi-n-propylamine
NNDPA ..... n-Nitrosodiphenylamine
NO3 ..... Nitrate
OXAT 1,4-Oxathiane
PB ..... Lead
PCP ..... Pentachlorophenol
PHANTR ..... Phenanthrene
PHENOL ..... Phenol
PPDDD ..... Dichlorophenyldichloroethane
PPDDE ..... Dichlorophenyldichloroethene
PPDDT ..... Dichlorophenyltrichloroethane
PRTHN ..... Parathion
PYR ..... Pyrene
SB ..... Antimony
SE ..... Selenium
SO4 ..... Sulfate
STYR ..... Styrene
SULFID ..... Sulfide
SUPONA ..... Supona
T12DCE trans-1,2-Dichloroethene
T13DCP trans-1,3-Dichloropropene
TCLEA 1,1,2,2-Tetrachloroethane
TCLEE ..... Tetrachloroethylene
TL ..... Thallium
TOC ..... Total organic carbon
TOX ..... Total organic halogens
TRCLE ..... Trichloroethylene
TXPHEN ..... Toxaphene
V ..... Vanadium
XYLEN ..... Xylenes
ZN ..... Zinc

Appendix M: Statistical Computational Guidelines

Statistical Computational Guidelines for Treatment Plant Effluent Data

Note: No stat codes were applied to any data in this quarterly report. All other calculations and data reporting procedures still apply whenever applicable.

During FY14 groundwater was analyzed at each treatment plant as well as nearby monitoring wells, and the results were monitored for compliance using the containment system remediation goals (CSRGs) or the practical quantitation limits (PQLs) as listed in the Record of Decision in 1996. All of the analytical results are located in Excel files on the enclosed CD. Analytical results were listed in tables and some were plotted on charts and maps using the data contained on the CD. The data were averaged and plotted using the following computational guidelines.

Some analytical results were excluded from the computations because the results (e.g., rejected data) were not appropriate when computing statistical values. However, all of the analytical results are listed in the Excel files on the enclosed CD. Guidelines and associated stat codes used to plot data and compute average values are explained below.

1. Generally, specific analytical methods with reporting limits (RLs) less than respective CSRG values were used to analyze specific compounds. Sometimes GC/MS methods also produce results for non-specified analytes, like DBCP. When that occurs, the **G1** stat code is applied to that type of data. None of the data in this report required the **G1** stat code.

Note: All analytical results with values greater than the RL are called "hits" and are included in all computations and charts regardless of the analytical method used.

2. One-half the RL value was used to compute averages for samples with values less than the RL.

3. If there were multiple samples in a given quarter, then an average for the quarter was first computed. The yearly average was then computed by summing the quarterly averages and then dividing by the number of quarters.

4. Guidelines for computing daily averages for multiple samples taken <u>on the same day</u>:

    a. If multiple samples were taken on the same day, and if all results were "less than the RL," then the lowest RL value was used to compute averages. Higher RL values or duplicate RL values were coded with stat code **G2** and excluded from any computations. None of the data in this report required the **G2** stat code.

    b. If multiple samples were taken on the same day, and if some results were "less than the RL" and some results were "hits" with values greater than the RL, then both results were used to compute averages (using one-half the RL for samples with values less than the RL). None of the data in this report required this calculation.

    c. If multiple samples were taken on the same day, and if there were sample results "less than the RL" where the RL was greater than "hits" from a different method, then the results "less than the RL" were coded with stat code **G3** and excluded from any computations. None of the data in this report required the **G3** stat code.

d. For multiple hits on the same day, all of the values were used to compute averages. A daily average was first computed and this daily average was then used to compute an average for the quarter. None of the treatment plant data in this report required this calculation.

5. Sample results with a Boolean of "GT" are coded with stat code **G4** and excluded from any computations. None of the treatment plant data in this report required the **G4** stat code.

6. Analytical data in the Environmental Database are subject to updates as a result of continuing quality assurance review. This report reflects the most recent status of analytical data in the database.