ECF-200W-16-0092
Revision 1

Calculation of Three-Dimensional Groundwater Concentration Plumes for 200-West for Calendar Year (CY) 2015

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

Contractor for the U.S. Department of Energy
under Contract DE-AC06-08RL14788

CH2MHILL
Plateau Remediation Company

P.O. Box 1600
Richland, Washington 99352

Approved for Public Release;
Further Dissemination Unlimited

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APPROVED
By Janis D. Aardal at 11:22 am, Apr 16, 2019

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ENVIRONMENTAL CALCULATION COVER PAGE

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ENVIRONMENTAL CALCULATION COVER PAGE (Continued)

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Terms

3D	three-dimensional
ASCII	American Standard Code for Information Interchange
CHPRC	CH2M HILL Plateau Remediation Company
COC	contaminant of concern
CPGWM	Central Plateau Groundwater Model
CY	calendar year
DOE	U.S. Department of Energy
ECF	environmental calculation file
GSLIB	Geostatistical Software Library
GWD	GroundWater Desktop
HEIS	Hanford Environmental Information System
OK	ordinary kriging
OU	operable unit
P&T	pump and treat
SSP&A	S.S. Papadopulos & Associates, Inc.
TCE	trichloroethene
USGS	U.S. Geological Survey

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1 Purpose

This environmental calculation file (ECF) describes methods, data, and calculations made to estimate and delineate contaminant plumes for contaminants of concern (COCs) in the 200-ZP-1 and 200-UP-1 groundwater Operable Units (OUs) of the U.S. Department of Energy (DOE) Hanford Site. The main objective of this ECF is to update three-dimensional (3D) depictions of contaminant extent generated during calendar year (CY) 2012, using more recently obtained data and information. These updated depictions may then be used as initial conditions for predictive simulations in support of performance evaluations of the groundwater pump and treat (P&T) remedies in place at the 200-ZP-1 and 200-UP-1 groundwater OUs presented in DOE/RL-2016-20, *Calendar Year 2015 Annual Summary Report for the 200-ZP-1 and 200-UP-1 Operable Unit Pump and Treat Operations*.

2 Background

The 3D plume depictions and corresponding groundwater model initial conditions used in CP-47631, *Model Package Report: Central Plateau Groundwater Model, Version 3.3* (hereafter called the Central Plateau Groundwater Model [CPGWM]) simulations were developed in 2012 as detailed in ECF-200ZP1-13-0006, *Description of Groundwater Modeling Calculations for the Calendar Year 2012 (CY2012) 200 Areas Pump-and-Treat Report*. At that time, the 200-ZP-1 groundwater P&T remedy had not been operating for sufficient time to provide an extended mass-recovery data set to help evaluate the accuracy of the initial conditions.

Since that time, by comparing historical simulated and reported mass removal, it was determined that simulated mass recovery is generally lower compared to actual reported mass recovery. Furthermore, because the data used to prepare those 3D extents are now several years old, it was determined that the 3D depictions should be updated using data obtained through CY 2015 to provide more current initial conditions for predictive transport simulations needed in the CY 2015 P&T annual report (DOE/RL-2016-20), and in subsequent annual P&T reports. That work was completed during CY 2016 in support of the CY 2015 P&T annual report.

During CY 2017, the CPGWM (CP-47631, Rev. 4, *Model Package Report: Central Plateau Groundwater Model, Version 8.4.5*) was updated with new information regarding the aquifer geology, resulting in changes to the layer elevations within the model and a subsequent recalibration effort. For consistency with these updates to the CPGWM, the 3D plume depictions for CY 2015 developed using the previous (Rev. 3) release of the CPGWM require updating so that Rev. 4 of the CPGWM can be used to support calculations for the CY 2017 annual P&T report.

This Revision 1 release of ECF-200W-16-0092 updates calculations presented in the first revision of this ECF, ECF-200W-16-0092, Rev. 0. The methods and data presented in the next 4 sections are unchanged from that presented in ECF-200W-16-0092, Rev. 0, with the exception of some of the parameters presented in Table 1. Furthermore, upon completion of the process described in Sections 3 through 6, flow and transport simulations were performed using the CPGWM (CP-47631, Rev. 4), as described in ECF-200ZP1-16-0076, *Description of Groundwater Calculations and Assessments for the Calendar Year 2015 (CY 2015) 200 Areas Pump and Treat Report*, to develop the depictions for each COC at the end of fiscal year 2015 as presented in Section 7 of this Revision 1 to ECF-200W-16-0092.

3 Methodology

This chapter presents the procedure for developing 3D plume depictions. Chapter 4 presents the methods and data assumptions underlying this methodology and the inputs required for the calculations.

The approximate current extent of each COC in groundwater was mapped in 3D using a kriging. The results of previous groundwater modeling calculations (ECF-200ZP1-16-0076) were also used as input. The following general steps are included in the mapping process:

1. The migration of each 3D COC plume mapped in CY 2012 (ECF-200ZP1-13-0006), and previously used as an initial condition for modeling, was simulated using the CPGWM, as detailed in ECF-200ZP1-16-0076. The purpose of this step was to migrate the depiction of each COC that was prepared in CY 2012 for 3 years (representing January 2012 through December 2014) to provide an approximate distribution of each COC at the beginning of CY 2015.

2. The average sampled value of each COC obtained from monitoring wells and via characterization data between January 2014 and December 2015 was calculated to represent the best estimate of the COC concentration at each location at the beginning of CY 2015.

3. The difference between the average sample result calculated in Step 2 and the corresponding simulated value obtained in Step 1 was calculated. This “residual” was then handled differently for monitoring wells and extraction wells, as follows:

    a. For monitoring wells, from which a small-volume “point” sample is obtained, the difference was calculated at each monitoring location as the ratio between the average sample result obtained under Step 2 and the simulated value as calculated under Step 1.

    b. For extraction wells, which remove large volumes of water and as such integrate conditions over a large area of the aquifer, the difference was calculated at each extraction well as the ratio between the measured mass recovery during CY 2015 calculated by multiplying the flow rate by the influent port concentration and the simulated mass recovery obtained under Step 1. In the event that the simulated recovery rate is equal to zero due to the nonexistence of the 2012 initial plume, the residual ratio was calculated using the same method used for monitoring wells.

4. The differences calculated in Step 3 represent a 3D scatter of points that depict the relative difference (in terms of a ratio) between expected values based upon the simulated migration of the CY 2012 initial condition over time and the average sampled value between January 2014 and December 2015. This 3D scatter of difference ratios was interpolated using kriging to provide a 3D depiction of the relative difference between the expected (simulated) and measured (sampled) values for each COC throughout the 200 West Area.

5. The 3D relative difference depiction was then multiplied by the simulated individual COC depiction for end of December 2014, providing a 3D depiction of the extent of COC that generally honors the recently sampled COC values, while reflecting patterns in the distribution of COC that were present in the more comprehensive sample data set used to depict each COC in CY 2012.

3.1 Data Acquisition and Overview

The Hanford Environmental Information System (HEIS) was queried using Microsoft Access® for eight groundwater constituent concentration measurements collected between January 1, 2014 and December 31, 2015. This data set includes concentrations of chemical constituents in groundwater, measured across the 200-ZP-1 and 200-UP-1 OUs. These constituents are carbon tetrachloride, hexavalent chromium, nitrate (as NO_3), trichloroethene (TCE), iodine-129, technetium-99, uranium, and tritium. The available data were reviewed to identify representative values for each contaminant in the aquifer during CY 2014 and CY 2015. This data set was complemented by additional data, including

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reported monthly mass recovery rates for each COC (DOE/RL-2016-20). Chapter 4 discusses the details of the final data set used as input for kriging; Appendix A provides tables of input data.

3.2 Data Types

Data from CY 2014 and CY 2015 were combined yielding a 24-month range from January 1, 2014, to December 31, 2015. This data selection period was used for all wells with the exception of those used to provide vertical profiles for the 3D mapping; the following three categories of data were considered:

- **Data Category 1**: Wells included in the 200-ZP-1 network identified in DOE/RL-2009-115, *Performance Monitoring Plan for the 200-ZP-1 Groundwater Operable Unit Remedial Action*
- **Data Category 2**: Wells in the 200-ZP-1 and 200-UP-1 OUs sampled for other programs
- **Data Category 3**: Depth-profile data from 200 West extraction and injection wells obtained during drilling

Appendix A lists the compiled data sets used as input to the interpolation process.

3.3 Numerical Interpolation

Kriging was accomplished using the S.S. Papadopulos & Associates, Inc. (SSP&A) program QUANTILE (SSP&A, 2014, *User's Guide for Interpolation using QUANTILE, Version 1.2*) that is based upon the U.S. Geological Survey (USGS) kriging routines of Skrivan and Karlinger, 1980, *Semi-Variogram Estimation and Universal Kriging Program*. QUANTILE is programmed in Fortran© 90/95 using a modular program structure. It has been developed to be independent of any specific computer platform, requiring simple American Standard Code for Information Interchange (ASCII) input files and producing ASCII output files. QUANTILE incorporates routines to implement ordinary kriging (OK) directly on input values or to conduct logarithmic, quantile, or categorical indicator data transforms. It then undertakes OK of the transformed values and completes the necessary back transformations. QUANTILE undertakes spatial interpolation in 3D.

3.4 Variogram Parameters

Qualitatively, the variogram (or semivariogram) is a descriptor of how the relationship between two values sampled from a random field changes with increasing separation distance of their sampled locations. Quantitatively, if the random field exhibits a constant mean, then the spatial relationship is described in terms of the variance of the difference between the sampled values at the two locations. Chilès and Delfiner, 1999, *Geostatistics: Modeling Spatial Uncertainty*, among others, provide detailed descriptions and examples of the types, construction, and application of variograms.

The interpolation program used to create the plume maps in this ECF uses the variogram subroutines provided as part of the Geostatistical Software Library (GSLIB) (Deutsch and Journel, 1992, *GSLIB: Geostatistical Software Library and User's Guide*). As a result, the definition of the variogram structures used by the program follows the protocols detailed in the GSLIB user's guide.

Variograms are generally presented as one-dimensional curves that depict the theoretical (semi-) variance versus separation distance (h). For the interpolation described in this ECF, only single-structure variograms were used. A single-structure variogram used for purposes of 3D interpolation can be defined in terms of the following parameters (Figure 1):

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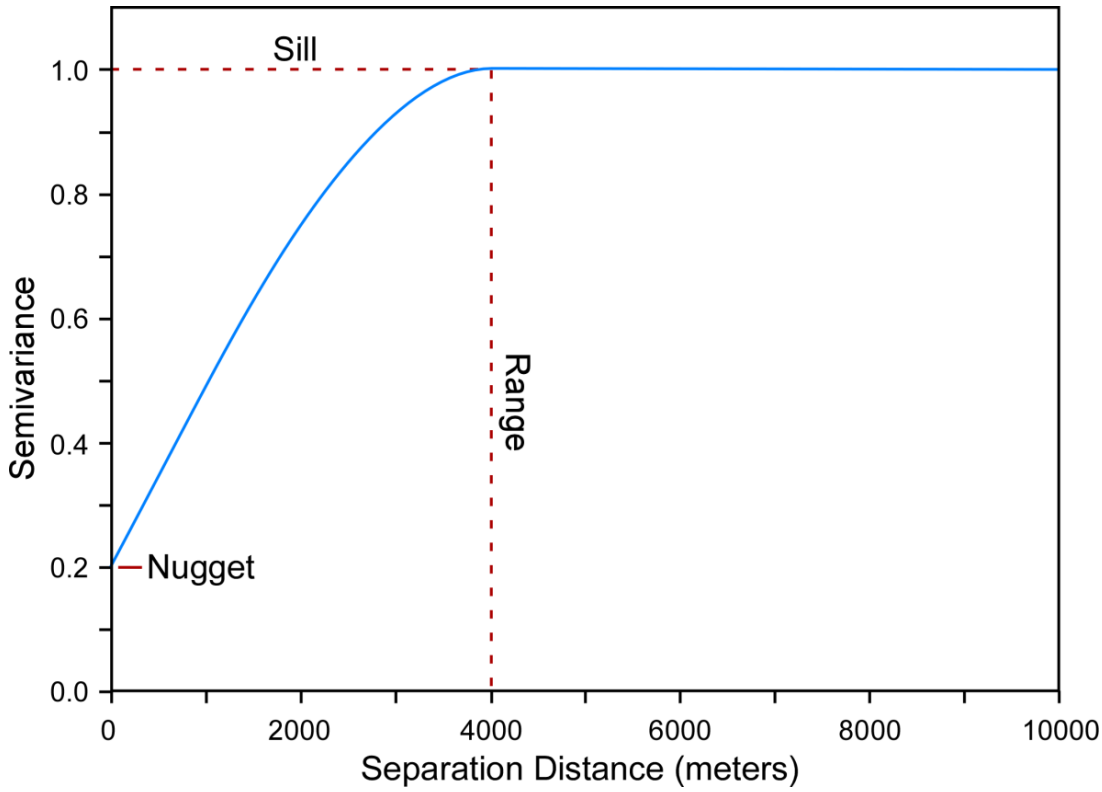
- Sill – the value of the (semi)variance at which the variogram levels off (i.e., in a single-structure variogram, this is equivalent to the total [semi]variance).
- Range – the distance at which the semivariogram reaches the sill value.
- Nugget – small-scale variability that occurs within separate distances smaller than the typical sample spacing. The nugget typically incorporates measurement and/or sample support error(s).

The most common variogram structures, and those which are implemented within the GSLIB routines, are the spherical (use actual range), exponential (use practical range), Gaussian (use practical range), power law, and hole effect variogram structures.



Source: Bohling, 2005, *Introduction to Geostatistics And Variogram Analysis*.

Figure 1. Schematic of a Modeled Semivariogram

4 Assumptions and Inputs

Assumptions and inputs that underlie the calculations presented in this brief are discussed in the following subsections.

4.1 Assumptions and Limitations

Assumptions and limitations of the sampling and supporting data that are used to form the inputs to the contaminant plume mapping are summarized below:

- The data set used as input to the mapping procedure is representative of the extent of contamination in the aquifer for the corresponding COC and OU. Other points were incorporated in the form of either

previous sampling results or values that are considered representative, given the scale of the contaminant plume(s) and the rate(s) of migration of contamination over time.

Assumptions and limitations of the contaminant plume interpolation approaches that are used to prepare the plume maps are summarized below:

- With regard to the depicted lateral extents of contamination, the distribution of contaminants in groundwater is reasonably well represented by the qualified data used as inputs.
- In the absence of replicates (i.e., multiple values at one location) or small-scale variance – such as measurement errors – represented using a nugget, OK honors the sample data values at the sampled locations. However:
  - When interpolating to a grid for mapping purposes, this is not guaranteed.
  - Because the interpolation data set can include data over a period of two years, the resulting map does not necessarily represent an actual "instantaneous" condition within the aquifer, but rather provides a representative composite depiction.
- Studies by other investigators (e.g., Reed et al., 2004, "Spatial Interpolation Methods for Nonstationary Plume Data") suggest that use of OK together with data transformations – such as quantile kriging – produces robust interpolation results, which mitigate bias due to highly skewed data and/or variations in the spacing of measured data (i.e., data support). However, data transforms generally lead to median-unbiased estimators that may, depending on the true distribution of the data, underestimate the contaminant mass.
- Interpolation for different COCs within the same OU may be conducted using different variogram parameters. As mentioned earlier, no experimental variograms were developed during that process. Instead, variogram models were developed in collaboration with the project scientists to ensure that plume depictions comport with the conceptual model of historical plume migration. The interpolation procedure guarantees that development of plume depictions is traceable and repeatable, provided that input data and parameters remain unchanged.

4.2 Inputs

The inputs described in this section were used to develop the 3D COC distributions.

4.2.1 Concentration Data

HEIS was queried on March 14, 2016, using a Microsoft Access® Open Data-Base Connectivity module for all groundwater constituent concentration measurements collected between October 7, 1951, and December 31, 2015. This data set included concentrations of chemical constituents and physical parameters in groundwater, measured across the Hanford Site, in monitoring wells, injection wells, extraction wells, and aquifer tubes from October 7, 1951, to December 31, 2015 (3,779,686 records). Spatial coordinates, location type, and construction information for all chemical concentration measurement locations were also queried from the HEIS database on March 14, 2016. This comprehensive data set was then reviewed, processed, and reduced as detailed in Sections 3.1 and 3.2 to provide the inputs listed in Appendix A.

4.2.2 Variogram Parameters

Table 1 lists the variogram parameters used for developing 3D plume depictions based on the Kriging input data in Appendix A.

Table 1. List of Variogram Parameters Used in 3D Interpolation

COC	Transformation Type	Semivariogram Type	Range	Horizontal Anisotropy	Vertical Anisotropy	Sill	Nugget
Technetium-99	Log	Spherical	1200	1.0	0.04	10	0
Uranium	Log	Spherical	800	1.0	0.5	0.1	0.01
TCE	Log	Spherical	1,200	1.0	0.04	1.1	0
Tritium	Quantile	Exponential	1.600	1.0	0.04	3	0
Chromium	Log	Exponential	700	1.0	0.06	3	0
Carbon Tetrachloride	Quantile	Spherical	1,300	1.0	0.06	0.11	0
Iodine-129	Quantile	Exponential	700	1.0	0.08	0.10	0
Nitrate	Log	Exponential	800	1.0	0.04	1	0

3D = three-dimensional
COC = contaminant of concern

5 Software

Software use for this ECF was in accordance with PRC-PRO-IRM-309, *Controlled Software Management*.

5.1 Approved Software

Software was run on an SSP&A workstation (property number FE449).

5.1.1 QUANTILE

The QUANTILE program (SSP&A, 2014) is an approved utility calculation software that is used to perform the spatial interpolation of sampled contaminant concentration data that is detailed in this ECF. QUANTILE is a Fortran© program based upon the USGS kriging routines of Skrivan and Karlinger (1980). QUANTILE incorporates routines to conduct the logarithmic, quantile and categorical data transforms, undertake OK of the transformed values, and complete the necessary back-transformations. Quantile also supports Simple Kriging of untransformed data values. QUANTILE is a program for spatial interpolation in two dimensions programmed in Fortran© 90/95 using a modular program structure. It has been developed to be independent of any specific model platform, requiring simple ASCII input files and producing ASCII output files.

QUANTILE is managed for CH2M HILL Plateau Remediation Company (CHPRC) use under CHPRC-02087, *QUANTILE Software Management Plan*, and is graded as level D software with the assigned Hanford Information Systems Inventory Identification Number 3500. Acceptance test results for this version of the QUANTILE software are reported in CHPRC-02088, *QUANTILE Acceptance Test Report*.

5.1.2 Support Software

The following programs are used as supporting software while conducting this ECF:

- **GroundWater Desktop:** The QUANTILE program was updated to support interpolations in 3D, and it was incorporated in commercially available software (SSP&A, 2017, *GroundWater Desktop: User Manual, Version 3.00*), hereafter called GroundWater Desktop (GWD). GWD allows for visualization of input data, variograms and interpolated plumes in 3D. GWD also supports 3D interpolation on regular or irregular grids and generates outputs in formats that can be directly used for numerical transport simulations.
- **Conctarg**: Fortran©-based program for post-processing files generated from numerical transport simulations, for obtaining simulated concentrations at selected locations.
- **AddResiduals**: Fortran©-based post-processing program used for generating initial concentrations arrays by multiplying 3D depictions of the relative difference between the expected (simulated) and measured (sampled) values for each COC, with simulated individual COC depictions for December 2014.

5.2 Statement of Valid Software Application

QUANTILE was used in a manner consistent with their intended use and are valid uses of these software for the problems addressed in this ECF. Support software is validated during calculation checking process.

6 Calculations

Calculations for developing 3D COC distributions are presented in this chapter.

6.1 Three-Dimensional Kriging

The following steps were executed to run the kriging and produce new 3D plume depictions, providing input files for transport simulations that start in January 2015:

1. Input data preparation: Input data were compiled from the retrieved database sources. The inputs for 3D kriging were prepared differently for monitoring wells and extraction wells as detailed in Chapter 3.
2. Kriging: The 3D scatter of difference ratios (calculated as described in Chapter 3) was interpolated to generate a 3D depiction of the relative difference between the expected (simulated) and measured (sampled) values for each COC throughout the 200 West Area.
3. Post-processing: Using program AddResiduals.exe, each interpolated 3D distribution of relative differences (obtained via Step 2) was multiplied by the corresponding simulated individual COC depiction for December 2014.

6.2 Comparison of Simulated Mass Recoveries

Upon completion of the process described in Section 6.1, flow and transport simulations were performed, as described in ECF-200ZP1-16-0076, to develop the simulated depiction of each COC at the end of fiscal year 2015 using CPGWM.

7 Results/Conclusions

Figures 2 through 17 show two-dimensional maximum footprints of the initial conditions, developed in CY 2012, and a comparison of each of those depictions to the corresponding maximum footprints of the initial conditions generated using the methodology described in this ECF.

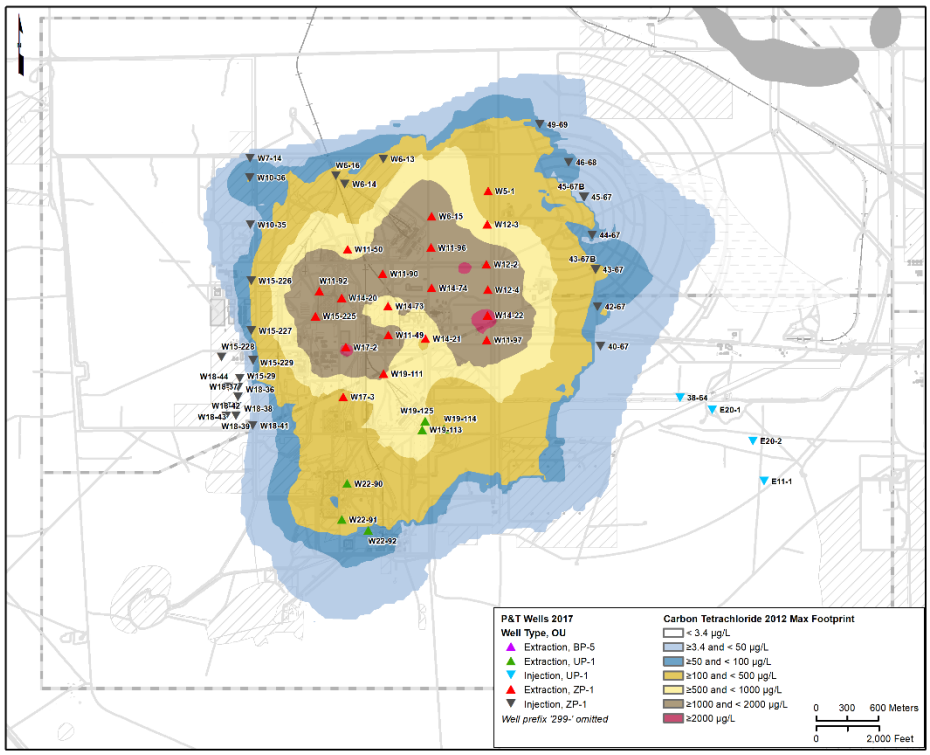


Figure 2. Maximum Footprint – 2012 Initial Conditions: Carbon Tetrachloride

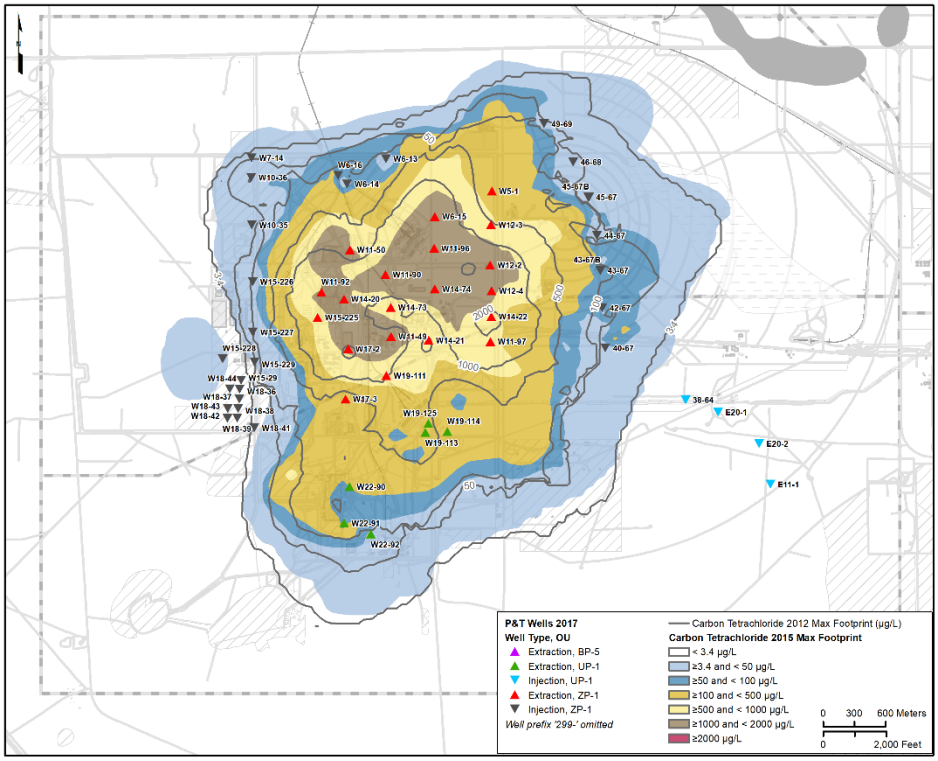


Figure 3. Maximum Footprint – 2015 Initial Conditions Compared to 2012 Initial Conditions: Carbon Tetrachloride

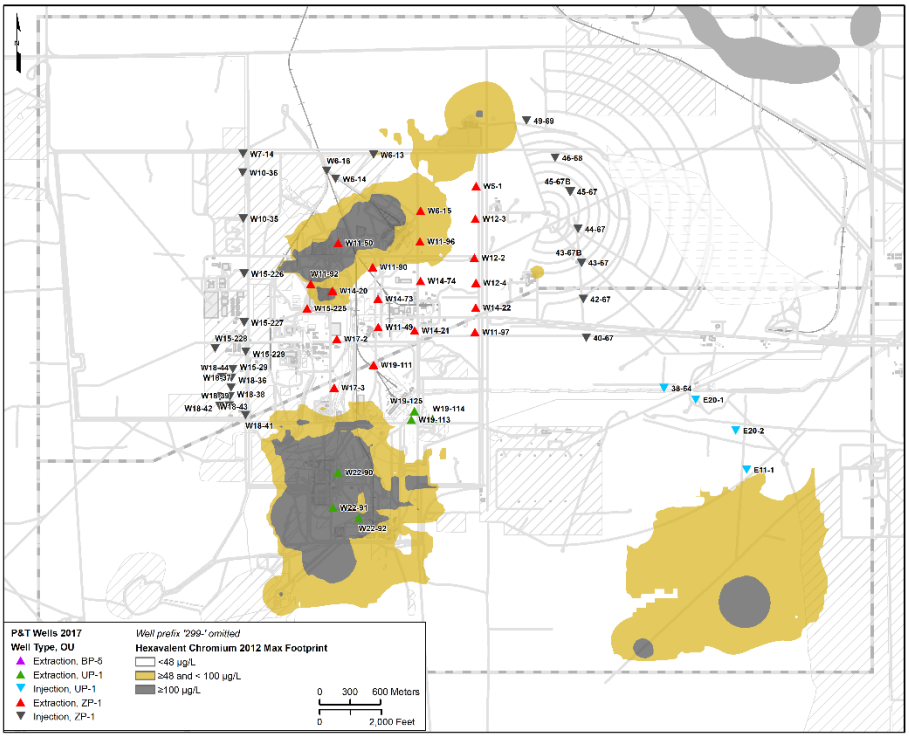


Figure 4. Maximum Footprint – 2012 Initial Conditions: Hexavalent Chromium

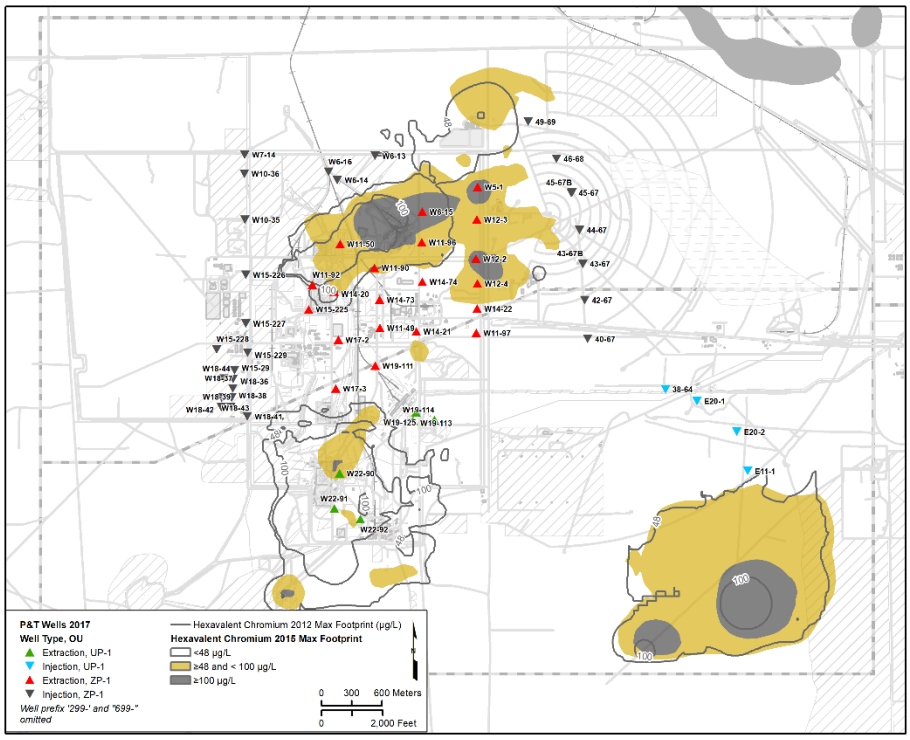


Figure 5. Maximum Footprint – 2015 Initial Conditions Compared to 2012 Initial Conditions: Hexavalent Chromium

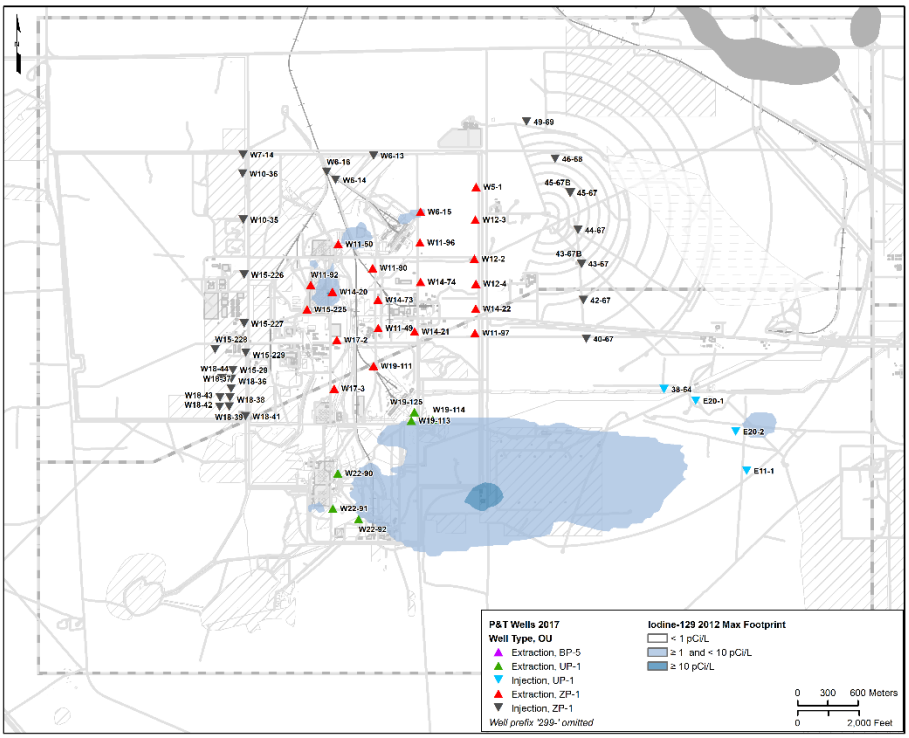


Figure 6. Maximum Footprint – 2012 Initial Conditions: Iodine-129

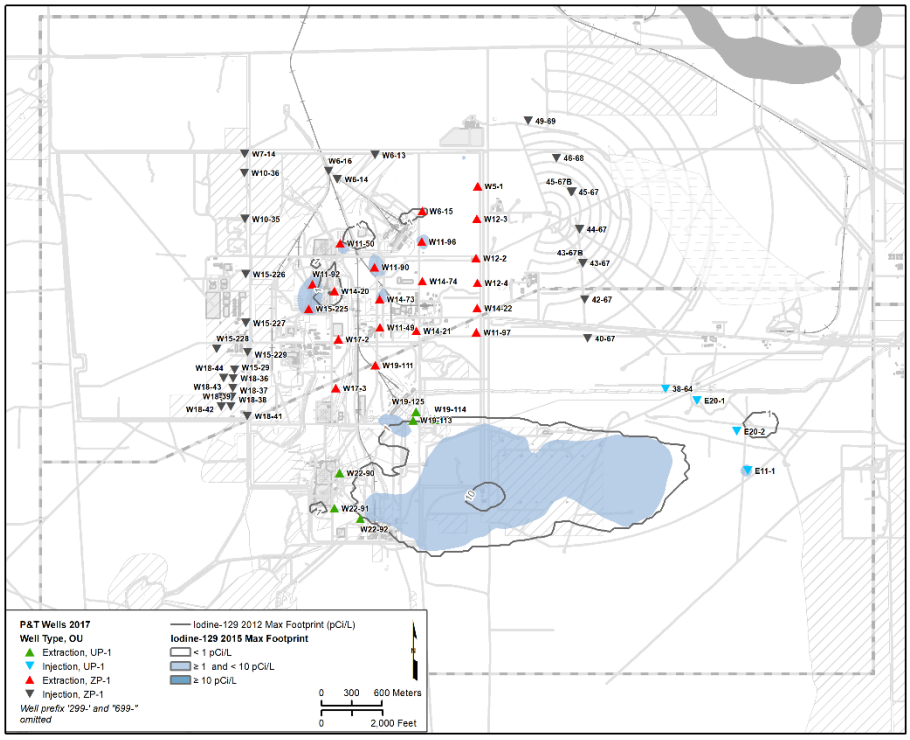


Figure 7. Maximum Footprint – 2015 Initial Conditions Compared to 2012 Initial Conditions: Iodine-129

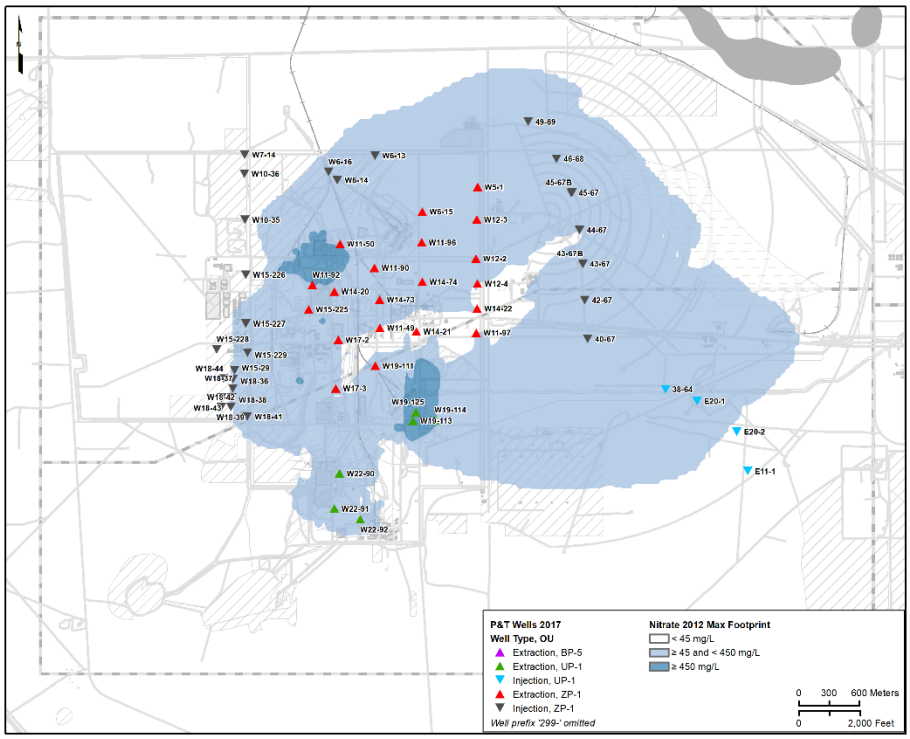


Figure 8. Maximum Footprint – 2012 Initial Conditions: Nitrate

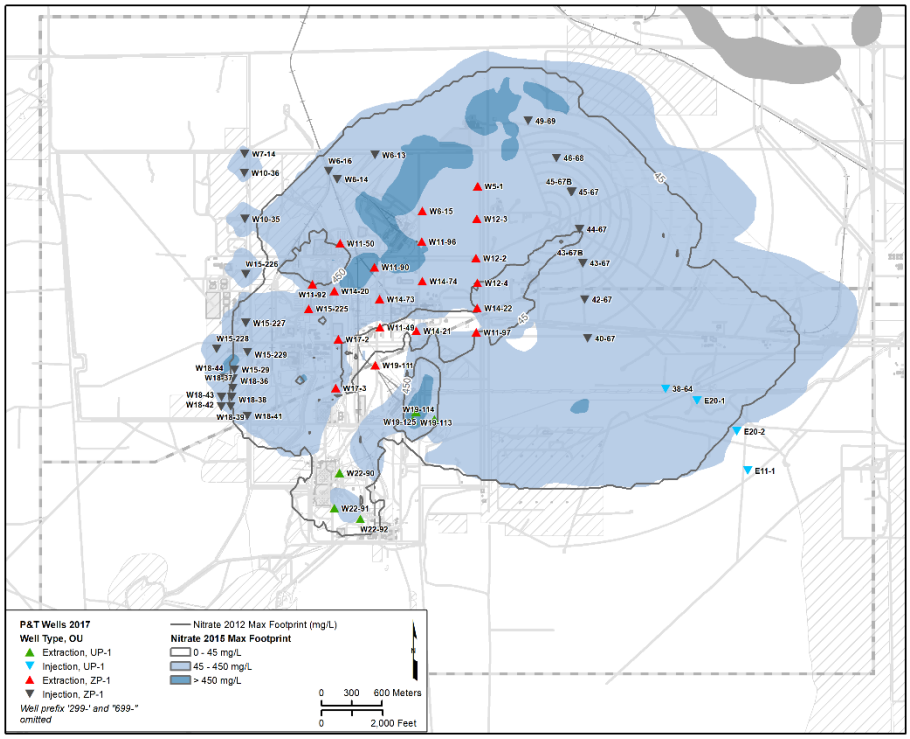


Figure 9. Maximum Footprint – 2015 Initial Conditions Compared to 2012 Initial Conditions: Nitrate

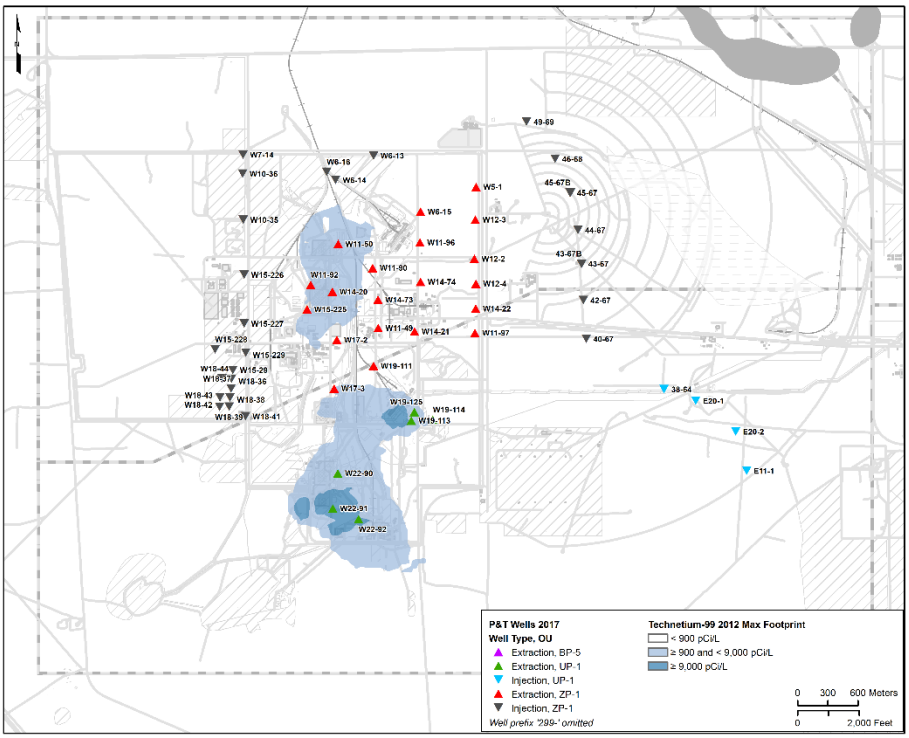


Figure 10. Maximum Footprint – 2012 Initial Conditions: Technetium-99

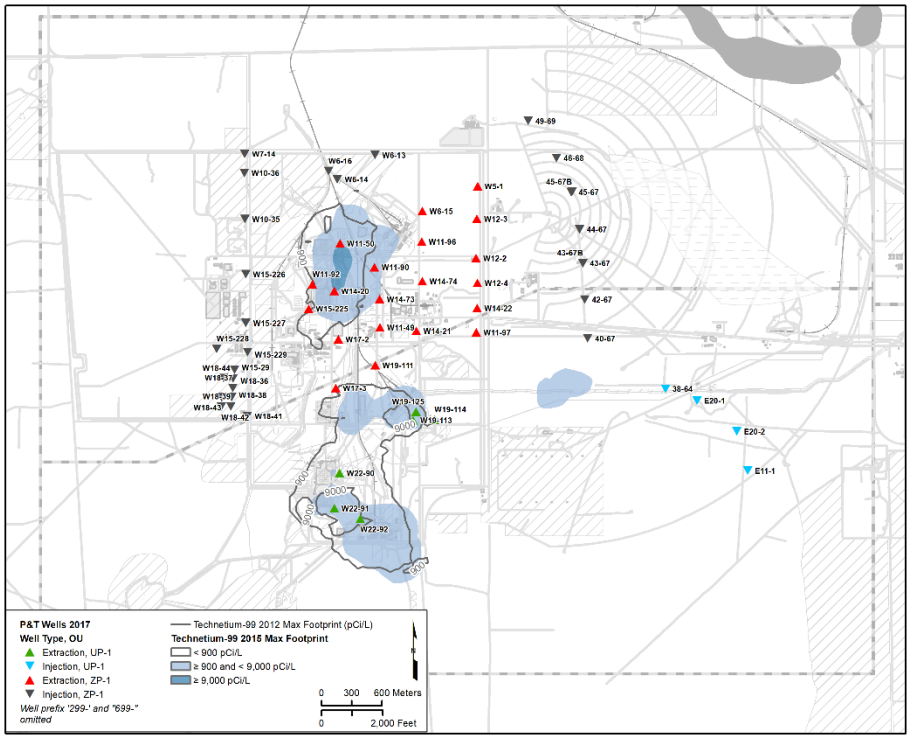


Figure 11. Maximum Footprint – 2015 Initial Conditions Compared to 2012 Initial Conditions: Technetium-99

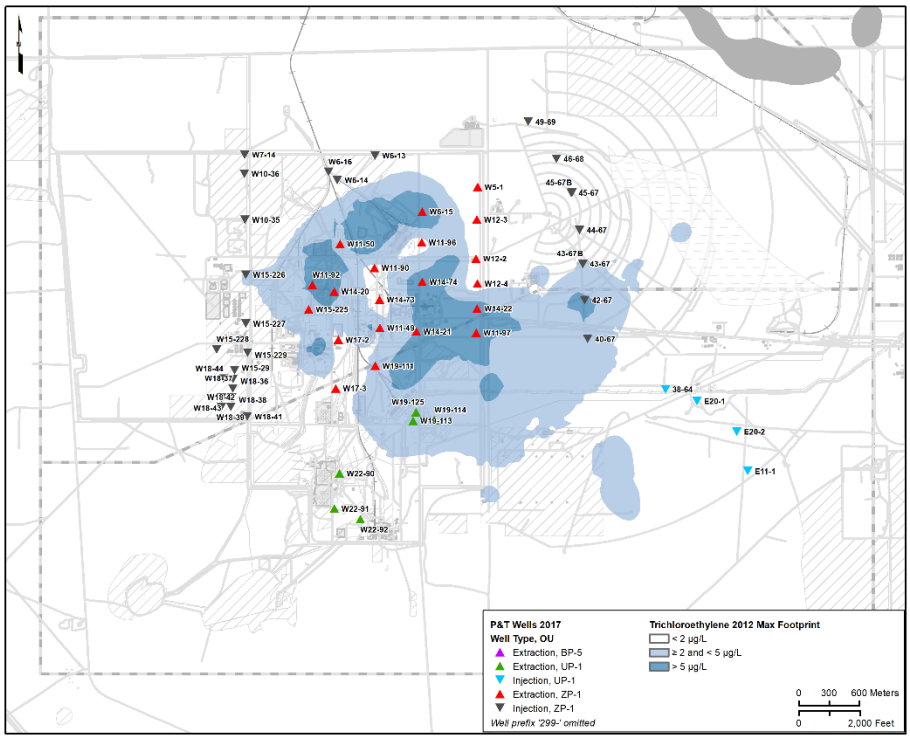


Figure 12. Maximum Footprint – 2012 Initial Conditions: Trichloroethene

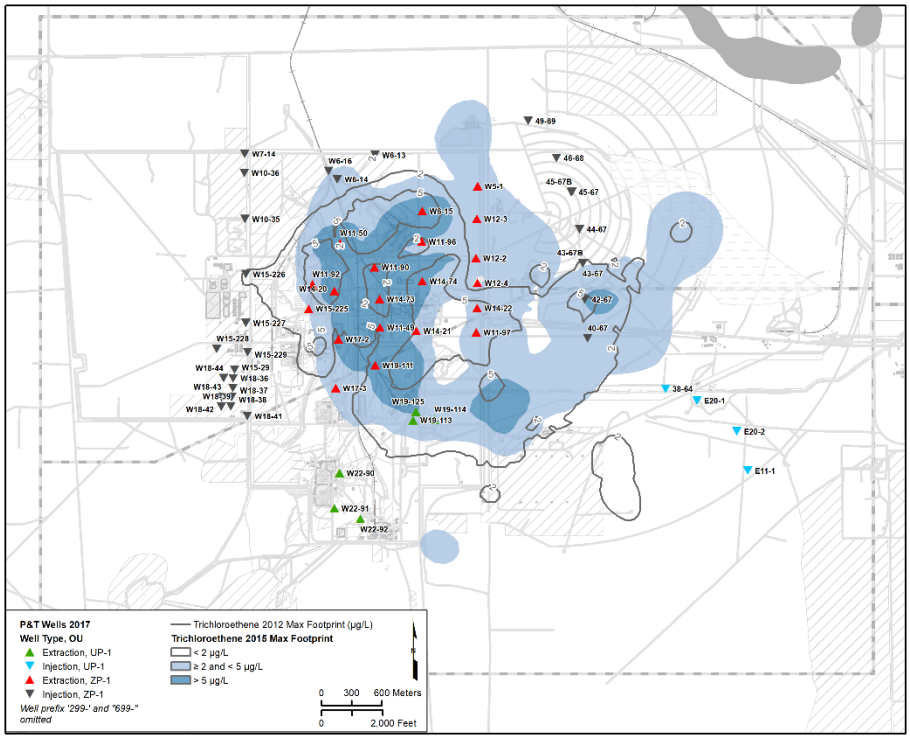


Figure 13. Maximum Footprint – 2015 Initial Conditions Compared to 2012 Initial Conditions: Trichloroethene

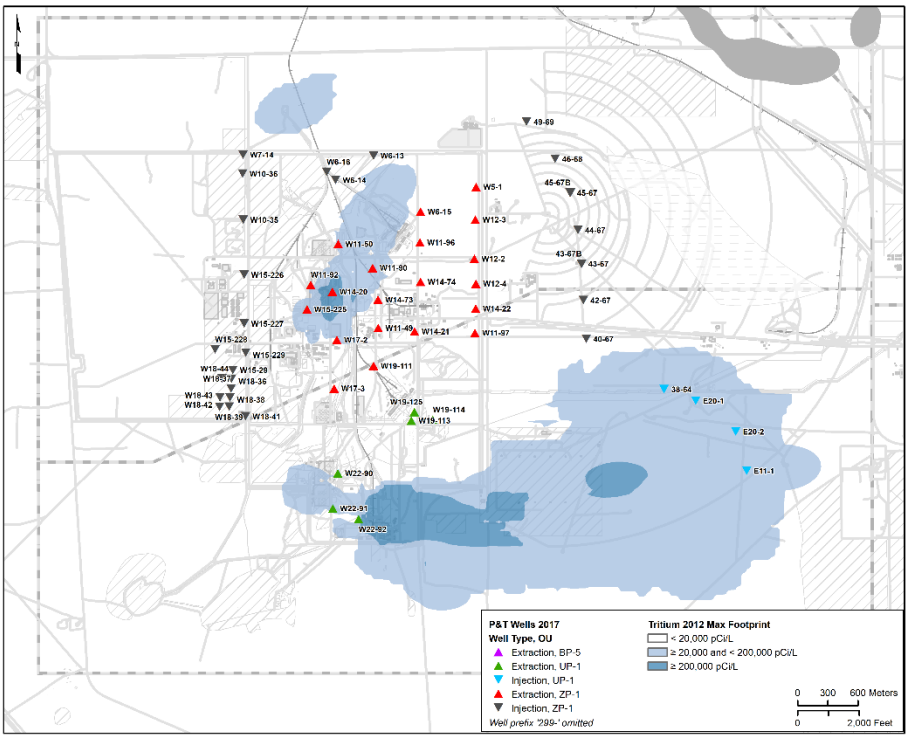


Figure 14. Maximum Footprint – 2012 Initial Conditions: Tritium

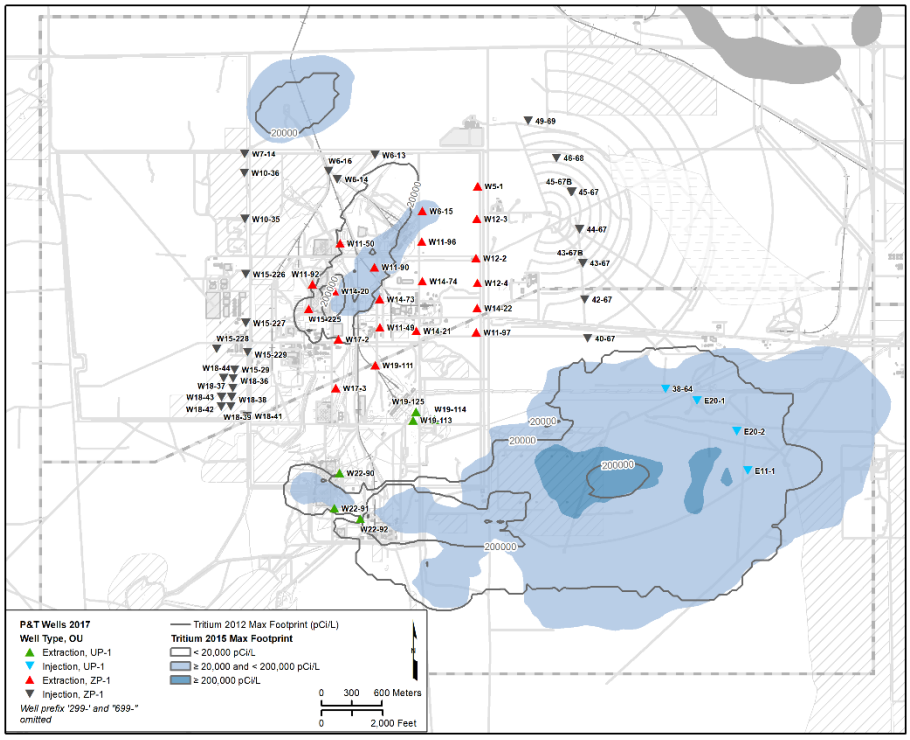


Figure 15. Maximum Footprint – 2015 Initial Conditions Compared to 2012 Initial Conditions: Tritium

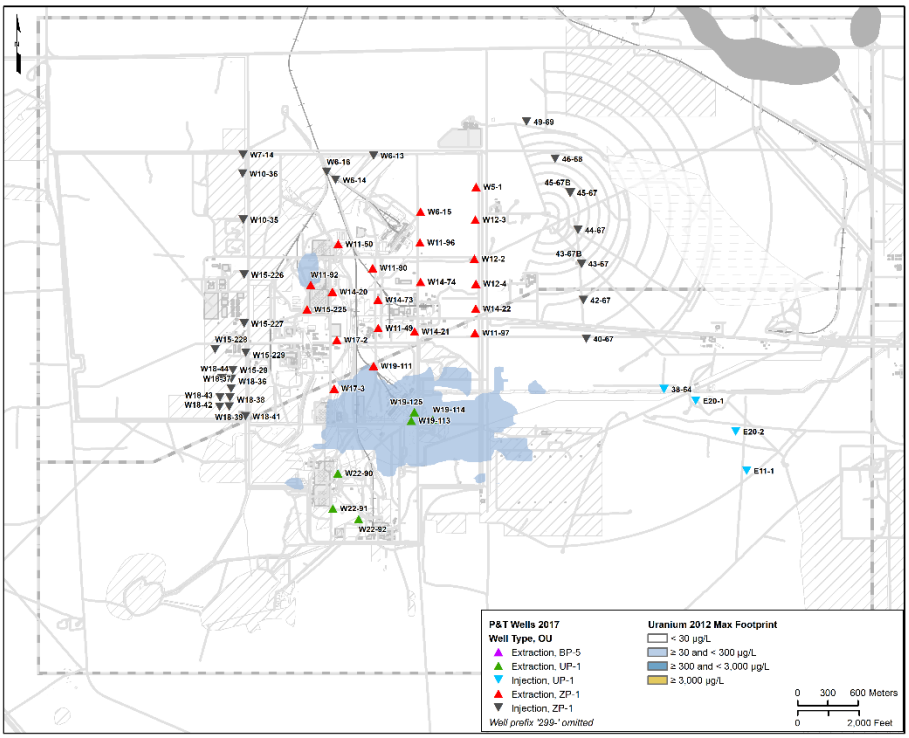


Figure 16. Maximum Footprint – 2012 Initial Conditions: Uranium

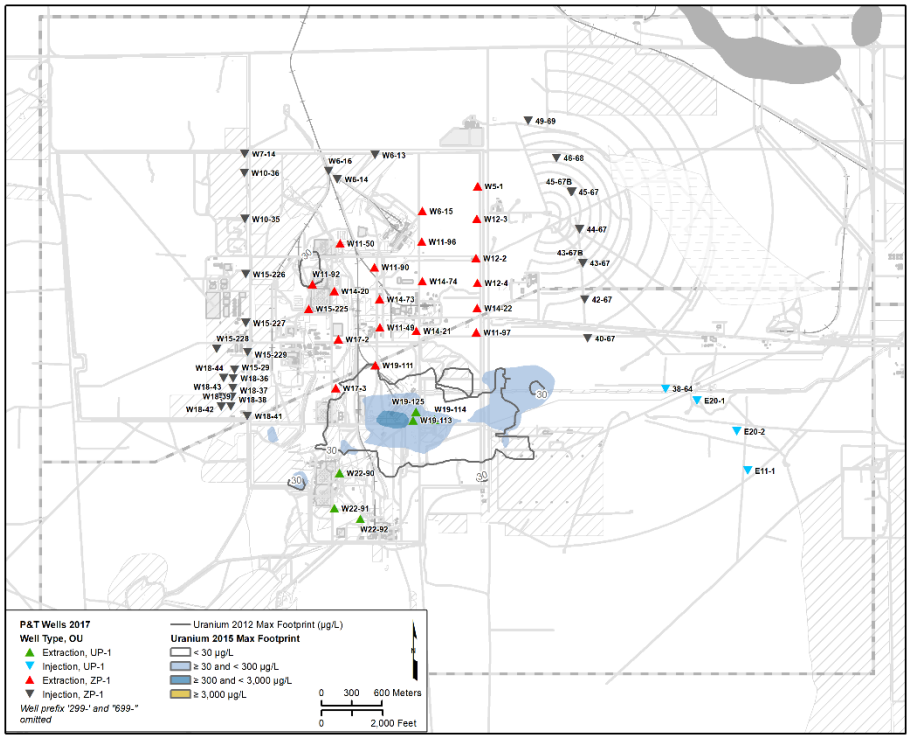


Figure 17. Maximum Footprint – 2015 Initial Conditions Compared to 2012 Initial Conditions: Uranium

Reported monthly recovery rates were compared to the simulated recovery rates using the previous initial conditions developed in CY 2012, and the updated initial conditions developed using the methodology presented in this ECF (Figures 18 through 25). These model runs were undertaken using the CPGWM, as documented in ECF-200ZP1-16-0076.

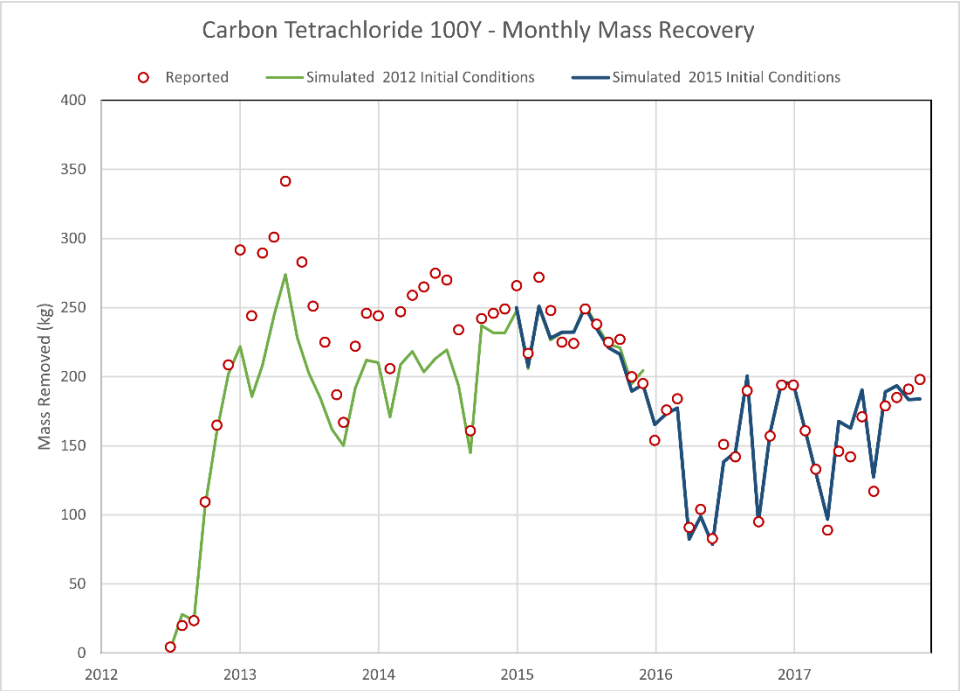


Figure 18. Comparison of Monthly Mass Recovery Rates: Carbon Tetrachloride

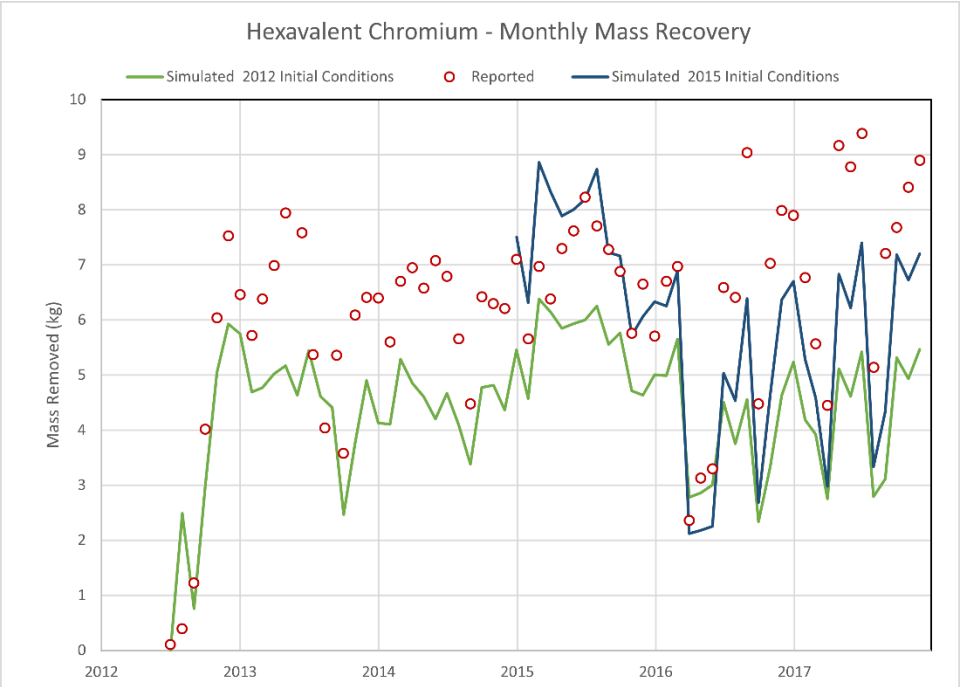


Figure 19. Comparison of Monthly Mass Recovery Rates: Hexavalent Chromium

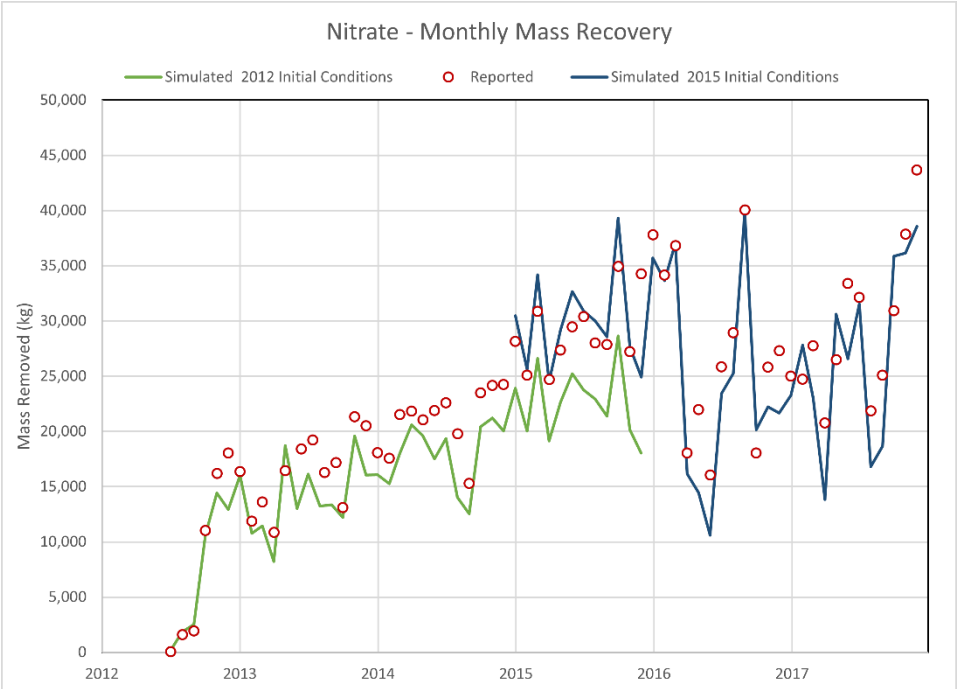
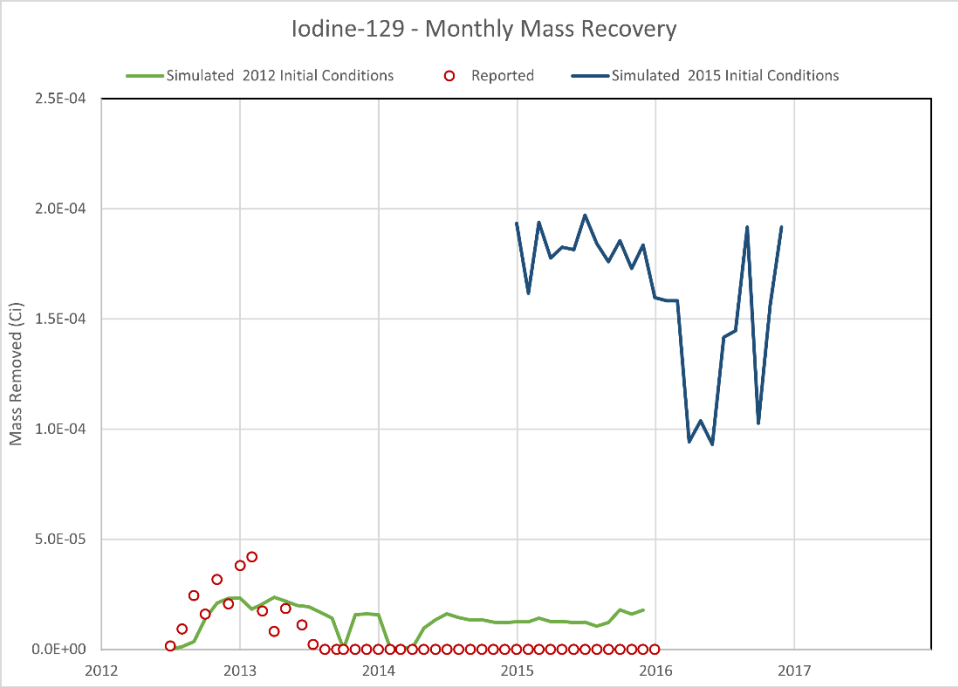


Figure 20. Comparison of Monthly Mass Recovery Rates: Nitrate



Note: Iodine mass recovery rates were not reported after August 2013.

Figure 21. Comparison of Monthly Mass Recovery Rates: Iodine-129

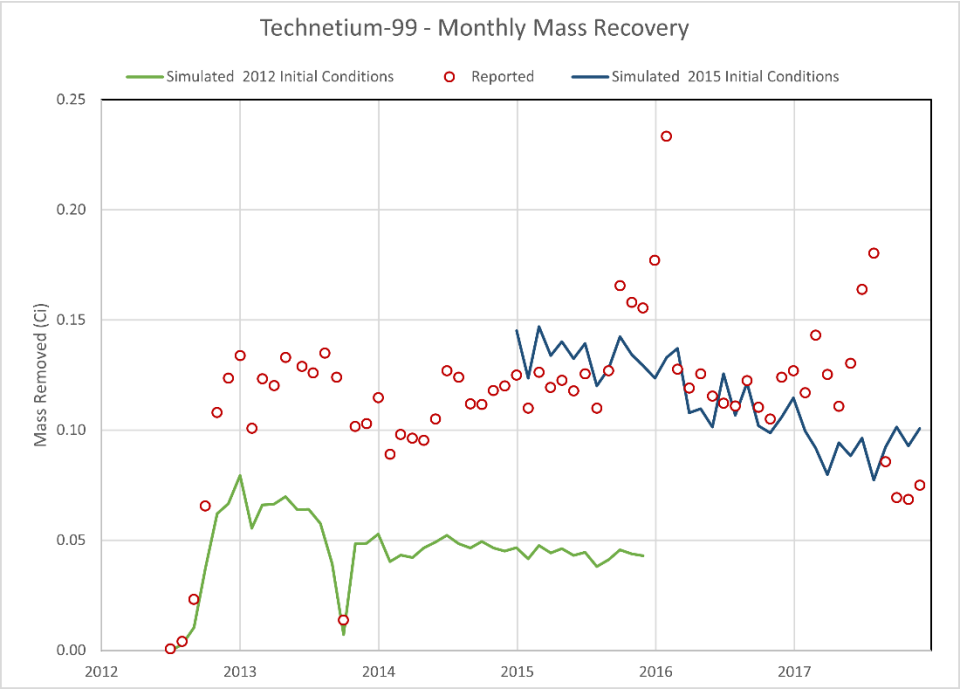


Figure 22. Comparison of Monthly Mass Recovery Rates: Technetium-99

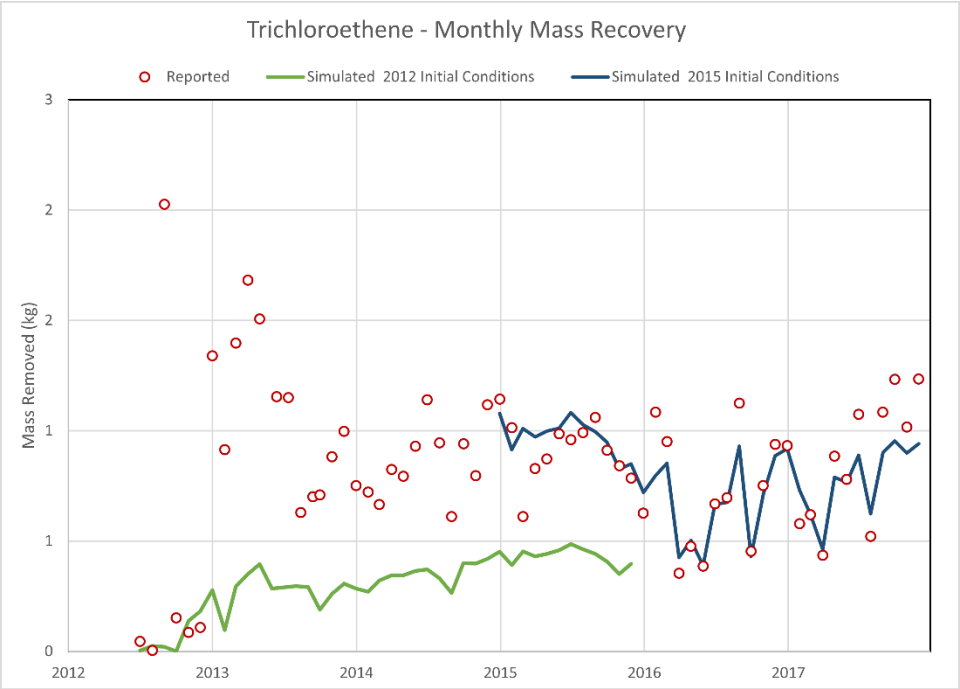
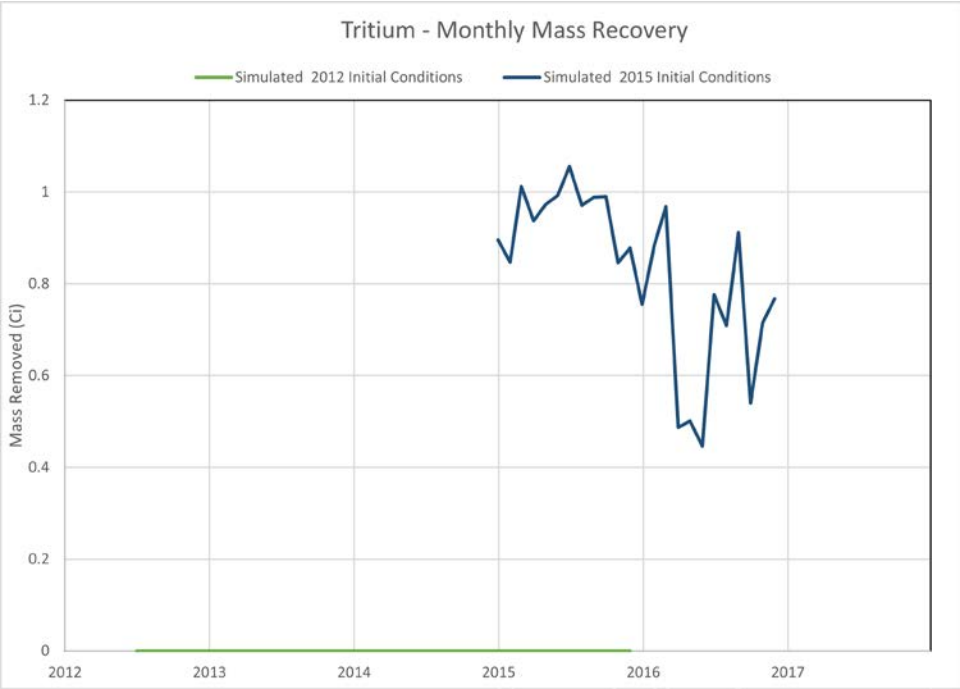


Figure 23. Comparison of Monthly Mass Recovery Rates: Trichloroethene



Note: Tritium mass recovery rates were not reported.

Figure 24. Comparison of Monthly Mass Recovery Rates: Tritium

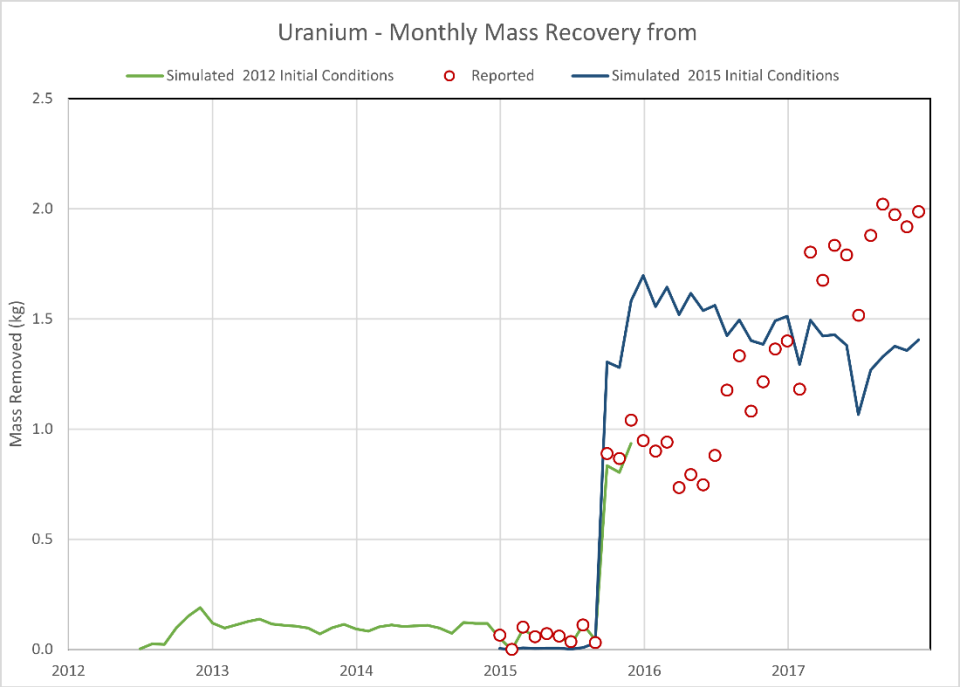


Figure 25. Comparison of Monthly Mass Recovery Rates: Uranium

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Appendix A

Kriging Data

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Tables

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Table A-1. Carbon Tetrachloride Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-E11-1	571003.1	134505.3	105.1	0.2	<1	1.00	Characterization	1
299-E11-1	571003.1	134505.3	111.2	0.1	<1	1.00	Characterization	1
299-E11-1	571003.1	134505.3	117.3	0.4	<1	1.00	Characterization	1
299-E11-1	571003.1	134505.3	120.4	0.1	<1	1.00	Characterization	1
299-E20-1	575140.6	135333.7	120.7	0.4	<1	1.00	Characterization	1
299-E20-1	575145.8	135210.8	120.7	0.3	<1	1.00	Characterization	1
299-E20-2	575112.4	135123.6	120.7	0.1	<1	1.00	Characterization	1
299-E20-2	575017.2	135414.9	120.5	0.5	<1	1.00	Characterization	1
299-E20-2	570503.0	135199.8	112.1	0.1	<1	1.00	Characterization	1
299-W11-97	570503.0	135199.8	115.2	0.1	832.3	1.00	Characterization	1
299-W11-97	570897.9	134895.8	109.8	0.1	832.3	0.00	Characterization	1
299-W11-97	570897.9	134895.8	115.9	0.1	832.3	0.00	Characterization	1
299-W11-97	570897.9	134895.8	119.0	0.1	1042.7	0.00	Characterization	1
299-W11-97	574598.6	136287.2	119.4	0.5	1284.2	0.01	Characterization	1
299-W11-97	575786.5	137264.5	119.7	0.2	1215.4	0.46	Characterization	1
299-W11-97	575827.9	137051.5	119.0	0.3	1050.5	0.56	Characterization	1
299-W11-97	575003.1	136429.1	110.8	0.1	481.4	0.37	Characterization	1
299-W11-97	573140.3	136550.8	120.3	0.7	434.0	0.25	Characterization	1
299-W11-97	573467.2	136403.1	120.3	0.4	225.7	0.06	Characterization	1
299-W13-2	573779.6	137763.8	92.1	0.1	510.8	0.07	Characterization	1
299-W13-2	573565.2	137652.5	121.8	0.7	510.8	0.10	Characterization	1
299-W13-2	573625.7	137580.0	121.7	0.6	510.8	0.09	Characterization	1
299-W13-2	573744.0	137382.3	121.1	0.1	492.4	0.10	Characterization	1
299-W13-2	573780.9	137388.2	121.5	0.7	470.3	0.32	Characterization	1
299-W13-2	573773.6	137599.3	92.1	0.1	451.9	0.31	Characterization	1
299-W13-2	566663.1	136734.6	132.2	886.7	214.5	0.28	Characterization	1
299-W13-2	566017.2	136608.9	80.4	0.1	132.1	0.41	Characterization	1
299-W13-2	566844.0	136441.8	130.1	185.0	125.4	0.43	Characterization	1
299-W13-2	566082.8	136739.3	131.7	7.1	107.8	0.63	Characterization	1

Table A-1. Carbon Tetrachloride Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W15-228	566266.4	136968.3	131.2	20.0	<1	1.00	Characterization	1
299-W15-228	566772.8	136610.2	83.3	0.3	<1	3.80	Characterization	1
299-W15-228	567099.4	136424.0	106.8	260.0	<1	5.85	Characterization	1
299-W15-228	567181.9	137161.5	132.0	297.0	<1	5.80	Characterization	1
299-W15-228	567184.9	136844.4	129.8	330.0	<1	7.60	Characterization	1
299-W15-228	567269.7	136971.0	85.0	240.5	<1	5.70	Characterization	1
299-W15-228	566992.8	136775.6	124.9	996.7	<1	3.60	Characterization	1
299-W15-228	566933.8	136680.7	121.4	1160.0	<1	7.60	Characterization	1
299-W15-228	566882.0	136846.2	110.6	1000.0	<1	4.80	Characterization	1
299-W15-228	567361.5	135924.7	112.4	200.0	<1	3.90	Characterization	1
299-W15-228	566966.3	136756.6	106.1	117.8	<1	1.00	Characterization	1
299-W15-229	568141.1	136608.7	104.2	1990.0	3.7	4.65	Characterization	1
299-W15-229	567874.7	137113.1	79.4	0.4	10.3	0.16	Characterization	1
299-W15-229	567306.8	136519.7	99.3	285.7	1.0	1.00	Characterization	1
299-W18-260	566692.9	136351.8	106.3	144.7	153.4	1.77	Characterization	1
299-W18-260	567774.8	136772.2	104.9	228.0	133.8	2.03	Characterization	1
299-W18-260	568317.6	135875.9	59.7	0.1	133.8	1.87	Characterization	1
299-W18-260	568317.6	135875.9	65.9	1.2	107.8	1.81	Characterization	1
299-W18-260	568317.6	135875.9	72.0	2.0	81.1	0.89	Characterization	1
299-W18-41	568317.6	135875.9	78.4	1.1	<1	1.00	Characterization	1
299-W18-41	568317.6	135875.9	84.5	11.0	<1	1.00	Characterization	1
299-W18-41	568317.6	135875.9	90.2	565.0	<1	6.30	Characterization	1
299-W18-41	568317.6	135875.9	97.9	590.0	<1	11.00	Characterization	1
299-W18-41	568317.6	135875.9	102.8	180.0	1.2	11.46	Characterization	1
299-W18-41	568317.6	135875.9	110.1	110.0	1.2	1.80	Characterization	1
299-W18-41	568317.6	135875.9	121.1	13.0	1.1	1.00	Characterization	1
299-W18-41	568312.7	136610.3	100.2	202.0	<1	1.00	Characterization	1
299-W18-41	568321.5	136998.1	103.0	68.1	<1	1.70	Characterization	1
299-W18-41	568327.4	136363.7	92.7	156.6	<1	1.00	Characterization	1

Table A-1. Carbon Tetrachloride Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W18-41	568148.7	136048.6	98.3	410.0	<1	1.00	Characterization	1
299-W19-111	568832.6	135819.4	66.6	37.6	696.2	0.37	Characterization	1
299-W19-111	568832.6	135819.4	73.3	48.7	697.2	1.05	Characterization	1
299-W19-111	568832.6	135819.4	79.8	46.6	705.4	0.27	Characterization	1
299-W19-111	568832.6	135819.4	86.1	50.1	715.5	0.27	Characterization	1
299-W19-111	568832.6	135819.4	93.0	150.0	700.9	0.41	Characterization	1
299-W19-111	568832.6	135819.4	98.6	140.0	662.9	0.44	Characterization	1
299-W19-111	568832.6	135819.4	105.6	60.0	641.4	0.37	Characterization	1
299-W19-113	568832.6	135819.4	111.2	54.0	247.3	0.49	Characterization	1
299-W19-113	568832.6	135819.4	117.3	54.0	246.9	0.11	Characterization	1
299-W19-113	568832.6	135819.4	123.4	68.0	246.1	0.65	Characterization	1
299-W19-113	566901.7	136287.6	123.1	1415.0	246.1	0.13	Characterization	1
299-W19-114	566901.7	136282.4	128.4	805.0	181.7	0.72	Characterization	1
299-W19-114	566898.4	136181.0	129.5	681.5	168.3	0.45	Characterization	1
299-W19-114	566909.2	136284.5	105.3	265.8	161.8	0.21	Characterization	1
299-W19-114	567721.5	135890.0	93.6	64.9	141.7	0.30	Characterization	1
299-W19-114	568324.9	136116.5	97.3	54.8	101.3	0.54	Characterization	1
299-W19-114	567733.4	135567.8	91.2	654.0	101.3	0.04	Characterization	1
299-W5-2	567328.4	135941.3	87.2	1200.0	148.2	1.35	Characterization	1
299-W5-2	567359.0	136204.6	97.5	217.6	148.2	1.52	Characterization	1
299-W5-2	567781.5	136381.3	98.8	246.8	148.2	1.96	Characterization	1
299-W5-2	566412.3	136000.7	134.2	103.0	179.2	1.56	Characterization	1
299-W5-2	566309.4	135550.0	132.1	7.3	385.8	1.00	Characterization	1
299-W5-2	566306.9	135719.0	78.9	1.5	536.4	0.43	Characterization	1
299-W5-2	566657.4	136108.9	105.8	62.3	530.3	0.38	Characterization	1
299-W5-2	565745.4	135711.5	49.0	0.3	468.7	0.43	Characterization	1
299-W5-2	565745.4	135711.5	74.8	3.8	380.0	0.61	Characterization	1
299-W6-15	565745.4	135711.5	80.8	5.9	367.8	0.57	Characterization	1
299-W6-15	565745.4	135711.5	86.9	5.8	559.9	0.75	Characterization	1

Table A-1. Carbon Tetrachloride Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W6-15	565745.4	135711.5	93.0	7.6	744.0	0.78	Characterization	1
299-W6-15	565745.4	135711.5	99.3	5.7	1206.4	0.99	Characterization	1
299-W6-15	565745.4	135711.5	105.1	3.6	766.4	0.98	Characterization	1
299-W7-13	565745.4	135711.5	111.3	7.6	10.5	0.35	Characterization	1
299-W7-13	565745.4	135711.5	117.5	4.8	16.7	0.51	Characterization	1
299-W7-13	565745.4	135711.5	123.1	3.9	14.1	0.33	Characterization	1
699-38-64	565745.4	135711.5	129.8	1.0	<1	1.00	Characterization	1
699-38-64	566049.3	135678.8	74.6	17.0	<1	1.00	Characterization	1
699-38-64	566049.3	135678.8	99.1	1.7	<1	1.00	Characterization	1
699-38-64	566049.3	135678.8	132.0	0.4	<1	1.00	Characterization	1
699-38-64	566433.3	135966.7	133.1	101.0	<1	1.00	Characterization	1
699-38-64	566716.5	135248.3	132.7	143.8	<1	1.00	Characterization	1
699-38-64	566581.8	135627.0	129.4	104.0	<1	1.90	Characterization	1
699-40-67	566752.2	135586.7	127.4	105.0	17.0	0.07	Characterization	1
699-40-67	566307.2	135972.9	131.2	73.6	17.0	0.12	Characterization	1
699-40-67	566793.5	135790.7	123.0	285.0	17.0	0.06	Characterization	1
699-40-67	566675.9	135920.2	122.3	461.0	17.4	0.06	Characterization	1
699-40-67	566809.2	136028.8	130.2	660.0	19.5	0.85	Characterization	1
699-40-67	566697.0	136373.1	130.2	530.3	21.7	1.01	Characterization	1
699-40-67	566304.5	135826.2	132.0	15.1	5.3	7.58	Characterization	1
699-40-67	566307.6	135640.3	132.1	12.0	1.3	24.46	Characterization	1
699-46-68	566951.6	135806.2	110.0	179.3	19.7	1.47	Characterization	1
699-46-68	566925.9	135325.0	106.3	56.4	19.7	2.24	Characterization	1
699-46-68	566421.5	135465.2	113.8	8.6	19.7	1.02	Characterization	1
699-46-68	566380.0	134733.5	134.1	18.2	17.1	3.36	Characterization	1
699-46-68	566605.1	135425.7	131.1	58.0	5.2	0.19	Characterization	1
699-49-69	566097.7	134978.7	135.3	0.7	15.0	1.09	Characterization	1
699-49-69	566088.6	134990.2	72.6	1.1	15.0	1.46	Characterization	1
699-49-69	566862.5	135196.9	106.9	271.0	15.0	2.12	Characterization	1

Table A-1. Carbon Tetrachloride Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-49-69	566862.5	135196.9	112.9	272.0	36.3	0.83	Characterization	1
699-49-69	566862.5	135196.9	118.8	250.0	53.3	0.55	Characterization	1
699-49-69	566862.5	135196.9	125.0	195.0	64.4	0.18	Characterization	1
699-49-69	566862.5	135196.9	130.4	72.4	59.5	0.21	Characterization	1
299-W11-49	566723.3	134996.4	130.9	116.0	<1	0.91	Pumping Well	2
299-W11-50	566045.1	135048.5	56.4	0.1	<1	1.89	Pumping Well	2
299-W11-90	566045.1	135048.5	74.8	0.3	<1	1.50	Pumping Well	2
299-W11-92	566045.1	135048.5	80.3	6.3	<1	0.92	Pumping Well	2
299-W11-96	566045.1	135048.5	86.5	11.0	<1	1.45	Pumping Well	2
299-W12-2	566045.1	135048.5	92.7	14.0	<1	0.97	Pumping Well	2
299-W12-3	566045.1	135048.5	98.8	2.2	<1	1.13	Pumping Well	2
299-W12-4	566045.1	135048.5	104.9	0.1	<1	0.92	Pumping Well	2
299-W14-20	566045.1	135048.5	110.7	0.1	<1	1.38	Pumping Well	2
299-W14-21	566045.1	135048.5	120.2	1.7	<1	1.05	Pumping Well	2
299-W14-22	566045.1	135048.5	126.3	0.3	<1	0.59	Pumping Well	2
299-W14-73	566045.1	135048.5	132.2	0.1	<1	1.31	Pumping Well	2
299-W14-74	567939.1	135014.1	128.7	18.6	<1	0.99	Pumping Well	2
299-W15-225	567565.2	134745.4	129.8	25.9	<1	0.61	Pumping Well	2
299-W17-2	567997.9	135205.7	119.7	82.0	<1	1.37	Pumping Well	2
299-W17-3	567313.0	135547.0	87.9	260.0	<1	1.80	Pumping Well	2
299-W22-90	567313.0	135547.0	94.0	730.0	<1	1.03	Pumping Well	2
299-W22-91	567313.0	135547.0	100.1	190.0	<1	1.60	Pumping Well	2
299-W22-92	567313.0	135547.0	105.9	190.0	<1	2.31	Pumping Well	2
299-W5-1	567313.0	135547.0	112.1	290.0	<1	0.72	Pumping Well	2
299-E17-14	567313.0	135547.0	118.2	295.0	<1	1.00	Sampling	1
299-E17-16	567313.0	135547.0	124.2	240.0	<1	1.00	Sampling	1
299-E17-18	567689.6	135008.2	109.1	120.0	<1	1.00	Sampling	1
299-E17-19	567689.6	135008.2	115.2	26.0	<1	1.00	Sampling	1
299-E24-25	567689.6	135008.2	121.3	160.0	<1	1.00	Sampling	1

Table A-1. Carbon Tetrachloride Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-E26-14	567689.6	135008.2	126.9	32.0	<1	1.00	Sampling	1
299-E26-79	567901.9	135013.2	94.3	130.0	<1	1.00	Sampling	1
299-E27-155	567901.9	135013.2	103.4	76.0	<1	1.00	Sampling	1
299-E28-30	567901.9	135013.2	109.6	34.0	<1	1.00	Sampling	1
299-E29-54	567901.9	135013.2	115.8	43.0	<1	1.00	Sampling	1
299-E33-340	567901.9	135013.2	121.9	55.0	<1	1.00	Sampling	1
299-E33-341	567901.9	135013.2	126.3	4.2	<1	1.00	Sampling	1
299-E33-342	567360.6	135012.4	124.8	10.0	<1	1.00	Sampling	1
299-E33-343	567673.6	135012.2	113.3	91.6	<1	1.00	Sampling	1
299-E33-345	567662.9	135010.7	87.6	135.0	<1	1.00	Sampling	1
299-E33-50	567992.1	135015.2	130.4	42.0	<1	1.00	Sampling	1
299-W10-1	567634.7	135017.1	130.4	34.5	416.5	2.13	Sampling	1
299-W10-14	567901.7	134886.7	131.5	63.4	3.0	1.00	Sampling	1
299-W10-27	567949.9	135350.8	98.3	45.5	477.8	0.39	Sampling	1
299-W10-30	566896.5	135004.5	131.9	99.0	12.3	0.58	Sampling	1
299-W10-31	567699.2	135004.0	130.5	42.4	19.6	1.02	Sampling	1
299-W10-33	567782.7	134842.5	130.3	13.2	172.8	1.00	Sampling	1
299-W11-13	566895.3	135161.9	131.0	211.7	728.8	0.36	Sampling	1
299-W11-18	567822.9	134926.0	126.9	49.8	141.5	2.10	Sampling	1
299-W11-43	567133.3	134693.8	89.8	45.7	650.2	0.37	Sampling	1
299-W11-45	568124.4	134573.8	129.5	28.4	500.7	1.99	Sampling	1
299-W11-47	566904.6	134193.0	128.2	85.3	849.8	1.37	Sampling	1
299-W11-48	567648.2	134410.9	44.0	0.3	414.0	2.42	Sampling	1
299-W11-87	567648.2	134410.9	101.1	0.3	1639.4	1.21	Sampling	1
299-W11-88	566945.2	134292.5	131.8	25.0	168.1	1.00	Sampling	1
299-W13-1	566908.7	134076.3	130.5	114.0	1344.5	0.30	Sampling	1
299-W14-11	566904.4	134201.6	131.8	20.0	867.7	1.63	Sampling	1
299-W14-13	567179.6	134347.8	129.4	38.0	451.9	1.78	Sampling	1
299-W14-14	567237.4	134207.1	129.8	41.0	421.3	1.62	Sampling	1

Table A-1. Carbon Tetrachloride Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W14-71	567009.1	134092.5	132.0	101.4	528.6	1.24	Sampling	1
299-W14-72	567186.7	134041.3	129.8	19.7	1085.9	1.11	Sampling	1
299-W15-11	567541.8	134539.9	129.7	19.0	102.2	1.01	Sampling	1
299-W15-152	568046.5	134390.5	128.2	9.1	4.6	1.59	Sampling	1
299-W15-17	566961.4	134483.2	125.4	3.4	49.4	0.03	Sampling	1
299-W15-33	566911.8	134134.5	123.6	4.6	95.8	1.05	Sampling	1
299-W15-37	567167.8	134029.8	125.5	4.4	28.9	4.98	Sampling	1
299-W15-42	567170.5	134549.1	126.0	70.3	119.5	0.87	Sampling	1
299-W15-46	567351.9	134145.6	129.2	6.8	263.0	0.40	Sampling	1
299-W15-49	566794.0	134127.2	132.4	74.8	38.2	1.93	Sampling	1
299-W15-50	566759.1	134166.7	137.9	93.6	601.4	0.47	Sampling	1
299-W15-7	566707.7	134294.0	132.1	86.0	435.2	1.06	Sampling	1
299-W15-763	566628.2	134391.9	129.8	79.0	394.8	1.67	Sampling	1
299-W15-765	566424.4	133293.6	132.1	0.6	449.5	1.18	Sampling	1
299-W15-83	566682.7	133539.2	131.3	2.6	11.9	1.27	Sampling	1
299-W15-94	566908.3	133670.4	81.2	5.6	5.3	2.26	Sampling	1
299-W18-1	568329.6	137321.5	105.7	30.4	34.1	0.25	Sampling	1
299-W18-15	568175.4	137621.1	81.7	200.0	3.0	5.96	Sampling	1
299-W18-16	568175.4	137621.1	87.5	225.0	39.9	1.45	Sampling	1
299-W18-21	568175.4	137621.1	91.5	290.0	<1	1.00	Sampling	1
299-W18-22	568175.4	137621.1	93.7	280.0	<1	1.05	Sampling	1
299-W18-40	568175.4	137621.1	102.2	0.1	67.0	1.73	Sampling	1
299-W19-101	568175.4	137621.1	108.8	230.0	94.4	0.20	Sampling	1
299-W19-105	568175.4	137621.1	111.9	200.0	105.7	0.25	Sampling	1
299-W19-107	568175.4	137621.1	119.3	200.0	126.3	0.65	Sampling	1
299-W19-18	568175.4	137621.1	124.1	230.0	285.8	0.03	Sampling	1
299-W19-34A	567781.7	137076.4	80.9	210.0	250.4	0.37	Sampling	1
299-W19-34B	567781.7	137076.4	86.4	420.0	382.1	0.35	Sampling	1
299-W19-35	567781.7	137076.4	92.5	580.0	77.3	0.54	Sampling	1

Table A-1. Carbon Tetrachloride Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W19-36	567781.7	137076.4	110.8	1200.0	223.5	0.15	Sampling	1
299-W19-39	567781.7	137076.4	123.0	750.0	67.1	0.95	Sampling	1
299-W19-4	567118.2	137299.1	87.0	0.1	155.8	0.29	Sampling	1
299-W19-41	567318.7	137638.7	87.3	0.7	53.0	1.87	Sampling	1
299-W19-43	566024.4	137636.3	79.7	3.7	174.1	0.24	Sampling	1
299-W19-46	566024.4	137636.3	107.1	8.6	128.2	0.10	Sampling	1
299-W19-47	566024.4	137636.3	128.0	4.7	80.2	2.64	Sampling	1
299-W19-48	566292.0	137638.6	66.4	0.6	137.0	0.36	Sampling	1
299-W19-49	579340.6	130309.0	120.2	0.5	304.2	0.50	Sampling	1
299-W19-6	579433.0	130384.7	120.9	0.4	177.3	0.26	Sampling	1
299-W21-2	579720.1	130768.4	117.2	0.5	19.5	1.46	Sampling	1
299-W22-113	579522.7	130669.4	123.6	0.3	60.2	1.42	Sampling	1
299-W22-24P	579554.1	130771.8	123.5	0.5	<1	1.00	Sampling	1
299-W22-24S	579176.8	130915.0	123.2	0.4	91.9	1.00	Sampling	1
299-W22-45	578833.7	130874.7	118.4	0.3	41.9	0.60	Sampling	1
299-W22-47	575785.7	130793.8	124.8	0.7	43.7	2.61	Sampling	1
299-W22-49	579712.2	131224.6	101.8	0.3	43.4	0.46	Sampling	1
299-W22-69	579694.9	131230.9	125.2	0.3	27.6	1.38	Sampling	1
299-W22-72	579679.4	131181.4	124.2	0.3	32.2	1.27	Sampling	1
299-W22-83	579589.8	131190.9	120.0	0.4	43.9	2.31	Sampling	1
299-W22-86	579627.8	130965.8	118.5	0.1	44.4	0.44	Sampling	1
299-W22-87	579709.7	131280.3	123.0	0.3	26.5	0.72	Sampling	1
299-W22-88	579394.8	131467.6	124.2	0.4	6.8	1.34	Sampling	1
299-W22-95	579629.3	131352.2	120.1	0.3	45.8	1.54	Sampling	1
299-W22-96	579314.1	131347.3	124.4	0.4	36.0	0.19	Sampling	1
299-W23-15	579332.0	131341.8	102.4	0.3	52.7	1.42	Sampling	1
299-W23-19	579030.2	131469.6	118.5	0.1	31.0	3.02	Sampling	1
299-W23-21	569991.0	132739.2	90.8	0.5	62.0	1.39	Sampling	1
299-W23-4	580551.7	132794.2	52.6	0.7	59.4	1.33	Sampling	1

Table A-1. Carbon Tetrachloride Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W26-13	576902.1	133278.6	123.5	0.2	<1	1.00	Sampling	1
299-W26-14	571009.6	133215.9	113.2	0.1	2.0	1.33	Sampling	1
299-W27-2	567942.7	133362.6	62.2	1.0	5.5	1.03	Sampling	1
299-W6-3	566683.9	133137.7	129.4	0.4	57.3	1.00	Sampling	1
299-W6-6	572922.7	133627.2	109.2	1.0	28.5	1.00	Sampling	1
299-W7-3	567472.7	133552.2	129.0	18.5	6.5	1.00	Sampling	1
699-22-35	566907.8	133662.5	129.6	6.8	<1	1.00	Sampling	1
699-23-34B	566621.2	133600.4	130.2	3.7	<1	1.00	Sampling	1
699-24-33	571395.9	133809.9	125.4	0.9	<1	1.00	Sampling	1
699-24-34A	567860.0	133785.3	128.4	1.1	<1	1.00	Sampling	1
699-24-34B	569857.9	134099.2	119.6	0.9	<1	1.00	Sampling	1
699-24-35	566063.6	134271.3	134.0	19.5	<1	1.00	Sampling	1
699-24-36	571395.5	134557.1	119.5	0.5	<1	1.00	Sampling	1
699-24-46	569731.3	134469.0	125.5	2.5	<1	1.00	Sampling	1
699-25-33A	568466.7	134308.8	130.2	3.2	<1	1.00	Sampling	1
699-25-34A	568427.8	134626.0	128.6	13.5	<1	1.00	Sampling	1
699-25-34B	569730.3	134797.2	125.2	1.4	<1	1.00	Sampling	1
699-25-34D	571219.1	134997.3	122.4	0.6	<1	1.00	Sampling	1
699-25-34E	570189.6	135318.8	66.2	0.1	<1	1.00	Sampling	1
699-26-33	570189.6	135318.8	71.4	0.1	<1	1.00	Sampling	1
699-26-34A	570189.6	135318.8	78.6	0.1	<1	1.00	Sampling	1
699-26-34B	570189.6	135318.8	85.2	0.1	<1	1.00	Sampling	1
699-26-35A	570189.6	135318.8	91.1	0.1	<1	1.00	Sampling	1
699-26-35C	570189.6	135318.8	116.0	0.9	<1	1.00	Sampling	1
699-26-38	570189.6	135318.8	122.5	1.9	<1	1.00	Sampling	1
699-30-66	570090.2	135039.8	117.9	1.0	<1	1.00	Sampling	1
699-31-31	569180.3	134931.6	129.7	4.4	<1	1.00	Sampling	1
699-32-43	568469.1	135331.0	95.6	354.0	<1	1.00	Sampling	1
699-32-62	569084.1	135325.6	103.0	21.8	<1	1.00	Sampling	1

Table A-1. Carbon Tetrachloride Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-32-72A	571164.3	135764.4	117.2	0.8	<1	1.00	Sampling	1
699-32-76	570057.5	135881.2	124.1	4.4	<1	1.00	Sampling	1
699-33-56	569420.3	135815.7	67.1	1.2	<1	1.00	Sampling	1
699-33-74	569420.3	135815.7	74.4	2.1	8.9	2.07	Sampling	1
699-33-75	569420.3	135815.7	80.1	1.0	12.6	0.54	Sampling	1
699-33-76	569420.3	135815.7	86.8	1.0	4.2	0.88	Sampling	1
699-34-61	569420.3	135815.7	92.5	16.5	<1	1.00	Sampling	1
699-34-72	569420.3	135815.7	98.6	22.0	1.5	0.73	Sampling	1
699-35-66A	569420.3	135815.7	118.6	40.0	<1	1.00	Sampling	1
699-35-78A	569420.3	135815.7	124.1	32.0	4.6	4.26	Sampling	1
699-36-61A	568967.0	136488.5	99.2	220.0	<1	1.00	Sampling	1
699-36-66B	570390.7	136897.4	119.2	8.9	<1	2.46	Sampling	1
699-36-70A	568729.3	137182.7	128.6	8.5	2.5	1.31	Sampling	1
699-36-70B	568947.1	137233.8	107.5	46.3	14.4	0.93	Sampling	1
699-37-66	569109.8	137600.9	83.7	29.0	<1	1.44	Sampling	1
699-38-61	569109.8	137600.9	91.6	44.0	<1	1.00	Sampling	1
699-38-65	569109.8	137600.9	98.6	20.0	<1	1.04	Sampling	1
699-38-68A	569109.8	137600.9	105.7	57.5	4.4	1.00	Sampling	1
699-38-70B	569109.8	137600.9	124.8	1.0	269.6	1.31	Sampling	1
699-38-70C	571474.4	137968.7	117.0	0.7	44.9	0.48	Sampling	1
699-40-62	573334.5	138044.3	121.8	0.7	<1	1.00	Sampling	1
699-40-65	568387.9	138056.9	128.4	172.5	<1	4.42	Sampling	1
699-43-69	566469.0	138086.8	114.5	0.5	143.9	1.53	Sampling	1
699-44-64	566433.3	138119.3	133.9	0.5	<1	8.88	Sampling	1
699-45-69A	559303.7	138503.2	134.3	0.4	95.0	0.09	Sampling	1
699-45-69C	568829.7	137966.5	87.2	16.4	24.5	1.89	Sampling	1
699-47-60	568829.7	137966.5	93.5	21.9	<1	1.00	Sampling	1
699-48-50B	568829.7	137966.5	99.6	31.9	<1	1.00	Sampling	1
699-48-71	568829.7	137966.5	105.7	30.0	93.9	1.84	Sampling	1

Table A-1. Carbon Tetrachloride Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-48-77C	568829.7	137966.5	110.5	29.3	<1	1.00	Sampling	1
699-48-77D	568829.7	137966.5	118.0	11.9	<1	1.00	Sampling	1
699-49-100C	568829.7	137966.5	123.9	12.8	<1	1.00	Sampling	1
699-50-56	572748.2	138841.6	120.6	0.7	<1	1.00	Sampling	1
699-50-74	567359.5	138646.7	127.2	0.2	<1	1.00	Sampling	1
699-51-63	570664.4	139148.4	121.6	0.7	<1	1.00	Sampling	1
699-52-55	573102.4	139443.2	121.7	0.6	<1	1.00	Sampling	1
699-52-55B	573102.2	139440.7	102.9	0.2	<1	1.00	Sampling	1

* Value Type: indicates calculation method for Residual Ratio used in kriging:

Value Type 1 - For monitoring wells, the residual was calculated at each monitoring location as the ratio between the sample average measured value and the value calculated at the end of CY2014 from the simulated results detailed in ECF-200ZP1-16-0076, *Description of Groundwater Calculations and Assessments for the Calendar Year 2015 (CY 2015) 200 Areas Pump and Treat Report*;

Value Type 2 - For extraction wells, the residual was calculated at each extraction well as the ratio between the measured mass recovery during CY-2015 [calculated by multiplying the flow rate by the influent port concentration] and the simulated mass recovery (ECF-200ZP1-16-0076). Note: in case of simulated recovery rate equals to zero, residual ratio was calculated using Value Type 1.

Table A-2. Hexavalent Chromium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W11-97	568317.6	135875.9	59.7	1.3	<1	1.25	Characterization	1
299-W11-97	568317.6	135875.9	65.9	1.3	<1	1.25	Characterization	1
299-W11-97	568317.6	135875.9	72.0	1.6	<1	1.60	Characterization	1
299-W11-97	568317.6	135875.9	78.4	1.5	<1	1.50	Characterization	1
299-W11-97	568317.6	135875.9	84.5	1.3	<1	1.25	Characterization	1
299-W11-97	568317.6	135875.9	90.2	1.5	<1	1.53	Characterization	1
299-W11-97	568317.6	135875.9	97.9	2.1	<1	2.10	Characterization	1
299-W11-97	568317.6	135875.9	102.8	1.3	<1	1.25	Characterization	1
299-W11-97	568317.6	135875.9	110.1	1.3	<1	1.25	Characterization	1
299-W11-97	568317.6	135875.9	115.0	1.3	<1	1.25	Characterization	1
299-W11-97	568317.6	135875.9	121.1	64.8	<1	64.75	Characterization	1

Table A-2. Hexavalent Chromium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W13-2	568832.6	135819.4	66.6	1.5	<1	1.50	Characterization	1
299-W13-2	568832.6	135819.4	73.3	1.3	<1	1.25	Characterization	1
299-W13-2	568832.6	135819.4	79.8	3.1	<1	3.10	Characterization	1
299-W13-2	568832.6	135819.4	86.1	3.9	<1	3.90	Characterization	1
299-W13-2	568832.6	135819.4	93.0	3.0	<1	2.95	Characterization	1
299-W13-2	568832.6	135819.4	98.6	3.8	<1	3.80	Characterization	1
299-W13-2	568832.6	135819.4	105.6	1.3	<1	1.30	Characterization	1
299-W13-2	568832.6	135819.4	111.2	2.8	<1	2.75	Characterization	1
299-W13-2	568832.6	135819.4	117.3	2.6	<1	2.55	Characterization	1
299-W13-2	568832.6	135819.4	123.4	1.5	<1	1.50	Characterization	1
299-W15-228	565745.4	135711.5	49.0	8.0	<1	8.00	Characterization	1
299-W15-228	565745.4	135711.5	74.8	5.7	<1	5.72	Characterization	1
299-W15-228	565745.4	135711.5	80.8	2.3	<1	2.28	Characterization	1
299-W15-228	565745.4	135711.5	86.9	1.9	<1	1.86	Characterization	1
299-W15-228	565745.4	135711.5	90.2	15.0	<1	15.00	Characterization	1
299-W15-228	565745.4	135711.5	93.0	3.4	<1	3.44	Characterization	1
299-W15-228	565745.4	135711.5	99.3	3.4	<1	3.37	Characterization	1
299-W15-228	565745.4	135711.5	105.1	1.2	<1	1.18	Characterization	1
299-W15-228	565745.4	135711.5	111.3	2.0	<1	1.99	Characterization	1
299-W15-228	565745.4	135711.5	117.5	1.6	<1	1.60	Characterization	1
299-W15-228	565745.4	135711.5	123.1	3.1	<1	3.09	Characterization	1
299-W15-228	565745.4	135711.5	129.8	7.6	<1	7.60	Characterization	1
299-W18-41	566045.1	135048.5	56.4	4.5	<1	4.50	Characterization	1
299-W18-41	566045.1	135048.5	74.8	4.5	<1	4.50	Characterization	1
299-W18-41	566045.1	135048.5	80.3	4.5	<1	4.50	Characterization	1
299-W18-41	566045.1	135048.5	86.5	4.6	<1	4.60	Characterization	1
299-W18-41	566045.1	135048.5	92.7	7.7	<1	7.65	Characterization	1
299-W18-41	566045.1	135048.5	98.8	4.6	<1	4.60	Characterization	1
299-W18-41	566045.1	135048.5	104.9	1.0	<1	1.00	Characterization	1

Table A-2. Hexavalent Chromium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W18-41	566045.1	135048.5	110.7	4.5	1.6	2.86	Characterization	1
299-W18-41	566045.1	135048.5	119.9	8.0	1.6	5.09	Characterization	1
299-W18-41	566045.1	135048.5	120.2	1.0	1.6	0.64	Characterization	1
299-W18-41	566045.1	135048.5	126.3	5.9	1.7	3.43	Characterization	1
299-W18-41	566045.1	135048.5	132.2	4.5	2.1	2.14	Characterization	1
299-W19-111	567313.0	135547.0	87.9	1.3	<1	1.25	Characterization	1
299-W19-111	567313.0	135547.0	94.0	1.3	<1	1.25	Characterization	1
299-W19-111	567313.0	135547.0	100.1	2.6	<1	2.55	Characterization	1
299-W19-111	567313.0	135547.0	105.9	4.0	<1	4.00	Characterization	1
299-W19-111	567313.0	135547.0	112.1	2.3	<1	2.30	Characterization	1
299-W19-111	567313.0	135547.0	118.2	1.5	<1	1.50	Characterization	1
299-W19-111	567313.0	135547.0	124.2	16.7	<1	16.70	Characterization	1
299-W5-2	568175.4	137621.1	81.7	32.3	<1	32.30	Characterization	1
299-W5-2	568175.4	137621.1	87.5	51.2	<1	51.20	Characterization	1
299-W5-2	568175.4	137621.1	91.5	108.0	<1	108.00	Characterization	1
299-W5-2	568175.4	137621.1	93.7	58.3	<1	58.25	Characterization	1
299-W5-2	568175.4	137621.1	102.2	1.3	<1	1.25	Characterization	1
299-W5-2	568175.4	137621.1	108.8	108.5	<1	108.50	Characterization	1
299-W5-2	568175.4	137621.1	111.9	3.0	<1	2.95	Characterization	1
299-W5-2	568175.4	137621.1	119.3	1.3	5.1	0.24	Characterization	1
299-W5-2	568175.4	137621.1	124.1	2.0	9.9	0.20	Characterization	1
699-38-64	570189.6	135318.8	66.2	2.6	<1	2.55	Characterization	1
699-38-64	570189.6	135318.8	71.4	2.8	<1	2.75	Characterization	1
699-38-64	570189.6	135318.8	78.6	2.4	<1	2.37	Characterization	1
699-38-64	570189.6	135318.8	81.3	2.7	<1	2.70	Characterization	1
699-38-64	570189.6	135318.8	85.2	8.0	<1	8.00	Characterization	1
699-38-64	570189.6	135318.8	85.3	1.0	<1	1.00	Characterization	1
699-38-64	570189.6	135318.8	91.1	4.8	<1	4.75	Characterization	1
699-38-64	570189.6	135318.8	116.0	4.2	<1	4.15	Characterization	1

Table A-2. Hexavalent Chromium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-38-64	570189.6	135318.8	122.5	7.6	<1	7.60	Characterization	1
699-40-67	569420.3	135815.7	67.1	1.3	1.3	0.97	Characterization	1
699-40-67	569420.3	135815.7	74.4	1.9	1.3	1.42	Characterization	1
699-40-67	569420.3	135815.7	80.1	1.3	1.3	0.97	Characterization	1
699-40-67	569420.3	135815.7	86.8	1.3	1.3	1.03	Characterization	1
699-40-67	569420.3	135815.7	92.5	2.6	<1	2.62	Characterization	1
699-40-67	569420.3	135815.7	98.6	2.0	<1	2.02	Characterization	1
699-40-67	569420.3	135815.7	118.6	1.2	<1	1.16	Characterization	1
699-40-67	569420.3	135815.7	124.1	1.4	<1	1.45	Characterization	1
699-46-68	569109.8	137600.9	83.7	5.5	<1	5.49	Characterization	1
699-46-68	569109.8	137600.9	91.6	30.0	<1	30.00	Characterization	1
699-46-68	569109.8	137600.9	98.6	22.5	<1	22.50	Characterization	1
699-46-68	569109.8	137600.9	105.7	26.0	<1	25.98	Characterization	1
699-46-68	569109.8	137600.9	124.8	1.2	2.3	0.52	Characterization	1
699-49-69	568829.7	137966.5	87.2	10.7	<1	10.65	Characterization	1
699-49-69	568829.7	137966.5	93.5	12.8	<1	12.75	Characterization	1
699-49-69	568829.7	137966.5	99.6	13.6	<1	13.60	Characterization	1
699-49-69	568829.7	137966.5	105.7	12.3	<1	12.30	Characterization	1
699-49-69	568829.7	137966.5	110.5	8.4	1.5	5.64	Characterization	1
699-49-69	568829.7	137966.5	118.0	2.5	10.2	0.24	Characterization	1
699-49-69	568829.7	137966.5	123.9	10.5	11.9	0.88	Characterization	1
299-W11-49	567361.5	135924.7	112.4	1.5	<1	1.50	Pumping Well	1
299-W11-50	566966.3	136756.6	106.1	13.3	12.6	1.06	Pumping Well	2
299-W11-90	567306.8	136519.7	99.3	16.5	21.2	0.78	Pumping Well	2
299-W11-92	566692.9	136351.8	106.3	1.4	4.1	0.33	Pumping Well	2
299-W11-96	567774.8	136772.2	104.9	13.2	12.3	1.07	Pumping Well	2
299-W12-2	568312.7	136610.3	100.2	3.9	4.0	17.87	Pumping Well	2
299-W12-3	568321.5	136998.1	103.0	5.6	4.3	1.29	Pumping Well	2
299-W12-4	568327.4	136363.7	92.7	37.5	5.1	37.54	Pumping Well	1

Table A-2. Hexavalent Chromium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W14-20	566909.2	136284.5	105.3	6.9	8.3	0.83	Pumping Well	2
299-W14-21	567721.5	135890.0	93.6	6.8	<1	6.80	Pumping Well	1
299-W14-22	568324.9	136116.5	97.3	10.0	<1	10.00	Pumping Well	1
299-W14-73	567359.0	136204.6	97.5	1.1	3.6	0.31	Pumping Well	2
299-W14-74	567781.5	136381.3	98.8	5.7	4.4	1.30	Pumping Well	2
299-W15-225	566657.4	136108.9	105.8	0.8	<1	14.05	Pumping Well	2
299-W17-2	566951.6	135806.2	110.0	4.7	<1	4.74	Pumping Well	1
299-W17-3	566925.9	135325.0	106.3	0.7	<1	0.79	Pumping Well	2
299-W22-90	566961.4	134483.2	125.4	2.3	9.6	0.24	Pumping Well	2
299-W22-91	566911.8	134134.5	123.6	50.0	10.9	0.26	Pumping Well	2
299-W22-92	567167.8	134029.8	125.5	63.2	5.2	0.64	Pumping Well	2
299-W5-1	568329.6	137321.5	105.7	5.8	3.4	1.69	Pumping Well	2
299-W6-15	567781.6	137076.3	102.1	10.3	6.8	1.52	Pumping Well	2
299-W10-1	566663.1	136734.6	132.2	5.7	18.6	0.31	Sampling	1
299-W10-14	566017.2	136608.9	80.4	2.4	2.5	0.95	Sampling	1
299-W10-24	566885.4	136798.8	131.0	40.3	5.3	7.56	Sampling	1
299-W10-26	566843.4	136400.6	129.9	74.2	49.4	1.50	Sampling	1
299-W10-27	566844.0	136441.8	130.1	21.0	74.7	0.28	Sampling	1
299-W10-28	566701.6	136709.9	132.1	35.5	33.8	1.05	Sampling	1
299-W10-30	566082.8	136739.3	131.7	3.4	<1	3.40	Sampling	1
299-W10-31	566266.4	136968.3	131.2	3.1	<1	3.10	Sampling	1
299-W10-33	566772.8	136610.2	83.3	4.8	2.0	2.36	Sampling	1
299-W11-13	567099.4	136424.0	106.8	26.9	61.2	0.44	Sampling	1
299-W11-18	567181.9	137161.5	132.0	27.9	<1	27.90	Sampling	1
299-W11-39	566908.4	136779.9	130.5	26.9	17.9	1.50	Sampling	1
299-W11-40	566926.8	136709.7	130.4	59.5	66.3	0.90	Sampling	1
299-W11-41	566935.5	136677.8	130.2	42.3	83.0	0.51	Sampling	1
299-W11-42	566920.4	136745.7	130.6	46.2	41.3	1.12	Sampling	1
299-W11-43	567269.7	136971.0	85.0	194.0	142.9	1.36	Sampling	1

Table A-2. Hexavalent Chromium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W11-45	566992.8	136775.6	124.9	74.2	50.7	1.46	Sampling	1
299-W11-47	566933.8	136680.7	121.4	48.5	89.1	0.54	Sampling	1
299-W11-48	566882.0	136846.2	110.6	92.1	42.5	2.16	Sampling	1
299-W11-87	568141.1	136608.7	104.2	5.6	<1	5.55	Sampling	1
299-W11-88	567874.7	137113.1	79.4	2.0	<1	2.00	Sampling	1
299-W13-1	568148.7	136048.6	98.3	11.7	<1	11.70	Sampling	1
299-W14-11	566901.7	136287.6	123.1	60.4	17.5	3.45	Sampling	1
299-W14-13	566901.7	136282.4	128.4	14.1	8.8	1.59	Sampling	1
299-W14-14	566898.4	136181.0	129.5	8.5	1.3	6.65	Sampling	1
299-W14-15	566899.7	136230.7	129.4	7.8	4.3	1.83	Sampling	1
299-W14-16	567001.3	136318.5	129.5	39.2	13.1	2.98	Sampling	1
299-W14-17	567006.8	136218.3	129.3	5.8	4.6	1.26	Sampling	1
299-W14-18	566897.5	136344.2	129.2	46.1	26.0	1.77	Sampling	1
299-W14-19	566898.6	136135.1	129.4	9.1	<1	9.10	Sampling	1
299-W14-72	567328.4	135941.3	87.2	2.1	<1	2.10	Sampling	1
299-W15-11	566412.3	136000.7	134.2	8.1	<1	8.10	Sampling	1
299-W15-152	566309.4	135550.0	132.1	8.9	<1	8.93	Sampling	1
299-W15-17	566306.9	135719.0	78.9	1.8	<1	1.80	Sampling	1
299-W15-33	566433.3	135966.7	133.1	7.2	<1	7.20	Sampling	1
299-W15-37	566716.5	135248.3	132.7	5.7	<1	5.70	Sampling	1
299-W15-42	566581.8	135627.0	129.4	10.0	<1	9.95	Sampling	1
299-W15-44	566685.0	136066.5	130.7	7.3	<1	7.28	Sampling	1
299-W15-46	566752.2	135586.7	127.4	6.5	<1	6.50	Sampling	1
299-W15-49	566307.2	135972.9	131.2	9.7	<1	9.70	Sampling	1
299-W15-50	566793.5	135790.7	123.0	7.9	<1	7.90	Sampling	1
299-W15-7	566675.9	135920.2	122.3	1.5	<1	1.50	Sampling	1
299-W15-763	566809.2	136028.8	130.2	6.0	<1	6.02	Sampling	1
299-W15-765	566697.0	136373.1	130.2	12.8	15.5	0.82	Sampling	1
299-W15-83	566304.5	135826.2	132.0	7.5	<1	7.50	Sampling	1

Table A-2. Hexavalent Chromium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W15-94	566307.6	135640.3	132.1	8.6	<1	8.60	Sampling	1
299-W18-1	566421.5	135465.2	113.8	6.6	<1	6.60	Sampling	1
299-W18-16	566605.1	135425.7	131.1	12.3	<1	12.30	Sampling	1
299-W18-21	566097.7	134978.7	135.3	4.2	<1	4.20	Sampling	1
299-W18-22	566088.6	134990.2	72.6	2.0	<1	2.00	Sampling	1
299-W18-40	566723.3	134996.4	130.9	5.1	3.0	1.67	Sampling	1
299-W19-12	566897.1	135059.4	131.8	11.1	2.3	4.75	Sampling	1
299-W19-4	567949.9	135350.8	98.3	2.0	<1	2.00	Sampling	1
299-W19-41	566896.5	135004.5	131.9	7.5	4.3	1.74	Sampling	1
299-W19-42	566896.8	135122.9	131.9	8.2	<1	8.22	Sampling	1
299-W19-44	566897.0	135042.0	131.1	7.0	3.3	2.13	Sampling	1
299-W19-45	566897.7	135087.7	132.0	9.9	<1	9.93	Sampling	1
299-W19-47	566895.3	135161.9	131.0	5.3	<1	5.28	Sampling	1
299-W19-6	567133.3	134693.8	89.8	2.0	4.0	0.50	Sampling	1
299-W22-113	566904.6	134193.0	128.2	3.4	143.2	0.02	Sampling	1
299-W22-115	566939.4	134292.4	127.9	4.7	155.6	0.03	Sampling	1
299-W22-116	566900.5	134139.9	127.2	120.0	113.7	1.06	Sampling	1
299-W22-24P	567648.2	134410.9	44.0	1.0	<1	1.00	Sampling	1
299-W22-45	566945.2	134292.5	131.8	9.5	116.4	0.08	Sampling	1
299-W22-47	566908.7	134076.3	130.5	7.3	75.3	0.10	Sampling	1
299-W22-49	566904.4	134201.6	131.8	16.6	105.4	0.16	Sampling	1
299-W22-50	566904.2	134139.7	132.0	73.5	81.0	0.91	Sampling	1
299-W22-69	567179.6	134347.8	129.4	7.2	87.1	0.08	Sampling	1
299-W22-72	567237.4	134207.1	129.8	1.2	24.8	0.05	Sampling	1
299-W22-80	566842.9	134125.6	132.1	13.3	94.9	0.14	Sampling	1
299-W22-81	567000.3	134354.2	131.5	9.9	109.9	0.09	Sampling	1
299-W22-82	567004.7	134167.1	131.9	39.0	85.2	0.46	Sampling	1
299-W22-83	567009.1	134092.5	132.0	188.7	65.7	2.87	Sampling	1

Table A-2. Hexavalent Chromium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W22-84	566978.8	134547.6	131.7	4.2	91.8	0.05	Sampling	1
299-W22-85	566902.9	134260.6	132.2	3.2	111.4	0.03	Sampling	1
299-W22-86	567186.7	134041.3	129.8	27.9	47.0	0.59	Sampling	1
299-W22-87	567541.8	134539.9	129.7	2.0	5.2	0.38	Sampling	1
299-W22-89	566906.8	134031.7	129.8	2.3	86.3	0.03	Sampling	1
299-W22-93	566949.1	134486.0	127.0	164.0	139.8	1.17	Sampling	1
299-W22-94	567009.8	134429.8	127.8	4.1	132.1	0.03	Sampling	1
299-W22-95	567170.5	134549.1	126.0	24.6	142.6	0.17	Sampling	1
299-W22-96	567351.9	134145.6	129.2	8.4	21.7	0.39	Sampling	1
299-W23-15	566794.0	134127.2	132.4	5.9	121.0	0.05	Sampling	1
299-W23-19	566759.1	134166.7	137.9	364.2	69.8	5.22	Sampling	1
299-W23-20	566717.7	134446.2	132.1	4.3	60.2	0.07	Sampling	1
299-W23-21	566707.7	134294.0	132.1	5.9	85.0	0.07	Sampling	1
299-W26-13	566424.4	133293.6	132.1	126.7	<1	126.67	Sampling	1
299-W26-14	566682.7	133539.2	131.3	4.2	<1	4.20	Sampling	1
299-W27-2	566908.3	133670.4	81.2	5.0	104.9	0.05	Sampling	1
299-W6-3	567118.2	137299.1	87.0	9.2	1.3	7.04	Sampling	1
299-W6-6	567318.7	137638.7	87.3	6.0	1.8	3.26	Sampling	1
299-W7-3	566292.0	137638.6	66.4	5.4	<1	5.44	Sampling	1
699-30-66	569991.0	132739.2	90.8	118.0	65.0	1.81	Sampling	1
699-32-62	571009.6	133215.9	113.2	130.0	135.4	0.96	Sampling	1
699-32-76	566683.9	133137.7	129.4	9.1	<1	9.12	Sampling	1
699-33-74	567472.7	133552.2	129.0	8.2	<1	8.15	Sampling	1
699-33-75	566907.8	133662.5	129.6	2.4	<1	2.41	Sampling	1
699-33-76	566621.2	133600.4	130.2	3.4	<1	3.44	Sampling	1
699-34-61	571395.9	133809.9	125.4	55.1	58.4	0.94	Sampling	1
699-34-72	567860.0	133785.3	128.4	29.5	<1	29.45	Sampling	1
699-35-66A	569857.9	134099.2	119.6	17.1	<1	17.08	Sampling	1
699-35-78A	566063.6	134271.3	134.0	2.0	<1	2.00	Sampling	1

Table A-2. Hexavalent Chromium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-36-61A	571395.5	134557.1	119.5	9.9	5.4	1.83	Sampling	1
699-36-66B	569731.3	134469.0	125.5	3.2	<1	3.15	Sampling	1
699-36-70A	568466.7	134308.8	130.2	10.2	<1	10.16	Sampling	1
699-37-66	569730.3	134797.2	125.2	2.6	<1	2.62	Sampling	1
699-43-69	568967.0	136488.5	99.2	29.2	<1	29.20	Sampling	1
699-44-64	570390.7	136897.4	119.2	7.7	<1	7.70	Sampling	1
699-45-69A	568729.3	137182.7	128.6	8.2	<1	8.20	Sampling	1
699-45-69C	568947.1	137233.8	107.5	30.2	<1	30.23	Sampling	1
699-47-60	571474.4	137968.7	117.0	4.3	<1	4.31	Sampling	1
699-48-71	568387.9	138056.9	128.4	92.0	79.8	1.15	Sampling	1
699-48-77C	566469.0	138086.8	114.5	2.9	<1	2.89	Sampling	1
699-48-77D	566433.3	138119.3	133.9	2.5	<1	2.48	Sampling	1
699-50-74	567359.5	138646.7	127.2	4.5	<1	4.50	Sampling	1
699-51-63	570664.4	139148.4	121.6	1.9	<1	1.90	Sampling	1
699-65-72	567883.7	143107.9	120.9	6.4	<1	6.38	Sampling	1

* Value Type: indicates calculation method for Residual Ratio used in kriging:

Value Type 1 - For monitoring wells, the residual was calculated at each monitoring location as the ratio between the sample average measured value and the value calculated at the end of CY2014 from the simulated results detailed in ECF-200ZP1-16-0076, *Description of Groundwater Calculations and Assessments for the Calendar Year 2015 (CY 2015) 200 Areas Pump and Treat Report*;

Value Type 2 - For extraction wells, the residual was calculated at each extraction well as the ratio between the measured mass recovery during CY-2015 [calculated by multiplying the flow rate by the influent port concentration] and the simulated mass recovery (ECF-200ZP1-16-0076). Note: in case of simulated recovery rate equals to zero, residual ratio was calculated using Value Type 1.

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-E11-1	571003.1	134505.3	105.1	17700.0	<1000	17.70	Characterization	1
299-E11-1	571003.1	134505.3	111.2	8410.0	<1000	8.41	Characterization	1
299-E11-1	571003.1	134505.3	117.3	22600.0	<1000	22.60	Characterization	1
299-E11-1	571003.1	134505.3	120.4	20400.0	<1000	20.40	Characterization	1

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-E20-1	570503.0	135199.8	112.1	177000.0	63134.6	2.80	Characterization	1
299-E20-1	570503.0	135199.8	115.2	186000.0	70960.6	2.62	Characterization	1
299-E20-1	570503.0	135199.8	118.4	167000.0	97187.0	1.72	Characterization	1
299-E20-2	570897.9	134895.8	109.8	33100.0	<1000	33.10	Characterization	1
299-E20-2	570897.9	134895.8	115.9	20600.0	25028.6	0.82	Characterization	1
299-E20-2	570897.9	134895.8	119.0	37500.0	19586.8	1.91	Characterization	1
299-W11-97	568317.6	135875.9	59.7	124.0	<1000	0.12	Characterization	1
299-W11-97	568317.6	135875.9	65.9	26700.0	<1000	26.70	Characterization	1
299-W11-97	568317.6	135875.9	72.0	23900.0	<1000	23.90	Characterization	1
299-W11-97	568317.6	135875.9	78.4	23500.0	<1000	23.50	Characterization	1
299-W11-97	568317.6	135875.9	84.5	20600.0	<1000	20.60	Characterization	1
299-W11-97	568317.6	135875.9	90.2	25300.0	<1000	25.30	Characterization	1
299-W11-97	568317.6	135875.9	97.9	30900.0	<1000	30.90	Characterization	1
299-W11-97	568317.6	135875.9	102.8	27500.0	<1000	27.50	Characterization	1
299-W11-97	568317.6	135875.9	110.1	27800.0	<1000	27.80	Characterization	1
299-W11-97	568317.6	135875.9	115.0	32200.0	<1000	32.20	Characterization	1
299-W11-97	568317.6	135875.9	121.1	56700.0	<1000	56.70	Characterization	1
299-W13-2	568832.6	135819.4	66.6	24300.0	<1000	24.30	Characterization	1
299-W13-2	568832.6	135819.4	73.3	24550.0	<1000	24.55	Characterization	1
299-W13-2	568832.6	135819.4	79.8	26100.0	<1000	26.10	Characterization	1
299-W13-2	568832.6	135819.4	86.1	27000.0	1003.9	26.90	Characterization	1
299-W13-2	568832.6	135819.4	93.0	21700.0	2188.4	9.92	Characterization	1
299-W13-2	568832.6	135819.4	98.6	23500.0	3170.1	7.41	Characterization	1
299-W13-2	568832.6	135819.4	105.6	27400.0	43555.1	0.63	Characterization	1
299-W13-2	568832.6	135819.4	111.2	25700.0	68481.8	0.38	Characterization	1
299-W13-2	568832.6	135819.4	117.3	29700.0	63510.6	0.47	Characterization	1
299-W13-2	568832.6	135819.4	123.4	24800.0	50353.3	0.49	Characterization	1
299-W15-228	565745.4	135711.5	49.0	146.0	<1000	0.15	Characterization	1
299-W15-228	565745.4	135711.5	74.8	13300.0	<1000	13.30	Characterization	1

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W15-228	565745.4	135711.5	80.8	12700.0	<1000	12.70	Characterization	1
299-W15-228	565745.4	135711.5	86.9	11800.0	<1000	11.80	Characterization	1
299-W15-228	565745.4	135711.5	90.2	35400.0	<1000	35.40	Characterization	1
299-W15-228	565745.4	135711.5	93.0	24300.0	<1000	24.30	Characterization	1
299-W15-228	565745.4	135711.5	99.3	73000.0	<1000	73.00	Characterization	1
299-W15-228	565745.4	135711.5	105.1	96100.0	<1000	96.10	Characterization	1
299-W15-228	565745.4	135711.5	111.3	33600.0	<1000	33.60	Characterization	1
299-W15-228	565745.4	135711.5	117.5	80600.0	<1000	80.60	Characterization	1
299-W15-228	565745.4	135711.5	123.1	106000.0	<1000	106.00	Characterization	1
299-W15-228	565745.4	135711.5	129.8	103000.0	1151.2	89.47	Characterization	1
299-W18-260	566862.5	135196.9	106.9	4400.0	15559.5	0.28	Characterization	1
299-W18-260	566862.5	135196.9	112.9	35300.0	39030.5	0.90	Characterization	1
299-W18-260	566862.5	135196.9	118.8	43400.0	39030.5	1.11	Characterization	1
299-W18-260	566862.5	135196.9	125.0	53100.0	28930.2	1.84	Characterization	1
299-W18-260	566862.5	135196.9	130.4	57100.0	18585.2	3.07	Characterization	1
299-W18-41	566045.1	135048.5	45.4	26100.0	<1000	26.10	Characterization	1
299-W18-41	566045.1	135048.5	52.6	37600.0	<1000	37.60	Characterization	1
299-W18-41	566045.1	135048.5	56.4	292.0	<1000	0.29	Characterization	1
299-W18-41	566045.1	135048.5	74.8	33900.0	1922.7	17.63	Characterization	1
299-W18-41	566045.1	135048.5	80.3	52700.0	1922.7	27.41	Characterization	1
299-W18-41	566045.1	135048.5	86.5	25700.0	3810.0	6.75	Characterization	1
299-W18-41	566045.1	135048.5	92.7	25200.0	8912.8	2.83	Characterization	1
299-W18-41	566045.1	135048.5	98.8	68200.0	8912.8	7.65	Characterization	1
299-W18-41	566045.1	135048.5	104.9	72600.0	10494.9	6.92	Characterization	1
299-W18-41	566045.1	135048.5	110.7	76100.0	16886.4	4.51	Characterization	1
299-W18-41	566045.1	135048.5	120.2	83700.0	16886.4	4.96	Characterization	1
299-W18-41	566045.1	135048.5	126.3	38300.0	16898.6	2.27	Characterization	1
299-W18-41	566045.1	135048.5	132.2	36700.0	16934.6	2.17	Characterization	1
299-W19-111	567313.0	135547.0	87.9	15900.0	<1000	15.90	Characterization	1

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W19-111	567313.0	135547.0	94.0	7970.0	<1000	7.97	Characterization	1
299-W19-111	567313.0	135547.0	100.1	7530.0	<1000	7.53	Characterization	1
299-W19-111	567313.0	135547.0	105.9	7530.0	<1000	7.53	Characterization	1
299-W19-111	567313.0	135547.0	112.1	3720.0	4030.8	0.92	Characterization	1
299-W19-111	567313.0	135547.0	118.2	2685.0	12080.5	0.22	Characterization	1
299-W19-111	567313.0	135547.0	124.2	2470.0	11688.3	0.21	Characterization	1
299-W19-113	567689.6	135008.2	109.1	27000.0	42454.5	0.64	Characterization	1
299-W19-113	567689.6	135008.2	115.2	166000.0	159614.6	1.04	Characterization	1
299-W19-113	567689.6	135008.2	121.3	633000.0	381592.1	1.66	Characterization	1
299-W19-113	567689.6	135008.2	126.9	1250000.0	381592.1	3.28	Characterization	1
299-W19-114	567901.9	135013.2	94.3	30500.0	2727.7	11.18	Characterization	1
299-W19-114	567901.9	135013.2	103.4	203000.0	10062.0	20.17	Characterization	1
299-W19-114	567901.9	135013.2	109.6	677000.0	32227.0	21.01	Characterization	1
299-W19-114	567901.9	135013.2	115.8	549000.0	101427.2	5.41	Characterization	1
299-W19-114	567901.9	135013.2	121.9	660000.0	240740.4	2.74	Characterization	1
299-W19-114	567901.9	135013.2	126.3	68200.0	240740.4	0.28	Characterization	1
299-W23-236	566798.7	134128.2	126.0	7880.0	60283.1	0.13	Characterization	1
299-W23-236	566798.7	134128.2	136.0	7750.0	29027.8	0.27	Characterization	1
299-W5-2	568175.4	137621.1	81.7	664000.0	170489.2	3.89	Characterization	1
299-W5-2	568175.4	137621.1	87.5	708000.0	170489.2	4.15	Characterization	1
299-W5-2	568175.4	137621.1	91.5	753000.0	170489.2	4.42	Characterization	1
299-W5-2	568175.4	137621.1	93.7	753000.0	180304.1	4.18	Characterization	1
299-W5-2	568175.4	137621.1	102.2	97400.0	245761.6	0.40	Characterization	1
299-W5-2	568175.4	137621.1	108.8	708000.0	240546.2	2.94	Characterization	1
299-W5-2	568175.4	137621.1	111.9	443000.0	237101.9	1.87	Characterization	1
299-W5-2	568175.4	137621.1	119.3	620000.0	221712.8	2.80	Characterization	1
299-W5-2	568175.4	137621.1	124.1	239000.0	224958.6	1.06	Characterization	1
299-W6-15	567781.7	137076.4	80.9	169000.0	209772.8	0.81	Characterization	1
299-W6-15	567781.7	137076.4	86.4	216000.0	312128.4	0.69	Characterization	1

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W6-15	567781.7	137076.4	92.5	289000.0	368489.6	0.78	Characterization	1
299-W6-15	567781.7	137076.4	110.8	395000.0	276292.8	1.43	Characterization	1
299-W6-15	567781.7	137076.4	123.0	289000.0	187505.7	1.54	Characterization	1
699-38-64	570189.6	135318.8	66.2	25200.0	<1000	25.20	Characterization	1
699-38-64	570189.6	135318.8	78.6	37200.0	<1000	37.20	Characterization	1
699-38-64	570189.6	135318.8	85.2	40300.0	<1000	40.30	Characterization	1
699-38-64	570189.6	135318.8	91.1	46500.0	<1000	46.50	Characterization	1
699-38-64	570189.6	135318.8	116.0	258000.0	72066.9	3.58	Characterization	1
699-38-64	570189.6	135318.8	122.5	212000.0	158628.8	1.34	Characterization	1
699-40-67	569420.3	135815.7	67.1	14800.0	9413.4	1.57	Characterization	1
699-40-67	569420.3	135815.7	74.4	28300.0	9413.4	3.01	Characterization	1
699-40-67	569420.3	135815.7	80.1	31300.0	9413.4	3.33	Characterization	1
699-40-67	569420.3	135815.7	86.8	35600.0	12389.1	2.87	Characterization	1
699-40-67	569420.3	135815.7	92.5	29350.0	28928.4	1.01	Characterization	1
699-40-67	569420.3	135815.7	98.6	28700.0	46860.4	0.61	Characterization	1
699-40-67	569420.3	135815.7	118.6	97400.0	124045.4	0.79	Characterization	1
699-40-67	569420.3	135815.7	124.1	113000.0	129165.1	0.87	Characterization	1
699-46-68	569109.8	137600.9	83.7	240000.0	113545.8	2.11	Characterization	1
699-46-68	569109.8	137600.9	91.6	245000.0	113545.8	2.16	Characterization	1
699-46-68	569109.8	137600.9	98.6	248000.0	113545.8	2.18	Characterization	1
699-46-68	569109.8	137600.9	105.7	211000.0	100774.0	2.09	Characterization	1
699-46-68	569109.8	137600.9	124.8	30900.0	25411.7	1.22	Characterization	1
699-49-69	568829.7	137966.5	87.2	122000.0	70450.7	1.73	Characterization	1
699-49-69	568829.7	137966.5	93.5	131000.0	70450.7	1.86	Characterization	1
699-49-69	568829.7	137966.5	99.6	188500.0	70450.7	2.68	Characterization	1
699-49-69	568829.7	137966.5	105.7	186000.0	92627.9	2.01	Characterization	1
699-49-69	568829.7	137966.5	110.5	184000.0	93225.7	1.97	Characterization	1
699-49-69	568829.7	137966.5	118.0	174000.0	137588.1	1.26	Characterization	1
699-49-69	568829.7	137966.5	123.9	165000.0	141499.9	1.17	Characterization	1

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W11-49	567361.5	135924.7	112.4	7422.6	<1000	0.69	Pumping Well	2
299-W11-50	566966.3	136756.6	106.1	38802.4	<1000	0.88	Pumping Well	2
299-W11-90	567306.8	136519.7	99.3	53536.6	<1000	0.81	Pumping Well	2
299-W11-92	566692.9	136351.8	106.3	9986.3	<1000	0.33	Pumping Well	2
299-W11-96	567774.8	136772.2	104.9	54031.3	<1000	0.89	Pumping Well	2
299-W12-2	568312.7	136610.3	100.2	14836.6	<1000	0.70	Pumping Well	2
299-W12-3	568321.5	136998.1	103.0	28579.1	<1000	0.83	Pumping Well	2
299-W12-4	568327.4	136363.7	92.7	7182.5	<1000	0.91	Pumping Well	2
299-W14-20	566909.2	136284.5	105.3	46065.7	<1000	1.08	Pumping Well	2
299-W14-21	567721.5	135890.0	93.6	2003.4	<1000	0.77	Pumping Well	2
299-W14-22	568324.9	136116.5	97.3	4738.7	<1000	1.74	Pumping Well	2
299-W14-73	567359.0	136204.6	97.5	16945.8	<1000	0.76	Pumping Well	2
299-W14-74	567781.5	136381.3	98.8	25618.7	<1000	0.83	Pumping Well	2
299-W15-225	566657.4	136108.9	105.8	7666.4	<1000	0.54	Pumping Well	2
299-W17-2	566951.6	135806.2	110.0	16908.6	<1000	1.27	Pumping Well	2
299-W17-3	566925.9	135325.0	106.3	7491.5	<1000	0.61	Pumping Well	2
299-W22-90	566961.4	134483.2	125.4	1344.5	<1000	0.65	Pumping Well	2
299-W22-91	566911.8	134134.5	123.6	2323.7	<1000	0.74	Pumping Well	2
299-W22-92	567167.8	134029.8	125.5	2664.5	<1000	2.00	Pumping Well	2
299-W5-1	568329.6	137321.5	105.7	28369.8	<1000	0.70	Pumping Well	2
299-W10-1	566663.1	136734.6	132.2	77300.0	291134.0	0.27	Sampling	1
299-W10-14	566017.2	136608.9	80.4	22000.0	17154.5	1.28	Sampling	1
299-W10-24	566885.4	136798.8	131.0	168666.7	180631.5	0.93	Sampling	1
299-W10-26	566843.4	136400.6	129.9	275000.0	610179.4	0.45	Sampling	1
299-W10-27	566844.0	136441.8	130.1	238166.7	804579.8	0.30	Sampling	1
299-W10-28	566701.6	136709.9	132.1	140500.0	473446.4	0.30	Sampling	1
299-W10-29	566083.0	136828.7	131.6	31150.0	1400.0	22.25	Sampling	1
299-W10-30	566082.8	136739.3	131.7	32250.0	<1000	32.25	Sampling	1
299-W10-31	566266.4	136968.3	131.2	46500.0	4325.5	10.75	Sampling	1

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W10-33	566772.8	136610.2	83.3	15000.0	31699.8	0.47	Sampling	1
299-W11-13	567099.4	136424.0	106.8	303000.0	171809.5	1.76	Sampling	1
299-W11-18	567181.9	137161.5	132.0	109000.0	63790.1	1.71	Sampling	1
299-W11-39	566908.4	136779.9	130.5	98050.0	276317.2	0.35	Sampling	1
299-W11-40	566926.8	136709.7	130.4	256250.0	633435.2	0.40	Sampling	1
299-W11-41	566935.5	136677.8	130.2	257000.0	738820.0	0.35	Sampling	1
299-W11-42	566920.4	136745.7	130.6	175750.0	451032.8	0.39	Sampling	1
299-W11-43	567269.7	136971.0	85.0	462500.0	328161.9	1.41	Sampling	1
299-W11-45	566992.8	136775.6	124.9	244500.0	246900.3	0.99	Sampling	1
299-W11-47	566933.8	136680.7	121.4	207250.0	407450.6	0.51	Sampling	1
299-W11-48	566882.0	136846.2	110.6	277000.0	166649.4	1.66	Sampling	1
299-W11-87	568141.1	136608.7	104.2	69300.0	102731.0	0.67	Sampling	1
299-W11-88	567874.7	137113.1	79.4	35233.3	133510.7	0.26	Sampling	1
299-W13-1	568148.7	136048.6	98.3	16650.0	<1000	16.65	Sampling	1
299-W14-11	566901.7	136287.6	123.1	508250.0	167555.7	3.03	Sampling	1
299-W14-13	566901.7	136282.4	128.4	415000.0	175865.2	2.36	Sampling	1
299-W14-14	566898.4	136181.0	129.5	120875.0	120758.8	1.00	Sampling	1
299-W14-15	566899.7	136230.7	129.4	171000.0	139835.3	1.22	Sampling	1
299-W14-16	567001.3	136318.5	129.5	273500.0	163938.3	1.67	Sampling	1
299-W14-17	567006.8	136218.3	129.3	128000.0	117332.5	1.09	Sampling	1
299-W14-18	566897.5	136344.2	129.2	300000.0	345749.7	0.87	Sampling	1
299-W14-19	566898.6	136135.1	129.4	112250.0	128032.8	0.88	Sampling	1
299-W14-72	567328.4	135941.3	87.2	28200.0	1406.9	20.04	Sampling	1
299-W15-11	566412.3	136000.7	134.2	101000.0	53255.4	1.90	Sampling	1
299-W15-152	566309.4	135550.0	132.1	113600.0	34603.0	3.28	Sampling	1
299-W15-17	566306.9	135719.0	78.9	23966.7	1960.3	12.23	Sampling	1
299-W15-224	566307.9	135926.1	131.2	101300.0	41940.4	2.42	Sampling	1
299-W15-30	566304.6	135748.9	134.2	110000.0	33696.6	3.26	Sampling	1
299-W15-33	566433.3	135966.7	133.1	101500.0	52226.9	1.94	Sampling	1

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W15-37	566716.5	135248.3	132.7	71050.0	24017.7	2.96	Sampling	1
299-W15-42	566581.8	135627.0	129.4	102500.0	93550.9	1.10	Sampling	1
299-W15-44	566685.0	136066.5	130.7	81925.0	61698.9	1.33	Sampling	1
299-W15-46	566752.2	135586.7	127.4	104000.0	107988.2	0.96	Sampling	1
299-W15-49	566307.2	135972.9	131.2	77500.0	45068.2	1.72	Sampling	1
299-W15-50	566793.5	135790.7	123.0	100450.0	94286.5	1.07	Sampling	1
299-W15-7	566675.9	135920.2	122.3	76400.0	87527.7	0.87	Sampling	1
299-W15-763	566809.2	136028.8	130.2	103580.0	100217.8	1.03	Sampling	1
299-W15-765	566697.0	136373.1	130.2	49000.0	193612.3	0.25	Sampling	1
299-W15-83	566304.5	135826.2	132.0	107733.3	36174.8	2.98	Sampling	1
299-W15-94	566307.6	135640.3	132.1	109250.0	33376.5	3.27	Sampling	1
299-W18-1	566421.5	135465.2	113.8	100500.0	100001.3	1.00	Sampling	1
299-W18-15	566380.0	134733.5	134.1	55100.0	<1000	55.10	Sampling	1
299-W18-16	566605.1	135425.7	131.1	810000.0	118132.4	6.86	Sampling	1
299-W18-21	566097.7	134978.7	135.3	35400.0	9467.1	3.74	Sampling	1
299-W18-22	566088.6	134990.2	72.6	15170.0	<1000	15.17	Sampling	1
299-W18-40	566723.3	134996.4	130.9	68600.0	17363.6	3.95	Sampling	1
299-W19-101	567939.1	135014.1	128.7	34500.0	185990.4	0.19	Sampling	1
299-W19-105	567565.2	134745.4	129.8	11345.0	<1000	11.35	Sampling	1
299-W19-107	567997.9	135205.7	119.7	112000.0	154194.8	0.73	Sampling	1
299-W19-12	566897.1	135059.4	131.8	85750.0	5817.9	14.74	Sampling	1
299-W19-18	567360.6	135012.4	124.8	58400.0	3641.4	16.04	Sampling	1
299-W19-34A	567673.6	135012.2	113.3	34000.0	108510.5	0.31	Sampling	1
299-W19-35	567992.1	135015.2	130.4	100000.0	102702.9	0.97	Sampling	1
299-W19-36	567634.7	135017.1	130.4	899000.0	162813.8	5.52	Sampling	1
299-W19-39	567901.7	134886.7	131.5	61875.0	64591.8	0.96	Sampling	1
299-W19-4	567949.9	135350.8	98.3	109950.0	5144.2	21.37	Sampling	1
299-W19-41	566896.5	135004.5	131.9	30720.0	4025.4	7.63	Sampling	1
299-W19-42	566896.8	135122.9	131.9	52420.0	<1000	52.42	Sampling	1

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W19-43	567699.2	135004.0	130.5	2307500.0	300454.5	7.68	Sampling	1
299-W19-44	566897.0	135042.0	131.1	64275.0	5697.2	11.28	Sampling	1
299-W19-45	566897.7	135087.7	132.0	106200.0	<1000	106.20	Sampling	1
299-W19-46	567782.7	134842.5	130.3	30175.0	75756.9	0.40	Sampling	1
299-W19-47	566895.3	135161.9	131.0	66940.0	11271.0	5.94	Sampling	1
299-W19-48	567822.9	134926.0	126.9	67180.0	204142.9	0.33	Sampling	1
299-W19-49	567568.0	134894.4	129.0	37300.0	2463.9	15.14	Sampling	1
299-W19-6	567133.3	134693.8	89.8	3720.0	<1000	3.72	Sampling	1
299-W21-2	568124.4	134573.8	129.5	40650.0	4490.3	9.05	Sampling	1
299-W22-113	566904.6	134193.0	128.2	50300.0	56057.5	0.90	Sampling	1
299-W22-115	566939.4	134292.4	127.9	70800.0	58026.9	1.22	Sampling	1
299-W22-116	566900.5	134139.9	127.2	70800.0	41199.6	1.72	Sampling	1
299-W22-24P	567648.2	134410.9	44.0	311.0	<1000	0.31	Sampling	1
299-W22-45	566945.2	134292.5	131.8	107000.0	43653.1	2.45	Sampling	1
299-W22-47	566908.7	134076.3	130.5	11532.5	20171.4	0.57	Sampling	1
299-W22-49	566904.4	134201.6	131.8	63700.0	41483.8	1.54	Sampling	1
299-W22-50	566904.2	134139.7	132.0	73500.0	30010.3	2.45	Sampling	1
299-W22-69	567179.6	134347.8	129.4	21550.0	7390.9	2.92	Sampling	1
299-W22-72	567237.4	134207.1	129.8	34400.0	9008.5	3.82	Sampling	1
299-W22-80	566842.9	134125.6	132.1	11900.0	32140.2	0.37	Sampling	1
299-W22-81	567000.3	134354.2	131.5	29300.0	36319.1	0.81	Sampling	1
299-W22-82	567004.7	134167.1	131.9	64850.0	46732.9	1.39	Sampling	1
299-W22-83	567009.1	134092.5	132.0	75100.0	37729.6	1.99	Sampling	1
299-W22-84	566978.8	134547.6	131.7	26200.0	6285.6	4.17	Sampling	1
299-W22-85	566902.9	134260.6	132.2	45275.0	41538.3	1.09	Sampling	1
299-W22-86	567186.7	134041.3	129.8	28175.0	11554.6	2.44	Sampling	1
299-W22-87	567541.8	134539.9	129.7	11605.0	<1000	11.61	Sampling	1
299-W22-88	568046.5	134390.5	128.2	7790.0	<1000	7.79	Sampling	1
299-W22-89	566906.8	134031.7	129.8	12850.0	10395.6	1.24	Sampling	1

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W22-93	566949.1	134486.0	127.0	53100.0	21408.1	2.48	Sampling	1
299-W22-94	567009.8	134429.8	127.8	15632.5	31160.3	0.50	Sampling	1
299-W22-95	567170.5	134549.1	126.0	47611.1	2377.9	20.02	Sampling	1
299-W22-96	567351.9	134145.6	129.2	22200.0	1329.9	16.69	Sampling	1
299-W23-15	566794.0	134127.2	132.4	8010.0	40412.1	0.20	Sampling	1
299-W23-19	566759.1	134166.7	137.9	142916.7	26104.8	5.47	Sampling	1
299-W23-20	566717.7	134446.2	132.1	11450.0	1780.2	6.43	Sampling	1
299-W23-21	566707.7	134294.0	132.1	82466.7	33515.8	2.46	Sampling	1
299-W23-4	566628.2	134391.9	129.8	27200.0	2189.4	12.42	Sampling	1
299-W26-13	566424.4	133293.6	132.1	28400.0	<1000	28.40	Sampling	1
299-W26-14	566682.7	133539.2	131.3	5060.0	<1000	5.06	Sampling	1
299-W27-2	566908.3	133670.4	81.2	5685.0	<1000	5.69	Sampling	1
299-W6-3	567118.2	137299.1	87.0	243000.0	101798.7	2.39	Sampling	1
299-W6-6	567318.7	137638.7	87.3	30350.0	112720.6	0.27	Sampling	1
299-W7-3	566292.0	137638.6	66.4	16033.3	<1000	16.03	Sampling	1
299-W9-2	565742.2	136872.8	131.7	26300.0	<1000	26.30	Sampling	1
699-26-89	562778.7	131375.1	64.2	3110.0	<1000	3.11	Sampling	1
699-30-66	569991.0	132739.2	90.8	21625.0	<1000	21.63	Sampling	1
699-32-62	571009.6	133215.9	113.2	20500.0	<1000	20.50	Sampling	1
699-32-72A	567942.7	133362.6	62.2	17300.0	<1000	17.30	Sampling	1
699-32-76	566683.9	133137.7	129.4	11740.0	<1000	11.74	Sampling	1
699-33-74	567472.7	133552.2	129.0	12250.0	<1000	12.25	Sampling	1
699-33-75	566907.8	133662.5	129.6	5372.0	<1000	5.37	Sampling	1
699-33-76	566621.2	133600.4	130.2	7095.0	<1000	7.10	Sampling	1
699-34-61	571395.9	133809.9	125.4	18800.0	<1000	18.80	Sampling	1
699-34-72	567860.0	133785.3	128.4	34100.0	<1000	34.10	Sampling	1
699-34-88	563011.5	133950.3	78.1	34200.0	<1000	34.20	Sampling	1
699-35-66A	569857.9	134099.2	119.6	23525.0	<1000	23.53	Sampling	1
699-35-78A	566063.6	134271.3	134.0	8410.0	<1000	8.41	Sampling	1

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-36-61A	571395.5	134557.1	119.5	17700.0	<1000	17.70	Sampling	1
699-36-66B	569731.3	134469.0	125.5	51090.0	27236.8	1.88	Sampling	1
699-36-70A	568466.7	134308.8	130.2	26766.7	<1000	26.77	Sampling	1
699-36-70B	568427.8	134626.0	128.6	91425.0	43894.4	2.08	Sampling	1
699-37-66	569730.3	134797.2	125.2	148400.0	126299.4	1.17	Sampling	1
699-38-61	571219.1	134997.3	122.4	24500.0	5606.9	4.37	Sampling	1
699-38-65	570090.2	135039.8	117.9	181500.0	113730.9	1.60	Sampling	1
699-38-68A	569180.3	134931.6	129.7	181000.0	76655.6	2.36	Sampling	1
699-38-70B	568469.1	135331.0	95.6	20750.0	<1000	20.75	Sampling	1
699-38-70C	569084.1	135325.6	103.0	157500.0	77960.3	2.02	Sampling	1
699-40-62	571164.3	135764.4	117.2	128000.0	48407.9	2.64	Sampling	1
699-40-65	570057.5	135881.2	124.1	215000.0	132257.4	1.63	Sampling	1
699-43-69	568967.0	136488.5	99.2	31800.0	<1000	31.80	Sampling	1
699-44-64	570390.7	136897.4	119.2	61050.0	<1000	61.05	Sampling	1
699-45-69A	568729.3	137182.7	128.6	45550.0	18001.6	2.53	Sampling	1
699-45-69C	568947.1	137233.8	107.5	199666.7	42321.9	4.72	Sampling	1
699-47-60	571474.4	137968.7	117.0	40550.0	<1000	40.55	Sampling	1
699-48-71	568387.9	138056.9	128.4	363000.0	303516.4	1.20	Sampling	1
699-48-77C	566469.0	138086.8	114.5	562.6	<1000	0.56	Sampling	1
699-48-77D	566433.3	138119.3	133.9	2711.4	<1000	2.71	Sampling	1
699-49-79	565771.1	138271.1	134.2	46900.0	<1000	46.90	Sampling	1
699-50-74	567359.5	138646.7	127.2	7770.0	<1000	7.77	Sampling	1
699-50-85	564130.2	138669.3	66.4	22500.0	<1000	22.50	Sampling	1
699-51-63	570664.4	139148.4	121.6	24300.0	<1000	24.30	Sampling	1
699-51-75	566978.1	138906.3	83.0	4230.0	<1000	4.23	Sampling	1
699-55-60A	571563.5	140268.3	111.5	42700.0	<1000	42.70	Sampling	1
699-55-76	566723.4	140225.8	128.0	12400.0	<1000	12.40	Sampling	1
699-55-89	562886.6	140199.5	127.1	5800.0	<1000	5.80	Sampling	1
699-57-59	571830.2	140923.7	122.1	24100.0	<1000	24.10	Sampling	1

Table A-3. Nitrate Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-60-60	571588.6	141763.9	121.8	34800.0	<1000	34.80	Sampling	1
699-61-62	570914.9	141921.7	123.4	17400.0	<1000	17.40	Sampling	1
699-61-66	569787.6	142008.0	119.6	6370.0	<1000	6.37	Sampling	1
699-64-62	571055.8	142913.9	122.8	12600.0	<1000	12.60	Sampling	1
699-55-60A	571563.5	140268.3	111.5	42700.0	<1000	42.70	Sampling	1
699-55-76	566723.4	140225.8	128.0	12400.0	<1000	12.40	Sampling	1
699-55-89	562886.6	140199.5	127.1	5800.0	<1000	5.80	Sampling	1
699-57-59	571830.2	140923.7	122.1	24100.0	<1000	24.10	Sampling	1
699-60-60	571588.6	141763.9	121.8	34800.0	<1000	34.80	Sampling	1
699-61-62	570914.9	141921.7	123.4	17400.0	<1000	17.40	Sampling	1
699-61-66	569787.6	142008.0	119.6	6370.0	<1000	6.37	Sampling	1
699-64-62	571055.8	142913.9	122.8	12600.0	<1000	12.60	Sampling	1

* Value Type: indicates calculation method for Residual Ratio used in kriging:

Value Type 1 - For monitoring wells, the residual was calculated at each monitoring location as the ratio between the sample average measured value and the value calculated at the end of CY2014 from the simulated results detailed in ECF-200ZP1-16-0076, *Description of Groundwater Calculations and Assessments for the Calendar Year 2015 (CY 2015) 200 Areas Pump and Treat Report*;

Value Type 2 - For extraction wells, the residual was calculated at each extraction well as the ratio between the measured mass recovery during CY-2015 [calculated by multiplying the flow rate by the influent port concentration] and the simulated mass recovery (ECF-200ZP1-16-0076). Note: in case of simulated recovery rate equals to zero, residual ratio was calculated using Value Type 1.

Table A-4. Iodine Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-E11-1	571003.1	134505.3	105.1	0.8	<1	0.83	Characterization	1
299-E11-1	571003.1	134505.3	111.2	0.6	<1	0.59	Characterization	1
299-E11-1	571003.1	134505.3	117.3	1.3	<1	1.31	Characterization	1
299-E11-1	571003.1	134505.3	120.4	1.5	<1	1.53	Characterization	1
299-E20-1	570503.0	135199.8	112.1	0.6	<1	0.64	Characterization	1
299-E20-1	570503.0	135199.8	115.2	0.7	<1	0.70	Characterization	1
299-E20-1	570503.0	135199.8	118.4	0.7	<1	0.68	Characterization	1

Table A-4. Iodine Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-E20-2	570897.9	134895.8	109.8	0.8	<1	0.80	Characterization	1
299-E20-2	570897.9	134895.8	115.9	0.8	<1	0.82	Characterization	1
299-E20-2	570897.9	134895.8	119.0	0.9	<1	0.86	Characterization	1
299-W11-97	568317.6	135875.9	59.7	0.5	<1	0.47	Characterization	1
299-W11-97	568317.6	135875.9	65.9	0.4	<1	0.44	Characterization	1
299-W11-97	568317.6	135875.9	72.0	0.5	<1	0.50	Characterization	1
299-W11-97	568317.6	135875.9	78.4	0.7	<1	0.69	Characterization	1
299-W11-97	568317.6	135875.9	84.5	0.5	<1	0.53	Characterization	1
299-W11-97	568317.6	135875.9	90.2	0.6	<1	0.56	Characterization	1
299-W11-97	568317.6	135875.9	97.9	0.6	<1	0.63	Characterization	1
299-W11-97	568317.6	135875.9	102.8	0.8	<1	0.77	Characterization	1
299-W11-97	568317.6	135875.9	110.1	0.6	<1	0.64	Characterization	1
299-W11-97	568317.6	135875.9	115.0	0.4	<1	0.41	Characterization	1
299-W11-97	568317.6	135875.9	121.1	0.5	<1	0.50	Characterization	1
299-W13-2	568832.6	135819.4	66.6	0.6	<1	0.59	Characterization	1
299-W13-2	568832.6	135819.4	73.3	0.5	<1	0.50	Characterization	1
299-W13-2	568832.6	135819.4	79.8	0.6	<1	0.57	Characterization	1
299-W13-2	568832.6	135819.4	86.1	0.6	<1	0.58	Characterization	1
299-W13-2	568832.6	135819.4	93.0	0.5	<1	0.45	Characterization	1
299-W13-2	568832.6	135819.4	98.6	0.4	<1	0.41	Characterization	1
299-W13-2	568832.6	135819.4	105.6	0.5	<1	0.49	Characterization	1
299-W13-2	568832.6	135819.4	111.2	0.5	<1	0.54	Characterization	1
299-W13-2	568832.6	135819.4	117.3	0.6	<1	0.59	Characterization	1
299-W13-2	568832.6	135819.4	123.4	0.6	<1	0.57	Characterization	1
299-W15-228	565745.4	135711.5	49.0	0.3	<1	0.28	Characterization	1
299-W15-228	565745.4	135711.5	74.8	0.2	<1	0.20	Characterization	1
299-W15-228	565745.4	135711.5	80.8	0.3	<1	0.26	Characterization	1
299-W15-228	565745.4	135711.5	86.9	0.3	<1	0.26	Characterization	1
299-W15-228	565745.4	135711.5	93.0	0.3	<1	0.34	Characterization	1

Table A-4. Iodine Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W15-228	565745.4	135711.5	99.3	0.3	<1	0.28	Characterization	1
299-W15-228	565745.4	135711.5	105.1	0.3	<1	0.31	Characterization	1
299-W15-228	565745.4	135711.5	111.3	0.3	<1	0.33	Characterization	1
299-W15-228	565745.4	135711.5	117.5	0.3	<1	0.31	Characterization	1
299-W15-228	565745.4	135711.5	123.1	0.3	<1	0.34	Characterization	1
299-W15-228	565745.4	135711.5	129.8	0.3	<1	0.28	Characterization	1
299-W18-41	566045.1	135048.5	56.4	0.3	<1	0.34	Characterization	1
299-W18-41	566045.1	135048.5	74.8	0.3	<1	0.33	Characterization	1
299-W18-41	566045.1	135048.5	80.3	0.2	<1	0.24	Characterization	1
299-W18-41	566045.1	135048.5	86.5	0.3	<1	0.31	Characterization	1
299-W18-41	566045.1	135048.5	92.7	0.3	<1	0.26	Characterization	1
299-W18-41	566045.1	135048.5	98.8	0.2	<1	0.21	Characterization	1
299-W18-41	566045.1	135048.5	104.9	0.3	<1	0.27	Characterization	1
299-W18-41	566045.1	135048.5	110.7	0.3	<1	0.32	Characterization	1
299-W18-41	566045.1	135048.5	119.9	0.3	<1	0.30	Characterization	1
299-W18-41	566045.1	135048.5	126.3	0.3	<1	0.26	Characterization	1
299-W18-41	566045.1	135048.5	132.5	0.3	<1	0.32	Characterization	1
299-W19-111	567313.0	135547.0	87.9	0.6	<1	0.56	Characterization	1
299-W19-111	567313.0	135547.0	94.0	0.5	<1	0.51	Characterization	1
299-W19-111	567313.0	135547.0	100.1	0.5	<1	0.54	Characterization	1
299-W19-111	567313.0	135547.0	105.9	0.4	<1	0.44	Characterization	1
299-W19-111	567313.0	135547.0	112.1	0.5	<1	0.49	Characterization	1
299-W19-111	567313.0	135547.0	118.2	0.5	<1	0.47	Characterization	1
299-W19-111	567313.0	135547.0	124.2	0.4	<1	0.41	Characterization	1
299-W19-113	567689.6	135008.2	109.1	0.3	<1	0.26	Characterization	1
299-W19-113	567689.6	135008.2	115.2	0.4	<1	0.43	Characterization	1
299-W19-113	567689.6	135008.2	121.3	0.6	<1	0.62	Characterization	1
299-W19-113	567689.6	135008.2	126.9	0.5	<1	0.46	Characterization	1
299-W19-114	567901.9	135013.2	94.3	0.3	<1	0.30	Characterization	1

Table A-4. Iodine Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W19-114	567901.9	135013.2	103.4	0.3	<1	0.31	Characterization	1
299-W19-114	567901.9	135013.2	109.6	1.2	<1	1.15	Characterization	1
299-W19-114	567901.9	135013.2	115.8	0.4	<1	0.43	Characterization	1
299-W19-114	567901.9	135013.2	121.9	0.5	<1	0.46	Characterization	1
299-W19-114	567901.9	135013.2	126.3	0.4	<1	0.45	Characterization	1
299-W5-2	568175.4	137621.1	81.7	0.7	<1	0.73	Characterization	1
299-W5-2	568175.4	137621.1	87.5	0.8	<1	0.82	Characterization	1
299-W5-2	568175.4	137621.1	91.5	1.2	<1	1.23	Characterization	1
299-W5-2	568175.4	137621.1	93.7	1.1	<1	1.14	Characterization	1
299-W5-2	568175.4	137621.1	102.2	0.6	<1	0.58	Characterization	1
299-W5-2	568175.4	137621.1	108.8	0.7	<1	0.69	Characterization	1
299-W5-2	568175.4	137621.1	111.9	0.9	<1	0.87	Characterization	1
299-W5-2	568175.4	137621.1	119.3	1.4	<1	1.38	Characterization	1
299-W5-2	568175.4	137621.1	124.1	1.0	<1	1.00	Characterization	1
699-38-64	570189.6	135318.8	66.2	0.3	<1	0.26	Characterization	1
699-38-64	570189.6	135318.8	71.4	0.3	<1	0.27	Characterization	1
699-38-64	570189.6	135318.8	78.6	0.2	<1	0.22	Characterization	1
699-38-64	570189.6	135318.8	81.3	0.3	<1	0.33	Characterization	1
699-38-64	570189.6	135318.8	85.2	0.3	<1	0.28	Characterization	1
699-38-64	570189.6	135318.8	91.1	0.3	<1	0.29	Characterization	1
699-38-64	570189.6	135318.8	116.0	0.9	<1	0.89	Characterization	1
699-38-64	570189.6	135318.8	122.5	0.2	<1	0.23	Characterization	1
699-40-67	569420.3	135815.7	67.1	0.4	<1	0.35	Characterization	1
699-40-67	569420.3	135815.7	74.4	0.2	<1	0.23	Characterization	1
699-40-67	569420.3	135815.7	80.1	0.3	<1	0.25	Characterization	1
699-40-67	569420.3	135815.7	86.8	0.3	<1	0.26	Characterization	1
699-40-67	569420.3	135815.7	92.5	0.3	<1	0.27	Characterization	1
699-40-67	569420.3	135815.7	98.6	0.3	<1	0.28	Characterization	1
699-40-67	569420.3	135815.7	118.6	0.2	<1	0.20	Characterization	1

Table A-4. Iodine Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-40-67	569420.3	135815.7	124.1	0.3	<1	0.27	Characterization	1
699-46-68	569109.8	137600.9	83.7	0.3	<1	0.27	Characterization	1
699-46-68	569109.8	137600.9	91.6	0.4	<1	0.40	Characterization	1
699-46-68	569109.8	137600.9	98.6	0.3	<1	0.27	Characterization	1
699-46-68	569109.8	137600.9	105.7	0.2	<1	0.22	Characterization	1
699-46-68	569109.8	137600.9	124.8	0.2	<1	0.19	Characterization	1
699-49-69	568829.7	137966.5	87.2	0.3	<1	0.35	Characterization	1
699-49-69	568829.7	137966.5	93.5	0.4	<1	0.37	Characterization	1
699-49-69	568829.7	137966.5	99.6	0.4	<1	0.40	Characterization	1
699-49-69	568829.7	137966.5	105.7	0.3	<1	0.33	Characterization	1
699-49-69	568829.7	137966.5	110.5	0.3	<1	0.27	Characterization	1
699-49-69	568829.7	137966.5	118.0	0.4	<1	0.37	Characterization	1
699-49-69	568829.7	137966.5	123.9	0.3	<1	0.31	Characterization	1
299-W11-49	567361.5	135924.7	0.3	0.0	<1	0.35	Pumping Well	1
299-W11-50	566966.3	136756.6	106.1	0.0	<1	139.05	Pumping Well	2
299-W11-90	567306.8	136519.7	99.3	0.0	<1	134.38	Pumping Well	2
299-W11-92	566692.9	136351.8	106.3	0.0	<1	59.87	Pumping Well	2
299-W11-96	567774.8	136772.2	104.9	0.0	<1	48.99	Pumping Well	2
299-W12-2	568312.7	136610.3	100.2	0.5	<1	0.46	Pumping Well	1
299-W12-3	568321.5	136998.1	103.0	0.6	<1	0.59	Pumping Well	1
299-W12-4	568327.4	136363.7	92.7	0.3	<1	0.34	Pumping Well	1
299-W14-20	566909.2	136284.5	105.3	0.0	<1	0.68	Pumping Well	2
299-W14-21	567721.5	135890.0	93.6	0.3	<1	0.32	Pumping Well	1
299-W14-22	568324.9	136116.5	97.3	0.5	<1	0.49	Pumping Well	1
299-W14-73	567359.0	136204.6	97.5	0.0	<1	777.23	Pumping Well	2
299-W14-74	567781.5	136381.3	98.8	0.5	<1	0.47	Pumping Well	1
299-W15-225	566657.4	136108.9	105.8	0.0	<1	765.56	Pumping Well	2
299-W17-2	566951.6	135806.2	110.0	0.4	<1	0.35	Pumping Well	1
299-W17-3	566925.9	135325.0	106.3	0.3	<1	0.34	Pumping Well	1

Table A-4. Iodine Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W22-90	566961.4	134483.2	125.4	0.0	<1	0.33	Pumping Well	2
299-W22-91	566911.8	134134.5	123.6	0.0	<1	0.44	Pumping Well	2
299-W22-92	567167.8	134029.8	125.5	0.0	<1	9.73	Pumping Well	2
299-W5-1	568329.6	137321.5	105.7	0.5	<1	0.54	Pumping Well	1
299-W10-1	566663.1	136734.6	132.2	0.2	<1	0.24	Sampling	1
299-W10-14	566017.2	136608.9	80.4	0.2	<1	0.19	Sampling	1
299-W10-27	566844.0	136441.8	130.1	0.3	<1	0.28	Sampling	1
299-W10-29	566083.0	136828.7	131.6	0.4	<1	0.39	Sampling	1
299-W10-30	566082.8	136739.3	131.7	0.7	<1	0.68	Sampling	1
299-W10-31	566266.4	136968.3	131.2	0.4	<1	0.35	Sampling	1
299-W10-33	566772.8	136610.2	83.3	0.9	<1	0.85	Sampling	1
299-W11-13	567099.4	136424.0	106.8	0.3	<1	0.33	Sampling	1
299-W11-18	567181.9	137161.5	132.0	1.3	<1	1.28	Sampling	1
299-W11-43	567269.7	136971.0	85.0	0.5	<1	0.51	Sampling	1
299-W11-45	566992.8	136775.6	124.9	0.4	<1	0.40	Sampling	1
299-W11-47	566933.8	136680.7	121.4	0.9	<1	0.94	Sampling	1
299-W11-48	566882.0	136846.2	110.6	0.3	<1	0.29	Sampling	1
299-W11-87	568141.1	136608.7	104.2	1.1	<1	1.07	Sampling	1
299-W11-88	567874.7	137113.1	79.4	0.2	<1	0.22	Sampling	1
299-W13-1	568148.7	136048.6	98.3	0.2	<1	0.19	Sampling	1
299-W14-11	566901.7	136287.6	123.1	1.0	<1	1.00	Sampling	1
299-W14-13	566901.7	136282.4	128.4	0.5	<1	0.53	Sampling	1
299-W14-14	566898.4	136181.0	129.5	0.8	<1	0.75	Sampling	1
299-W14-72	567328.4	135941.3	87.2	0.3	<1	0.29	Sampling	1
299-W15-11	566412.3	136000.7	134.2	0.5	<1	0.51	Sampling	1
299-W15-152	566309.4	135550.0	132.1	0.3	<1	0.28	Sampling	1
299-W15-17	566306.9	135719.0	78.9	0.3	<1	0.33	Sampling	1
299-W15-224	566307.9	135926.1	131.2	0.3	<1	0.29	Sampling	1
299-W15-30	566304.6	135748.9	134.2	0.5	<1	0.55	Sampling	1

Table A-4. Iodine Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W15-33	566433.3	135966.7	133.1	0.3	<1	0.29	Sampling	1
299-W15-37	566716.5	135248.3	132.7	0.2	<1	0.15	Sampling	1
299-W15-42	566581.8	135627.0	129.4	0.2	<1	0.16	Sampling	1
299-W15-46	566752.2	135586.7	127.4	0.2	<1	0.19	Sampling	1
299-W15-49	566307.2	135972.9	131.2	0.7	<1	0.69	Sampling	1
299-W15-50	566793.5	135790.7	123.0	0.2	<1	0.15	Sampling	1
299-W15-7	566675.9	135920.2	122.3	0.9	<1	0.85	Sampling	1
299-W15-763	566809.2	136028.8	130.2	0.3	<1	0.27	Sampling	1
299-W15-765	566697.0	136373.1	130.2	0.9	<1	0.88	Sampling	1
299-W15-83	566304.5	135826.2	132.0	0.3	<1	0.29	Sampling	1
299-W15-94	566307.6	135640.3	132.1	0.6	<1	0.61	Sampling	1
299-W18-1	566421.5	135465.2	113.8	0.4	<1	0.37	Sampling	1
299-W18-16	566605.1	135425.7	131.1	0.3	<1	0.25	Sampling	1
299-W18-21	566097.7	134978.7	135.3	0.1	<1	0.14	Sampling	1
299-W18-22	566088.6	134990.2	72.6	0.3	<1	0.27	Sampling	1
299-W19-101	567939.1	135014.1	128.7	0.9	<1	0.87	Sampling	1
299-W19-105	567565.2	134745.4	129.8	0.6	<1	0.57	Sampling	1
299-W19-107	567997.9	135205.7	119.7	0.8	<1	0.82	Sampling	1
299-W19-18	567360.6	135012.4	124.8	1.5	<1	1.53	Sampling	1
299-W19-34A	567673.6	135012.2	113.3	0.6	<1	0.61	Sampling	1
299-W19-35	567992.1	135015.2	130.4	0.8	<1	0.81	Sampling	1
299-W19-36	567634.7	135017.1	130.4	1.6	<1	1.59	Sampling	1
299-W19-39	567901.7	134886.7	131.5	0.8	<1	0.85	Sampling	1
299-W19-4	567949.9	135350.8	98.3	0.3	<1	0.28	Sampling	1
299-W19-43	567699.2	135004.0	130.5	1.1	<1	1.12	Sampling	1
299-W19-46	567782.7	134842.5	130.3	0.7	<1	0.68	Sampling	1
299-W19-47	566895.3	135161.9	131.0	0.2	<1	0.19	Sampling	1
299-W19-48	567822.9	134926.0	126.9	0.9	<1	0.93	Sampling	1
299-W19-49	567568.0	134894.4	129.0	2.1	<1	2.05	Sampling	1

Table A-4. Iodine Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W19-6	567133.3	134693.8	89.8	0.1	<1	0.14	Sampling	1
299-W21-2	568124.4	134573.8	129.5	2.7	2.1	1.30	Sampling	1
299-W22-113	566904.6	134193.0	128.2	0.4	<1	0.42	Sampling	1
299-W22-24P	567648.2	134410.9	44.0	1.4	<1	1.39	Sampling	1
299-W22-45	566945.2	134292.5	131.8	0.3	<1	0.26	Sampling	1
299-W22-47	566908.7	134076.3	130.5	0.7	<1	0.70	Sampling	1
299-W22-49	566904.4	134201.6	131.8	0.5	<1	0.52	Sampling	1
299-W22-69	567179.6	134347.8	129.4	0.3	<1	0.33	Sampling	1
299-W22-72	567237.4	134207.1	129.8	1.2	<1	1.25	Sampling	1
299-W22-83	567009.1	134092.5	132.0	0.5	<1	0.51	Sampling	1
299-W22-86	567186.7	134041.3	129.8	0.8	<1	0.77	Sampling	1
299-W22-87	567541.8	134539.9	129.7	0.3	<1	0.27	Sampling	1
299-W22-88	568046.5	134390.5	128.2	4.0	4.1	0.98	Sampling	1
299-W22-95	567170.5	134549.1	126.0	0.3	<1	0.32	Sampling	1
299-W22-96	567351.9	134145.6	129.2	3.9	2.0	1.91	Sampling	1
299-W23-19	566759.1	134166.7	137.9	1.6	<1	1.60	Sampling	1
299-W23-20	566717.7	134446.2	132.1	0.4	<1	0.41	Sampling	1
299-W23-21	566707.7	134294.0	132.1	0.4	<1	0.45	Sampling	1
299-W26-13	566424.4	133293.6	132.1	0.3	<1	0.35	Sampling	1
299-W26-14	566682.7	133539.2	131.3	0.2	<1	0.20	Sampling	1
299-W6-3	567118.2	137299.1	87.0	0.2	<1	0.16	Sampling	1
299-W6-6	567318.7	137638.7	87.3	0.5	<1	0.51	Sampling	1
299-W7-3	566292.0	137638.6	66.4	0.3	<1	0.30	Sampling	1
699-30-66	569991.0	132739.2	90.8	0.3	<1	0.32	Sampling	1
699-32-62	571009.6	133215.9	113.2	0.4	<1	0.43	Sampling	1
699-32-72A	567942.7	133362.6	62.2	1.3	<1	1.29	Sampling	1
699-32-76	566683.9	133137.7	129.4	0.4	<1	0.36	Sampling	1
699-33-74	567472.7	133552.2	129.0	0.5	<1	0.49	Sampling	1
699-33-75	566907.8	133662.5	129.6	0.6	<1	0.64	Sampling	1

Table A-4. Iodine Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-33-76	566621.2	133600.4	130.2	0.3	<1	0.26	Sampling	1
699-34-61	571395.9	133809.9	125.4	0.5	<1	0.51	Sampling	1
699-34-72	567860.0	133785.3	128.4	2.7	2.9	0.95	Sampling	1
699-35-66A	569857.9	134099.2	119.6	2.5	3.9	0.63	Sampling	1
699-35-78A	566063.6	134271.3	134.0	0.2	<1	0.16	Sampling	1
699-36-61A	571395.5	134557.1	119.5	0.3	<1	0.26	Sampling	1
699-36-66B	569731.3	134469.0	125.5	4.8	3.6	1.33	Sampling	1
699-36-70A	568466.7	134308.8	130.2	6.0	3.0	2.03	Sampling	1
699-36-70B	568427.8	134626.0	128.6	2.8	1.5	1.86	Sampling	1
699-37-66	569730.3	134797.2	125.2	1.2	1.3	0.94	Sampling	1
699-38-61	571219.1	134997.3	122.4	0.5	<1	0.49	Sampling	1
699-38-65	570090.2	135039.8	117.9	1.2	<1	1.20	Sampling	1
699-38-68A	569180.3	134931.6	129.7	1.1	<1	1.05	Sampling	1
699-38-70B	568469.1	135331.0	95.6	0.7	<1	0.65	Sampling	1
699-38-70C	569084.1	135325.6	103.0	0.9	<1	0.88	Sampling	1
699-40-62	571164.3	135764.4	117.2	0.3	<1	0.33	Sampling	1
699-40-65	570057.5	135881.2	124.1	0.6	<1	0.58	Sampling	1
699-43-69	568967.0	136488.5	99.2	0.6	<1	0.59	Sampling	1
699-44-64	570390.7	136897.4	119.2	0.3	<1	0.26	Sampling	1
699-45-69A	568729.3	137182.7	128.6	0.5	<1	0.54	Sampling	1
699-45-69C	568947.1	137233.8	107.5	0.4	<1	0.37	Sampling	1
699-47-60	571474.4	137968.7	117.0	0.7	<1	0.71	Sampling	1
699-48-71	568387.9	138056.9	128.4	0.3	<1	0.30	Sampling	1
699-49-100C	559303.7	138503.2	134.3	0.6	<1	0.57	Sampling	1
699-50-59	571946.9	138741.7	121.6	2.0	<1	1.98	Sampling	1
699-50-74	567359.5	138646.7	127.2	0.3	<1	0.32	Sampling	1
699-51-63	570664.4	139148.4	121.6	0.3	<1	0.26	Sampling	1

Table A-4. Iodine Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*

* Value Type: indicates calculation method for Residual Ratio used in kriging:

Value Type 1 - For monitoring wells, the residual was calculated at each monitoring location as the ratio between the sample average measured value and the value calculated at the end of CY2014 from the simulated results detailed in ECF-200ZP1-16-0076, *Description of Groundwater Calculations and Assessments for the Calendar Year 2015 (CY 2015) 200 Areas Pump and Treat Report*;

Value Type 2 - For extraction wells, the residual was calculated at each extraction well as the ratio between the measured mass recovery during CY-2015 [calculated by multiplying the flow rate by the influent port concentration] and the simulated mass recovery (ECF-200ZP1-16-0076). Note: in case of simulated recovery rate equals to zero, residual ratio was calculated using Value Type 1.

Table A-5. Technetium-99 Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-E11-1	571003.1	134505.3	105.1	11.5	<1	11.50	Characterization	1
299-E11-1	571003.1	134505.3	111.2	9.4	<1	9.42	Characterization	1
299-E11-1	571003.1	134505.3	117.3	14.4	<1	14.40	Characterization	1
299-E11-1	571003.1	134505.3	120.4	12.2	<1	12.20	Characterization	1
299-E20-1	570503.0	135199.8	112.1	45.9	<1	45.90	Characterization	1
299-E20-1	570503.0	135199.8	115.2	56.4	<1	56.40	Characterization	1
299-E20-1	570503.0	135199.8	118.4	33.7	<1	33.70	Characterization	1
299-E20-2	570897.9	134895.8	109.8	20.8	<1	20.80	Characterization	1
299-E20-2	570897.9	134895.8	115.9	9.9	<1	9.93	Characterization	1
299-E20-2	570897.9	134895.8	119.0	13.0	<1	13.00	Characterization	1
299-W11-97	568317.6	135875.9	59.7	8.9	<1	8.86	Characterization	1
299-W11-97	568317.6	135875.9	65.9	9.3	<1	9.28	Characterization	1
299-W11-97	568317.6	135875.9	72.0	9.5	<1	9.48	Characterization	1
299-W11-97	568317.6	135875.9	78.4	9.5	<1	9.51	Characterization	1
299-W11-97	568317.6	135875.9	84.5	9.1	<1	9.06	Characterization	1
299-W11-97	568317.6	135875.9	90.2	9.0	<1	9.01	Characterization	1
299-W11-97	568317.6	135875.9	97.9	9.3	<1	9.30	Characterization	1
299-W11-97	568317.6	135875.9	102.8	9.5	<1	9.51	Characterization	1
299-W11-97	568317.6	135875.9	110.1	9.5	<1	9.46	Characterization	1

Table A-5. Technetium-99 Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W11-97	568317.6	135875.9	115.0	9.7	<1	9.67	Characterization	1
299-W11-97	568317.6	135875.9	121.1	9.9	<1	9.85	Characterization	1
299-W13-2	568832.6	135819.4	66.6	9.4	<1	9.40	Characterization	1
299-W13-2	568832.6	135819.4	73.3	9.3	<1	9.33	Characterization	1
299-W13-2	568832.6	135819.4	79.8	9.2	<1	9.20	Characterization	1
299-W13-2	568832.6	135819.4	86.1	9.4	<1	9.36	Characterization	1
299-W13-2	568832.6	135819.4	93.0	9.6	<1	9.62	Characterization	1
299-W13-2	568832.6	135819.4	98.6	9.4	<1	9.35	Characterization	1
299-W13-2	568832.6	135819.4	105.6	9.1	<1	9.08	Characterization	1
299-W13-2	568832.6	135819.4	111.2	9.3	<1	9.34	Characterization	1
299-W13-2	568832.6	135819.4	117.3	9.5	<1	9.50	Characterization	1
299-W13-2	568832.6	135819.4	123.4	9.4	<1	9.35	Characterization	1
299-W15-228	565745.4	135711.5	49.0	5.7	<1	5.72	Characterization	1
299-W15-228	565745.4	135711.5	74.8	0.0	<1	0.00	Characterization	1
299-W15-228	565745.4	135711.5	80.8	0.0	<1	0.00	Characterization	1
299-W15-228	565745.4	135711.5	86.9	0.0	<1	0.00	Characterization	1
299-W15-228	565745.4	135711.5	93.0	34.2	<1	34.20	Characterization	1
299-W15-228	565745.4	135711.5	99.3	137.0	<1	137.00	Characterization	1
299-W15-228	565745.4	135711.5	105.1	137.0	<1	137.00	Characterization	1
299-W15-228	565745.4	135711.5	111.3	34.2	<1	34.20	Characterization	1
299-W15-228	565745.4	135711.5	117.5	85.5	<1	85.50	Characterization	1
299-W15-228	565745.4	135711.5	123.1	171.0	<1	171.00	Characterization	1
299-W15-228	565745.4	135711.5	129.8	137.0	<1	137.00	Characterization	1
299-W18-260	566862.5	135196.9	106.9	10.2	<1	10.20	Characterization	1
299-W18-260	566862.5	135196.9	112.9	28.1	<1	28.10	Characterization	1
299-W18-260	566862.5	135196.9	118.8	43.5	<1	43.50	Characterization	1
299-W18-260	566862.5	135196.9	125.0	1060.0	<1	1060.00	Characterization	1
299-W18-260	566862.5	135196.9	130.4	1340.0	<1	1340.00	Characterization	1
299-W18-41	566045.1	135048.5	56.4	9.3	<1	9.31	Characterization	1

Table A-5. Technetium-99 Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W18-41	566045.1	135048.5	74.8	61.9	<1	61.90	Characterization	1
299-W18-41	566045.1	135048.5	80.3	55.9	<1	55.90	Characterization	1
299-W18-41	566045.1	135048.5	86.5	38.6	<1	38.60	Characterization	1
299-W18-41	566045.1	135048.5	92.7	46.5	1.5	30.89	Characterization	1
299-W18-41	566045.1	135048.5	98.8	43.5	1.5	28.89	Characterization	1
299-W18-41	566045.1	135048.5	104.9	85.3	1.9	45.03	Characterization	1
299-W18-41	566045.1	135048.5	110.7	30.3	3.5	8.74	Characterization	1
299-W18-41	566045.1	135048.5	119.9	112.0	3.5	32.32	Characterization	1
299-W18-41	566045.1	135048.5	126.3	53.1	3.8	14.14	Characterization	1
299-W18-41	566045.1	135048.5	132.5	47.0	4.6	10.23	Characterization	1
299-W19-111	567313.0	135547.0	87.9	9.1	<1	9.08	Characterization	1
299-W19-111	567313.0	135547.0	94.0	9.6	<1	9.63	Characterization	1
299-W19-111	567313.0	135547.0	100.1	10.5	<1	10.50	Characterization	1
299-W19-111	567313.0	135547.0	105.9	12.9	1.7	7.53	Characterization	1
299-W19-111	567313.0	135547.0	112.1	9.3	8.1	1.16	Characterization	1
299-W19-111	567313.0	135547.0	118.2	8.8	24.7	0.36	Characterization	1
299-W19-111	567313.0	135547.0	124.2	9.0	23.8	0.38	Characterization	1
299-W19-113	567689.6	135008.2	109.1	306.5	198.6	1.54	Characterization	1
299-W19-113	567689.6	135008.2	115.2	53.5	724.8	0.07	Characterization	1
299-W19-113	567689.6	135008.2	121.3	971.0	1721.6	0.56	Characterization	1
299-W19-113	567689.6	135008.2	126.9	4785.0	1721.6	2.78	Characterization	1
299-W19-114	567901.9	135013.2	94.3	206.5	<1	206.50	Characterization	1
299-W19-114	567901.9	135013.2	103.4	1275.0	3.5	360.29	Characterization	1
299-W19-114	567901.9	135013.2	109.6	5180.0	13.2	393.77	Characterization	1
299-W19-114	567901.9	135013.2	115.8	3045.0	43.2	70.52	Characterization	1
299-W19-114	567901.9	135013.2	121.9	4645.0	103.6	44.83	Characterization	1
299-W19-114	567901.9	135013.2	126.3	105.5	103.6	1.02	Characterization	1
299-W23-236	566798.7	134128.2	126.0	10.2	3945.0	0.00	Characterization	1
299-W23-236	566798.7	134128.2	136.0	9.9	1899.1	0.01	Characterization	1

Table A-5. Technetium-99 Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W5-2	568175.4	137621.1	81.7	481.0	<1	481.00	Characterization	1
299-W5-2	568175.4	137621.1	87.5	530.0	<1	530.00	Characterization	1
299-W5-2	568175.4	137621.1	91.5	41.9	<1	41.90	Characterization	1
299-W5-2	568175.4	137621.1	93.7	568.0	<1	568.00	Characterization	1
299-W5-2	568175.4	137621.1	102.2	54.5	<1	54.50	Characterization	1
299-W5-2	568175.4	137621.1	108.8	603.0	<1	603.00	Characterization	1
299-W5-2	568175.4	137621.1	111.9	336.0	<1	336.00	Characterization	1
299-W5-2	568175.4	137621.1	119.3	412.0	<1	412.00	Characterization	1
299-W5-2	568175.4	137621.1	124.1	645.0	<1	645.00	Characterization	1
699-38-64	570189.6	135318.8	66.2	13.8	<1	13.80	Characterization	1
699-38-64	570189.6	135318.8	71.4	17.4	<1	17.40	Characterization	1
699-38-64	570189.6	135318.8	78.6	9.6	<1	9.56	Characterization	1
699-38-64	570189.6	135318.8	81.3	21.4	<1	21.40	Characterization	1
699-38-64	570189.6	135318.8	85.2	19.7	<1	19.70	Characterization	1
699-38-64	570189.6	135318.8	91.1	21.2	<1	21.20	Characterization	1
699-38-64	570189.6	135318.8	116.0	177.0	<1	177.00	Characterization	1
699-38-64	570189.6	135318.8	122.5	208.0	<1	208.00	Characterization	1
699-40-67	569420.3	135815.7	67.1	17.1	2.9	5.88	Characterization	1
699-40-67	569420.3	135815.7	74.4	17.1	2.9	5.88	Characterization	1
699-40-67	569420.3	135815.7	80.1	34.2	2.9	11.76	Characterization	1
699-40-67	569420.3	135815.7	86.8	34.2	2.8	12.30	Characterization	1
699-40-67	569420.3	135815.7	92.5	0.0	2.1	0.00	Characterization	1
699-40-67	569420.3	135815.7	98.6	17.1	1.3	12.96	Characterization	1
699-40-67	569420.3	135815.7	118.6	222.0	<1	222.00	Characterization	1
699-40-67	569420.3	135815.7	124.1	291.0	<1	291.00	Characterization	1
699-46-68	569109.8	137600.9	83.7	171.0	<1	171.00	Characterization	1
699-46-68	569109.8	137600.9	91.6	171.0	<1	171.00	Characterization	1
699-46-68	569109.8	137600.9	98.6	188.0	<1	188.00	Characterization	1
699-46-68	569109.8	137600.9	105.7	282.5	<1	282.50	Characterization	1

Table A-5. Technetium-99 Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-46-68	569109.8	137600.9	124.8	0.0	5.1	0.00	Characterization	1
699-49-69	568829.7	137966.5	87.2	88.5	<1	88.50	Characterization	1
699-49-69	568829.7	137966.5	93.5	101.0	<1	101.00	Characterization	1
699-49-69	568829.7	137966.5	99.6	141.0	<1	141.00	Characterization	1
699-49-69	568829.7	137966.5	105.7	130.0	<1	130.00	Characterization	1
699-49-69	568829.7	137966.5	110.5	133.0	2.1	64.57	Characterization	1
699-49-69	568829.7	137966.5	118.0	128.0	2.1	62.20	Characterization	1
699-49-69	568829.7	137966.5	123.9	109.0	2.1	51.40	Characterization	1
299-W11-49	567361.5	135924.7	112.4	0.0	0.0	11.98	Pumping Well	2
299-W11-50	566966.3	136756.6	106.1	0.2	0.0	6.89	Pumping Well	2
299-W11-90	567306.8	136519.7	99.3	0.1	0.0	0.87	Pumping Well	2
299-W11-92	566692.9	136351.8	106.3	0.0	0.0	1.17	Pumping Well	2
299-W11-96	567774.8	136772.2	104.9	0.1	0.0	297.00	Pumping Well	2
299-W12-2	568312.7	136610.3	100.2	42.2	<1	42.24	Pumping Well	1
299-W12-3	568321.5	136998.1	103.0	251.7	<1	251.67	Pumping Well	1
299-W12-4	568327.4	136363.7	92.7	9.5	<1	9.48	Pumping Well	1
299-W14-20	566909.2	136284.5	105.3	0.5	0.1	4.55	Pumping Well	2
299-W14-21	567721.5	135890.0	93.6	0.0	0.0	15.03	Pumping Well	2
299-W14-22	568324.9	136116.5	97.3	9.4	<1	9.44	Pumping Well	1
299-W14-73	567359.0	136204.6	97.5	0.0	0.0	0.88	Pumping Well	2
299-W14-74	567781.5	136381.3	98.8	107.2	<1	695.63	Pumping Well	1
299-W15-225	566657.4	136108.9	105.8	0.0	0.0	20.07	Pumping Well	2
299-W17-2	566951.6	135806.2	110.0	77.0	<1	76.98	Pumping Well	1
299-W17-3	566925.9	135325.0	106.3	0.0	0.0	667.17	Pumping Well	2
299-W22-90	566961.4	134483.2	125.4	0.0	0.1	0.41	Pumping Well	2
299-W22-91	566911.8	134134.5	123.6	0.3	0.2	1.01	Pumping Well	2
299-W22-92	567167.8	134029.8	125.5	0.2	0.2	1.02	Pumping Well	2
299-W5-1	568329.6	137321.5	105.7	347.7	<1	347.67	Pumping Well	1
299-W10-1	566663.1	136734.6	132.2	30.1	5.8	5.16	Sampling	1

Table A-5. Technetium-99 Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W10-14	566017.2	136608.9	80.4	9.8	5.4	1.81	Sampling	1
299-W10-27	566844.0	136441.8	130.1	99.6	240.9	0.41	Sampling	1
299-W10-29	566083.0	136828.7	131.6	9.2	<1	9.22	Sampling	1
299-W10-30	566082.8	136739.3	131.7	8.7	<1	8.74	Sampling	1
299-W10-31	566266.4	136968.3	131.2	9.8	<1	9.80	Sampling	1
299-W10-33	566772.8	136610.2	83.3	9.5	1.4	6.96	Sampling	1
299-W11-13	567099.4	136424.0	106.8	403.0	190.4	2.12	Sampling	1
299-W11-18	567181.9	137161.5	132.0	58.7	<1	58.70	Sampling	1
299-W11-43	567269.7	136971.0	85.0	144.5	<1	144.50	Sampling	1
299-W11-45	566992.8	136775.6	124.9	151.7	518.0	0.29	Sampling	1
299-W11-47	566933.8	136680.7	121.4	11950.0	1524.1	7.84	Sampling	1
299-W11-48	566882.0	136846.2	110.6	130.0	34.9	3.73	Sampling	1
299-W11-87	568141.1	136608.7	104.2	47.2	<1	47.20	Sampling	1
299-W11-88	567874.7	137113.1	79.4	9.5	<1	9.50	Sampling	1
299-W13-1	568148.7	136048.6	98.3	9.4	<1	9.39	Sampling	1
299-W14-11	566901.7	136287.6	123.1	17300.0	554.3	31.21	Sampling	1
299-W14-13	566901.7	136282.4	128.4	16784.0	159.7	105.09	Sampling	1
299-W14-14	566898.4	136181.0	129.5	315.5	72.5	4.35	Sampling	1
299-W14-72	567328.4	135941.3	87.2	24.7	<1	24.70	Sampling	1
299-W15-11	566412.3	136000.7	134.2	193.0	<1	193.00	Sampling	1
299-W15-152	566309.4	135550.0	132.1	201.0	1.2	162.91	Sampling	1
299-W15-17	566306.9	135719.0	78.9	8.4	<1	8.39	Sampling	1
299-W15-224	566307.9	135926.1	131.2	158.4	<1	158.44	Sampling	1
299-W15-30	566304.6	135748.9	134.2	182.3	<1	182.25	Sampling	1
299-W15-33	566433.3	135966.7	133.1	185.5	<1	185.50	Sampling	1
299-W15-37	566716.5	135248.3	132.7	84.5	<1	84.50	Sampling	1
299-W15-42	566581.8	135627.0	129.4	77.8	<1	77.75	Sampling	1
299-W15-46	566752.2	135586.7	127.4	178.0	<1	178.00	Sampling	1
299-W15-49	566307.2	135972.9	131.2	116.0	<1	116.00	Sampling	1

Table A-5. Technetium-99 Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W15-50	566793.5	135790.7	123.0	131.0	<1	131.00	Sampling	1
299-W15-7	566675.9	135920.2	122.3	142.0	<1	142.00	Sampling	1
299-W15-763	566809.2	136028.8	130.2	111.7	2.5	45.08	Sampling	1
299-W15-765	566697.0	136373.1	130.2	26.1	8.4	3.10	Sampling	1
299-W15-83	566304.5	135826.2	132.0	178.5	<1	178.50	Sampling	1
299-W15-94	566307.6	135640.3	132.1	188.8	<1	188.80	Sampling	1
299-W18-1	566421.5	135465.2	113.8	121.5	<1	121.50	Sampling	1
299-W18-16	566605.1	135425.7	131.1	242.0	<1	242.00	Sampling	1
299-W18-21	566097.7	134978.7	135.3	63.2	2.0	30.88	Sampling	1
299-W18-22	566088.6	134990.2	72.6	8.7	<1	8.69	Sampling	1
299-W18-40	566723.3	134996.4	130.9	103.0	<1	103.00	Sampling	1
299-W19-101	567939.1	135014.1	128.7	167.0	67.6	2.47	Sampling	1
299-W19-105	567565.2	134745.4	129.8	18.9	4.7	4.04	Sampling	1
299-W19-107	567997.9	135205.7	119.7	273.0	10.5	25.96	Sampling	1
299-W19-12	566897.1	135059.4	131.8	1217.5	<1	1217.50	Sampling	1
299-W19-18	567360.6	135012.4	124.8	580.0	1122.0	0.52	Sampling	1
299-W19-34A	567673.6	135012.2	113.3	483.0	604.8	0.80	Sampling	1
299-W19-35	567992.1	135015.2	130.4	270.0	18.4	14.71	Sampling	1
299-W19-36	567634.7	135017.1	130.4	68950.0	1598.8	43.13	Sampling	1
299-W19-39	567901.7	134886.7	131.5	132.3	<1	132.25	Sampling	1
299-W19-4	567949.9	135350.8	98.3	11.3	<1	11.30	Sampling	1
299-W19-41	566896.5	135004.5	131.9	85.0	<1	85.00	Sampling	1
299-W19-42	566896.8	135122.9	131.9	1254.0	<1	1254.00	Sampling	1
299-W19-43	567699.2	135004.0	130.5	6832.5	1214.6	5.63	Sampling	1
299-W19-44	566897.0	135042.0	131.1	458.5	<1	458.50	Sampling	1
299-W19-45	566897.7	135087.7	132.0	5540.0	<1	5540.00	Sampling	1
299-W19-46	567782.7	134842.5	130.3	97.6	<1	97.58	Sampling	1
299-W19-47	566895.3	135161.9	131.0	1922.0	<1	1922.00	Sampling	1
299-W19-48	567822.9	134926.0	126.9	139.6	110.0	1.27	Sampling	1

Table A-5. Technetium-99 Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W19-49	567568.0	134894.4	129.0	312.2	43.6	7.17	Sampling	1
299-W19-6	567133.3	134693.8	89.8	5.9	8.7	0.67	Sampling	1
299-W21-2	568124.4	134573.8	129.5	114.0	<1	114.00	Sampling	1
299-W22-113	566904.6	134193.0	128.2	375.3	4528.8	0.08	Sampling	1
299-W22-115	566939.4	134292.4	127.9	954.0	4281.1	0.22	Sampling	1
299-W22-116	566900.5	134139.9	127.2	10000.0	3464.1	2.89	Sampling	1
299-W22-45	566945.2	134292.5	131.8	2073.3	3229.9	0.64	Sampling	1
299-W22-47	566908.7	134076.3	130.5	280.2	2089.4	0.13	Sampling	1
299-W22-49	566904.4	134201.6	131.8	1050.0	3328.7	0.32	Sampling	1
299-W22-50	566904.2	134139.7	132.0	7800.0	2545.4	3.06	Sampling	1
299-W22-69	567179.6	134347.8	129.4	105.5	2131.3	0.05	Sampling	1
299-W22-72	567237.4	134207.1	129.8	227.0	2611.8	0.09	Sampling	1
299-W22-80	566842.9	134125.6	132.1	9.4	2319.6	0.00	Sampling	1
299-W22-81	567000.3	134354.2	131.5	70.3	2382.7	0.03	Sampling	1
299-W22-82	567004.7	134167.1	131.9	3930.0	4408.4	0.89	Sampling	1
299-W22-83	567009.1	134092.5	132.0	10802.9	4068.0	2.66	Sampling	1
299-W22-84	566978.8	134547.6	131.7	33.4	491.6	0.07	Sampling	1
299-W22-85	566902.9	134260.6	132.2	176.0	3113.6	0.06	Sampling	1
299-W22-86	567186.7	134041.3	129.8	2922.5	3742.3	0.78	Sampling	1
299-W22-87	567541.8	134539.9	129.7	81.7	49.5	1.65	Sampling	1
299-W22-88	568046.5	134390.5	128.2	10.0	<1	10.00	Sampling	1
299-W22-89	566906.8	134031.7	129.8	10.2	1656.0	0.01	Sampling	1
299-W22-93	566949.1	134486.0	127.0	1850.0	1475.3	1.25	Sampling	1
299-W22-94	567009.8	134429.8	127.8	95.1	1854.2	0.05	Sampling	1
299-W22-95	567170.5	134549.1	126.0	522.4	1263.5	0.41	Sampling	1
299-W22-96	567351.9	134145.6	129.2	1455.0	2489.4	0.58	Sampling	1
299-W23-15	566794.0	134127.2	132.4	19.4	2629.2	0.01	Sampling	1
299-W23-19	566759.1	134166.7	137.9	17458.3	1465.5	11.91	Sampling	1
299-W23-20	566717.7	134446.2	132.1	14.9	407.0	0.04	Sampling	1

Table A-5. Technetium-99 Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W23-21	566707.7	134294.0	132.1	90.2	1438.6	0.06	Sampling	1
299-W26-14	566682.7	133539.2	131.3	9.1	<1	9.13	Sampling	1
299-W6-3	567118.2	137299.1	87.0	56.4	2.6	21.92	Sampling	1
299-W6-6	567318.7	137638.7	87.3	65.4	4.0	16.37	Sampling	1
299-W7-3	566292.0	137638.6	66.4	7.7	<1	7.67	Sampling	1
699-33-74	567472.7	133552.2	129.0	243.5	23.6	10.31	Sampling	1
699-34-72	567860.0	133785.3	128.4	204.0	5.9	34.41	Sampling	1
699-35-66A	569857.9	134099.2	119.6	120.3	<1	120.25	Sampling	1
699-35-78A	566063.6	134271.3	134.0	6.7	<1	6.70	Sampling	1
699-36-66B	569731.3	134469.0	125.5	51.9	<1	51.86	Sampling	1
699-36-70A	568466.7	134308.8	130.2	23.7	<1	23.65	Sampling	1
699-36-70B	568427.8	134626.0	128.6	188.8	<1	188.75	Sampling	1
699-37-66	569730.3	134797.2	125.2	55.3	<1	55.32	Sampling	1
699-38-68A	569180.3	134931.6	129.7	591.0	<1	591.00	Sampling	1
699-38-70B	568469.1	135331.0	95.6	10.1	<1	10.06	Sampling	1
699-38-70C	569084.1	135325.6	103.0	810.5	<1	810.50	Sampling	1
699-40-62	571164.3	135764.4	117.2	94.2	<1	94.20	Sampling	1
699-40-65	570057.5	135881.2	124.1	429.0	<1	429.00	Sampling	1
699-43-69	568967.0	136488.5	99.2	9.8	<1	9.75	Sampling	1
699-44-64	570390.7	136897.4	119.2	48.2	<1	48.18	Sampling	1
699-45-69A	568729.3	137182.7	128.6	9.2	<1	9.24	Sampling	1
699-45-69C	568947.1	137233.8	107.5	39.9	<1	39.90	Sampling	1
699-47-60	571474.4	137968.7	117.0	7.5	<1	7.49	Sampling	1
699-48-71	568387.9	138056.9	128.4	225.0	<1	225.00	Sampling	1
699-49-100C	559303.7	138503.2	134.3	9.9	<1	9.93	Sampling	1
699-50-74	567359.5	138646.7	127.2	9.5	<1	9.51	Sampling	1
699-51-63	570664.4	139148.4	121.6	9.2	<1	9.20	Sampling	1

Table A-5. Technetium-99 Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*

* Value Type: indicates calculation method for Residual Ratio used in kriging:

Value Type 1 - For monitoring wells, the residual was calculated at each monitoring location as the ratio between the sample average measured value and the value calculated at the end of CY2014 from the simulated results detailed in ECF-200ZP1-16-0076, *Description of Groundwater Calculations and Assessments for the Calendar Year 2015 (CY 2015) 200 Areas Pump and Treat Report*;

Value Type 2 - For extraction wells, the residual was calculated at each extraction well as the ratio between the measured mass recovery during CY-2015 [calculated by multiplying the flow rate by the influent port concentration] and the simulated mass recovery (ECF-200ZP1-16-0076). Note: in case of simulated recovery rate equals to zero, residual ratio was calculated using Value Type 1.

Table A-6. Trichloroethene Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-E11-1	571003.1	134505.3	105.1	0.3	<0.5	0.50	Characterization	1
299-E11-1	571003.1	134505.3	111.2	0.3	<0.5	0.50	Characterization	1
299-E11-1	571003.1	134505.3	117.3	0.3	<0.5	0.50	Characterization	1
299-E11-1	571003.1	134505.3	120.4	0.3	<0.5	0.50	Characterization	1
299-E20-1	570503.0	135199.8	112.1	0.3	<0.5	0.50	Characterization	1
299-E20-1	570503.0	135199.8	115.2	0.3	<0.5	0.50	Characterization	1
299-E20-2	570897.9	134895.8	109.8	0.3	<0.5	0.50	Characterization	1
299-E20-2	570897.9	134895.8	115.9	0.3	<0.5	0.50	Characterization	1
299-E20-2	570897.9	134895.8	119.0	0.3	<0.5	0.50	Characterization	1
299-W11-97	568317.6	135875.9	59.7	0.3	3.3	0.08	Characterization	1
299-W11-97	568317.6	135875.9	65.9	0.3	3.3	0.08	Characterization	1
299-W11-97	568317.6	135875.9	72.0	0.3	3.3	0.08	Characterization	1
299-W11-97	568317.6	135875.9	78.4	0.3	4.0	0.06	Characterization	1
299-W11-97	568317.6	135875.9	84.5	0.3	4.8	0.05	Characterization	1
299-W11-97	568317.6	135875.9	90.2	4.4	5.2	0.85	Characterization	1
299-W11-97	568317.6	135875.9	97.9	4.9	4.5	1.08	Characterization	1
299-W11-97	568317.6	135875.9	102.8	1.3	2.4	0.55	Characterization	1
299-W11-97	568317.6	135875.9	110.1	0.9	2.3	0.38	Characterization	1
299-W11-97	568317.6	135875.9	121.1	0.3	2.2	0.11	Characterization	1

Table A-6. Trichloroethene Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W13-2	568832.6	135819.4	66.6	0.6	2.0	0.32	Characterization	1
299-W13-2	568832.6	135819.4	73.3	0.7	2.0	0.34	Characterization	1
299-W13-2	568832.6	135819.4	79.8	0.7	2.0	0.37	Characterization	1
299-W13-2	568832.6	135819.4	86.1	0.7	2.1	0.34	Characterization	1
299-W13-2	568832.6	135819.4	93.0	1.9	2.3	0.81	Characterization	1
299-W13-2	568832.6	135819.4	98.6	1.9	2.5	0.76	Characterization	1
299-W13-2	568832.6	135819.4	105.6	1.3	2.4	0.54	Characterization	1
299-W13-2	568832.6	135819.4	111.2	1.4	2.3	0.61	Characterization	1
299-W13-2	568832.6	135819.4	117.3	1.1	2.2	0.50	Characterization	1
299-W13-2	568832.6	135819.4	123.4	1.1	2.0	0.55	Characterization	1
299-W15-228	565745.4	135711.5	49.0	0.3	<0.5	0.60	Characterization	1
299-W15-228	565745.4	135711.5	74.8	0.5	<0.5	1.00	Characterization	1
299-W15-228	565745.4	135711.5	80.8	0.5	<0.5	1.00	Characterization	1
299-W15-228	565745.4	135711.5	86.9	0.5	<0.5	1.00	Characterization	1
299-W15-228	565745.4	135711.5	93.0	0.5	<0.5	1.00	Characterization	1
299-W15-228	565745.4	135711.5	99.3	0.5	<0.5	1.00	Characterization	1
299-W15-228	565745.4	135711.5	105.1	0.5	<0.5	1.00	Characterization	1
299-W15-228	565745.4	135711.5	111.3	0.5	<0.5	1.00	Characterization	1
299-W15-228	565745.4	135711.5	117.5	0.5	<0.5	1.00	Characterization	1
299-W15-228	565745.4	135711.5	123.1	0.5	<0.5	1.00	Characterization	1
299-W15-228	565745.4	135711.5	129.8	0.5	<0.5	1.00	Characterization	1
299-W15-229	566049.3	135678.8	74.6	0.3	<0.5	0.50	Characterization	1
299-W15-229	566049.3	135678.8	99.1	0.3	<0.5	0.50	Characterization	1
299-W15-229	566049.3	135678.8	132.0	0.3	<0.5	0.50	Characterization	1
299-W18-41	566045.1	135048.5	56.4	0.3	<0.5	0.50	Characterization	1
299-W18-41	566045.1	135048.5	74.8	0.3	<0.5	0.50	Characterization	1
299-W18-41	566045.1	135048.5	80.3	0.3	<0.5	0.50	Characterization	1
299-W18-41	566045.1	135048.5	86.5	0.3	<0.5	0.50	Characterization	1
299-W18-41	566045.1	135048.5	92.7	0.3	<0.5	0.50	Characterization	1

Table A-6. Trichloroethene Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W18-41	566045.1	135048.5	98.8	0.3	<0.5	0.50	Characterization	1
299-W18-41	566045.1	135048.5	104.9	0.3	<0.5	0.50	Characterization	1
299-W18-41	566045.1	135048.5	110.7	0.3	<0.5	0.50	Characterization	1
299-W18-41	566045.1	135048.5	120.2	0.3	<0.5	0.50	Characterization	1
299-W18-41	566045.1	135048.5	126.3	0.3	<0.5	0.50	Characterization	1
299-W18-41	566045.1	135048.5	132.2	0.3	<0.5	0.50	Characterization	1
299-W19-111	567313.0	135547.0	87.9	3.9	1.0	4.03	Characterization	1
299-W19-111	567313.0	135547.0	94.0	6.2	0.9	6.70	Characterization	1
299-W19-111	567313.0	135547.0	100.1	2.7	0.6	4.65	Characterization	1
299-W19-111	567313.0	135547.0	105.9	2.6	<0.5	5.20	Characterization	1
299-W19-111	567313.0	135547.0	112.1	3.2	<0.5	6.40	Characterization	1
299-W19-111	567313.0	135547.0	118.2	3.0	<0.5	5.90	Characterization	1
299-W19-111	567313.0	135547.0	124.2	2.1	<0.5	4.20	Characterization	1
299-W19-113	567689.6	135008.2	109.1	2.3	2.5	0.91	Characterization	1
299-W19-113	567689.6	135008.2	115.2	1.8	2.0	0.91	Characterization	1
299-W19-113	567689.6	135008.2	121.3	1.3	0.9	1.38	Characterization	1
299-W19-113	567689.6	135008.2	126.9	0.7	0.9	0.77	Characterization	1
299-W19-114	567901.9	135013.2	94.3	3.5	1.1	3.29	Characterization	1
299-W19-114	567901.9	135013.2	103.4	3.2	2.4	1.33	Characterization	1
299-W19-114	567901.9	135013.2	109.6	2.4	2.2	1.10	Characterization	1
299-W19-114	567901.9	135013.2	115.8	7.5	1.5	4.93	Characterization	1
299-W19-114	567901.9	135013.2	121.9	2.4	<0.5	4.80	Characterization	1
299-W19-114	567901.9	135013.2	126.3	0.3	<0.5	0.50	Characterization	1
299-W5-2	568175.4	137621.1	81.7	1.1	<0.5	2.20	Characterization	1
299-W5-2	568175.4	137621.1	87.5	0.7	<0.5	1.43	Characterization	1
299-W5-2	568175.4	137621.1	91.5	0.8	<0.5	1.56	Characterization	1
299-W5-2	568175.4	137621.1	93.7	1.3	<0.5	2.60	Characterization	1
299-W5-2	568175.4	137621.1	102.2	0.3	<0.5	0.50	Characterization	1
299-W5-2	568175.4	137621.1	108.8	1.3	<0.5	2.60	Characterization	1

Table A-6. Trichloroethene Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W5-2	568175.4	137621.1	111.9	1.3	<0.5	2.60	Characterization	1
299-W5-2	568175.4	137621.1	119.3	1.3	<0.5	2.60	Characterization	1
299-W5-2	568175.4	137621.1	124.1	1.3	<0.5	2.60	Characterization	1
299-W6-15	567781.7	137076.4	80.9	1.1	1.2	0.90	Characterization	1
299-W6-15	567781.7	137076.4	86.4	2.1	2.9	0.72	Characterization	1
299-W6-15	567781.7	137076.4	92.5	3.1	3.1	1.00	Characterization	1
299-W6-15	567781.7	137076.4	110.8	5.9	5.9	1.01	Characterization	1
299-W6-15	567781.7	137076.4	123.0	4.0	3.5	1.13	Characterization	1
299-W7-13	566024.4	137636.3	79.7	0.3	<0.5	0.50	Characterization	1
299-W7-13	566024.4	137636.3	107.1	0.3	<0.5	0.50	Characterization	1
299-W7-13	566024.4	137636.3	128.0	0.3	<0.5	0.50	Characterization	1
699-38-64	570189.6	135318.8	66.2	0.3	<0.5	0.50	Characterization	1
699-38-64	570189.6	135318.8	71.4	0.3	<0.5	0.50	Characterization	1
699-38-64	570189.6	135318.8	78.6	0.3	<0.5	0.50	Characterization	1
699-38-64	570189.6	135318.8	85.2	0.3	<0.5	0.50	Characterization	1
699-38-64	570189.6	135318.8	91.1	0.3	<0.5	0.50	Characterization	1
699-38-64	570189.6	135318.8	116.0	0.4	<0.5	0.74	Characterization	1
699-38-64	570189.6	135318.8	122.5	0.7	<0.5	1.40	Characterization	1
699-40-67	569420.3	135815.7	67.1	0.5	<0.5	1.00	Characterization	1
699-40-67	569420.3	135815.7	74.4	0.5	<0.5	1.00	Characterization	1
699-40-67	569420.3	135815.7	80.1	0.5	<0.5	1.00	Characterization	1
699-40-67	569420.3	135815.7	86.8	0.5	<0.5	1.00	Characterization	1
699-40-67	569420.3	135815.7	92.5	0.5	0.8	0.68	Characterization	1
699-40-67	569420.3	135815.7	98.6	0.5	1.4	0.35	Characterization	1
699-40-67	569420.3	135815.7	118.6	3.5	1.9	1.80	Characterization	1
699-40-67	569420.3	135815.7	124.1	3.6	1.3	2.76	Characterization	1
699-46-68	569109.8	137600.9	83.7	0.5	<0.5	1.00	Characterization	1
699-46-68	569109.8	137600.9	91.6	0.5	<0.5	1.00	Characterization	1
699-46-68	569109.8	137600.9	98.6	0.5	<0.5	1.00	Characterization	1

Table A-6. Trichloroethene Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-46-68	569109.8	137600.9	105.7	0.5	<0.5	1.00	Characterization	1
699-46-68	569109.8	137600.9	124.8	0.5	<0.5	1.00	Characterization	1
699-49-69	568829.7	137966.5	87.2	0.3	<0.5	0.60	Characterization	1
699-49-69	568829.7	137966.5	93.5	0.3	<0.5	0.60	Characterization	1
699-49-69	568829.7	137966.5	99.6	0.3	<0.5	0.60	Characterization	1
699-49-69	568829.7	137966.5	105.7	0.3	<0.5	0.60	Characterization	1
699-49-69	568829.7	137966.5	110.5	0.3	<0.5	0.60	Characterization	1
699-49-69	568829.7	137966.5	118.0	0.3	<0.5	0.60	Characterization	1
699-49-69	568829.7	137966.5	123.9	0.3	<0.5	0.60	Characterization	1
299-W11-49	567361.5	135924.7	112.4	1.0	0.2	3.89	Pumping Well	2
299-W11-50	566966.3	136756.6	106.1	0.7	0.3	2.00	Pumping Well	2
299-W11-90	567306.8	136519.7	99.3	2.0	0.1	7.73	Pumping Well	2
299-W11-92	566692.9	136351.8	106.3	0.2	0.6	0.28	Pumping Well	2
299-W11-96	567774.8	136772.2	104.9	6.0	2.8	2.06	Pumping Well	1
299-W12-2	568312.7	136610.3	100.2	0.5	0.1	2.90	Pumping Well	2
299-W12-3	568321.5	136998.1	103.0	0.2	0.0	1.88	Pumping Well	2
299-W12-4	568327.4	136363.7	92.7	0.5	0.3	1.58	Pumping Well	2
299-W14-20	566909.2	136284.5	105.3	1.1	0.6	1.24	Pumping Well	2
299-W14-21	567721.5	135890.0	93.6	0.3	0.5	0.59	Pumping Well	2
299-W14-22	568324.9	136116.5	97.3	0.3	0.5	0.54	Pumping Well	2
299-W14-73	567359.0	136204.6	97.5	1.3	0.1	7.87	Pumping Well	2
299-W14-74	567781.5	136381.3	98.8	1.2	1.1	0.79	Pumping Well	2
299-W15-225	566657.4	136108.9	105.8	0.1	0.3	0.29	Pumping Well	2
299-W17-2	566951.6	135806.2	110.0	1.1	0.1	7.05	Pumping Well	2
299-W17-3	566925.9	135325.0	106.3	1.2	0.5	1.00	Pumping Well	1
299-W22-90	566961.4	134483.2	125.4	0.3	0.5	1.00	Pumping Well	1
299-W22-91	566911.8	134134.5	123.6	0.3	0.5	1.00	Pumping Well	1
299-W22-92	567167.8	134029.8	125.5	0.3	0.5	1.00	Pumping Well	1
299-W5-1	568329.6	137321.5	105.7	0.1	0.0	4.15	Pumping Well	2

Table A-6. Trichloroethene Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W10-1	566663.1	136734.6	132.2	2.4	0.7	3.32	Sampling	1
299-W10-14	566017.2	136608.9	80.4	0.3	<0.5	0.50	Sampling	1
299-W10-27	566844.0	136441.8	130.1	0.7	1.1	0.62	Sampling	1
299-W10-30	566082.8	136739.3	131.7	0.3	<0.5	0.60	Sampling	1
299-W10-31	566266.4	136968.3	131.2	0.3	<0.5	0.50	Sampling	1
299-W10-33	566772.8	136610.2	83.3	0.3	<0.5	0.60	Sampling	1
299-W11-13	567099.4	136424.0	106.8	2.3	1.3	1.82	Sampling	1
299-W11-18	567181.9	137161.5	132.0	2.9	1.1	2.53	Sampling	1
299-W11-43	567269.7	136971.0	85.0	1.5	8.3	0.18	Sampling	1
299-W11-45	566992.8	136775.6	124.9	7.0	2.0	3.53	Sampling	1
299-W11-47	566933.8	136680.7	121.4	4.8	3.4	1.39	Sampling	1
299-W11-48	566882.0	136846.2	110.6	8.1	1.6	5.13	Sampling	1
299-W11-87	568141.1	136608.7	104.2	4.7	3.6	1.33	Sampling	1
299-W11-88	567874.7	137113.1	79.4	0.3	<0.5	0.67	Sampling	1
299-W13-1	568148.7	136048.6	98.3	1.0	5.2	0.19	Sampling	1
299-W14-11	566901.7	136287.6	123.1	5.9	2.2	2.70	Sampling	1
299-W14-13	566901.7	136282.4	128.4	4.2	0.9	4.51	Sampling	1
299-W14-14	566898.4	136181.0	129.5	2.8	0.8	3.51	Sampling	1
299-W14-71	567733.4	135567.8	91.2	9.1	4.6	1.98	Sampling	1
299-W14-72	567328.4	135941.3	87.2	9.5	1.0	9.60	Sampling	1
299-W15-11	566412.3	136000.7	134.2	0.3	<0.5	0.60	Sampling	1
299-W15-152	566309.4	135550.0	132.1	0.4	<0.5	0.83	Sampling	1
299-W15-17	566306.9	135719.0	78.9	0.4	<0.5	0.80	Sampling	1
299-W15-33	566433.3	135966.7	133.1	0.4	<0.5	0.75	Sampling	1
299-W15-37	566716.5	135248.3	132.7	0.4	<0.5	0.83	Sampling	1
299-W15-42	566581.8	135627.0	129.4	0.6	<0.5	1.20	Sampling	1
299-W15-46	566752.2	135586.7	127.4	0.4	<0.5	0.75	Sampling	1
299-W15-49	566307.2	135972.9	131.2	0.3	<0.5	0.60	Sampling	1
299-W15-50	566793.5	135790.7	123.0	0.5	1.3	0.37	Sampling	1

Table A-6. Trichloroethene Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W15-7	566675.9	135920.2	122.3	0.8	0.7	1.07	Sampling	1
299-W15-763	566809.2	136028.8	130.2	2.2	0.6	3.58	Sampling	1
299-W15-765	566697.0	136373.1	130.2	1.9	0.5	3.61	Sampling	1
299-W15-83	566304.5	135826.2	132.0	0.4	<0.5	0.75	Sampling	1
299-W15-94	566307.6	135640.3	132.1	0.4	<0.5	0.73	Sampling	1
299-W18-1	566421.5	135465.2	113.8	0.4	<0.5	0.75	Sampling	1
299-W18-15	566380.0	134733.5	134.1	0.4	<0.5	0.80	Sampling	1
299-W18-16	566605.1	135425.7	131.1	0.3	<0.5	0.50	Sampling	1
299-W18-21	566097.7	134978.7	135.3	0.4	<0.5	0.80	Sampling	1
299-W18-22	566088.6	134990.2	72.6	0.4	<0.5	0.75	Sampling	1
299-W18-40	566723.3	134996.4	130.9	0.3	<0.5	0.60	Sampling	1
299-W19-101	567939.1	135014.1	128.7	0.3	<0.5	0.55	Sampling	1
299-W19-105	567565.2	134745.4	129.8	0.3	<0.5	0.68	Sampling	1
299-W19-107	567997.9	135205.7	119.7	2.7	1.7	1.61	Sampling	1
299-W19-18	567360.6	135012.4	124.8	0.5	<0.5	1.00	Sampling	1
299-W19-34A	567673.6	135012.2	113.3	3.0	2.1	1.40	Sampling	1
299-W19-34B	567662.9	135010.7	87.6	3.8	2.3	1.68	Sampling	1
299-W19-35	567992.1	135015.2	130.4	0.5	<0.5	1.00	Sampling	1
299-W19-36	567634.7	135017.1	130.4	1.3	0.5	2.51	Sampling	1
299-W19-39	567901.7	134886.7	131.5	0.4	<0.5	0.80	Sampling	1
299-W19-4	567949.9	135350.8	98.3	0.6	1.3	0.48	Sampling	1
299-W19-41	566896.5	135004.5	131.9	0.3	<0.5	0.60	Sampling	1
299-W19-43	567699.2	135004.0	130.5	1.1	<0.5	2.17	Sampling	1
299-W19-46	567782.7	134842.5	130.3	0.3	<0.5	0.65	Sampling	1
299-W19-47	566895.3	135161.9	131.0	0.5	<0.5	0.93	Sampling	1
299-W19-48	567822.9	134926.0	126.9	0.4	<0.5	0.71	Sampling	1
299-W19-49	567568.0	134894.4	129.0	0.6	<0.5	1.11	Sampling	1
299-W19-6	567133.3	134693.8	89.8	1.2	<0.5	2.30	Sampling	1
299-W21-2	568124.4	134573.8	129.5	0.3	<0.5	0.55	Sampling	1

Table A-6. Trichloroethene Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W22-113	566904.6	134193.0	128.2	0.3	<0.5	0.50	Sampling	1
299-W22-24P	567648.2	134410.9	44.0	0.3	<0.5	0.60	Sampling	1
299-W22-24S	567648.2	134410.9	101.1	0.3	<0.5	0.60	Sampling	1
299-W22-45	566945.2	134292.5	131.8	0.3	<0.5	0.50	Sampling	1
299-W22-47	566908.7	134076.3	130.5	0.3	<0.5	0.60	Sampling	1
299-W22-49	566904.4	134201.6	131.8	0.3	<0.5	0.50	Sampling	1
299-W22-69	567179.6	134347.8	129.4	0.3	<0.5	0.50	Sampling	1
299-W22-72	567237.4	134207.1	129.8	0.3	<0.5	0.60	Sampling	1
299-W22-83	567009.1	134092.5	132.0	0.3	<0.5	0.51	Sampling	1
299-W22-86	567186.7	134041.3	129.8	0.3	<0.5	0.58	Sampling	1
299-W22-87	567541.8	134539.9	129.7	0.4	<0.5	0.75	Sampling	1
299-W22-88	568046.5	134390.5	128.2	0.6	<0.5	1.10	Sampling	1
299-W22-95	567170.5	134549.1	126.0	0.3	<0.5	0.62	Sampling	1
299-W22-96	567351.9	134145.6	129.2	0.3	<0.5	0.55	Sampling	1
299-W23-15	566794.0	134127.2	132.4	0.3	<0.5	0.55	Sampling	1
299-W23-19	566759.1	134166.7	137.9	0.3	<0.5	0.60	Sampling	1
299-W23-21	566707.7	134294.0	132.1	0.3	<0.5	0.53	Sampling	1
299-W23-4	566628.2	134391.9	129.8	0.4	<0.5	0.75	Sampling	1
299-W26-13	566424.4	133293.6	132.1	0.3	<0.5	0.57	Sampling	1
299-W26-14	566682.7	133539.2	131.3	0.3	<0.5	0.50	Sampling	1
299-W27-2	566908.3	133670.4	81.2	0.3	<0.5	0.55	Sampling	1
299-W6-3	567118.2	137299.1	87.0	0.3	<0.5	0.50	Sampling	1
299-W6-6	567318.7	137638.7	87.3	0.4	<0.5	0.80	Sampling	1
299-W7-3	566292.0	137638.6	66.4	0.4	<0.5	0.70	Sampling	1
699-30-66	569991.0	132739.2	90.8	0.3	<0.5	0.50	Sampling	1
699-32-62	571009.6	133215.9	113.2	0.3	<0.5	0.50	Sampling	1
699-32-72A	567942.7	133362.6	62.2	0.4	<0.5	0.80	Sampling	1
699-32-76	566683.9	133137.7	129.4	0.3	<0.5	0.50	Sampling	1
699-33-74	567472.7	133552.2	129.0	0.3	<0.5	0.50	Sampling	1

Table A-6. Trichloroethene Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-33-75	566907.8	133662.5	129.6	0.3	<0.5	0.60	Sampling	1
699-33-76	566621.2	133600.4	130.2	0.3	<0.5	0.50	Sampling	1
699-34-61	571395.9	133809.9	125.4	0.4	<0.5	0.80	Sampling	1
699-34-72	567860.0	133785.3	128.4	1.5	<0.5	3.00	Sampling	1
699-35-66A	569857.9	134099.2	119.6	0.8	1.9	0.39	Sampling	1
699-35-78A	566063.6	134271.3	134.0	0.4	<0.5	0.80	Sampling	1
699-36-61A	571395.5	134557.1	119.5	0.3	<0.5	0.55	Sampling	1
699-36-66B	569731.3	134469.0	125.5	0.6	1.4	0.39	Sampling	1
699-36-70A	568466.7	134308.8	130.2	0.3	<0.5	0.55	Sampling	1
699-36-70B	568427.8	134626.0	128.6	0.4	<0.5	0.89	Sampling	1
699-37-66	569730.3	134797.2	125.2	0.7	1.6	0.42	Sampling	1
699-38-61	571219.1	134997.3	122.4	0.4	<0.5	0.75	Sampling	1
699-38-65	570090.2	135039.8	117.9	0.3	<0.5	0.56	Sampling	1
699-38-68A	569180.3	134931.6	129.7	0.5	<0.5	0.93	Sampling	1
699-38-70B	568469.1	135331.0	95.6	5.2	3.1	1.69	Sampling	1
699-38-70C	569084.1	135325.6	103.0	4.0	2.4	1.69	Sampling	1
699-40-62	571164.3	135764.4	117.2	0.4	<0.5	0.89	Sampling	1
699-40-65	570057.5	135881.2	124.1	2.6	1.0	2.52	Sampling	1
699-43-69	568967.0	136488.5	99.2	2.2	0.6	3.71	Sampling	1
699-44-64	570390.7	136897.4	119.2	2.0	<0.5	3.95	Sampling	1
699-45-69A	568729.3	137182.7	128.6	0.4	<0.5	0.75	Sampling	1
699-45-69C	568947.1	137233.8	107.5	0.4	<0.5	0.83	Sampling	1
699-47-60	571474.4	137968.7	117.0	0.4	<0.5	0.80	Sampling	1
699-48-71	568387.9	138056.9	128.4	1.3	<0.5	2.56	Sampling	1
699-48-77C	566469.0	138086.8	114.5	0.3	<0.5	0.67	Sampling	1
699-48-77D	566433.3	138119.3	133.9	0.3	<0.5	0.69	Sampling	1
699-49-100C	559303.7	138503.2	134.3	0.4	<0.5	0.82	Sampling	1
699-50-74	567359.5	138646.7	127.2	0.3	<0.5	0.55	Sampling	1
699-51-63	570664.4	139148.4	121.6	0.4	<0.5	0.80	Sampling	1

Table A-6. Trichloroethene Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*

* Value Type: indicates calculation method for Residual Ratio used in kriging:

Value Type 1 - For monitoring wells, the residual was calculated at each monitoring location as the ratio between the sample average measured value and the value calculated at the end of CY2014 from the simulated results detailed in ECF-200ZP1-16-0076, *Description of Groundwater Calculations and Assessments for the Calendar Year 2015 (CY 2015) 200 Areas Pump and Treat Report*;

Value Type 2 - For extraction wells, the residual was calculated at each extraction well as the ratio between the measured mass recovery during CY-2015 [calculated by multiplying the flow rate by the influent port concentration] and the simulated mass recovery (ECF-200ZP1-16-0076). Note: in case of simulated recovery rate equals to zero, residual ratio was calculated using Value Type 1.

Table A-7. Tritium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-E11-1	571003.1	134505.3	105.1	88200.0	13485.6	6.54	Characterization	1
299-E11-1	571003.1	134505.3	111.2	115000.0	26983.7	4.26	Characterization	1
299-E11-1	571003.1	134505.3	117.3	158000.0	51800.9	3.05	Characterization	1
299-E11-1	571003.1	134505.3	120.4	124500.0	53340.4	2.33	Characterization	1
299-E20-1	570503.0	135199.8	112.1	23100.0	25820.8	0.89	Characterization	1
299-E20-1	570503.0	135199.8	115.2	25600.0	27067.4	0.95	Characterization	1
299-E20-1	570503.0	135199.8	118.4	20600.0	31245.3	0.66	Characterization	1
299-E20-2	570897.9	134895.8	109.8	99900.0	29391.3	3.40	Characterization	1
299-E20-2	570897.9	134895.8	115.9	78200.0	42112.5	1.86	Characterization	1
299-E20-2	570897.9	134895.8	119.0	133000.0	45793.6	2.90	Characterization	1
299-W11-97	568317.6	135875.9	59.7	298.0	<100	2.98	Characterization	1
299-W11-97	568317.6	135875.9	65.9	293.0	<100	2.93	Characterization	1
299-W11-97	568317.6	135875.9	72.0	329.0	<100	3.29	Characterization	1
299-W11-97	568317.6	135875.9	78.4	327.0	<100	3.27	Characterization	1
299-W11-97	568317.6	135875.9	84.5	298.0	<100	2.98	Characterization	1
299-W11-97	568317.6	135875.9	90.2	294.5	<100	2.95	Characterization	1
299-W11-97	568317.6	135875.9	97.9	286.0	<100	2.86	Characterization	1
299-W11-97	568317.6	135875.9	102.8	295.0	<100	2.95	Characterization	1
299-W11-97	568317.6	135875.9	110.1	295.0	<100	2.95	Characterization	1

Table A-7. Tritium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W11-97	568317.6	135875.9	115.0	290.0	<100	2.90	Characterization	1
299-W11-97	568317.6	135875.9	121.1	294.0	<100	2.94	Characterization	1
299-W13-2	568832.6	135819.4	66.6	292.0	<100	2.92	Characterization	1
299-W13-2	568832.6	135819.4	73.3	290.5	<100	2.91	Characterization	1
299-W13-2	568832.6	135819.4	79.8	288.0	<100	2.88	Characterization	1
299-W13-2	568832.6	135819.4	86.1	299.0	<100	2.99	Characterization	1
299-W13-2	568832.6	135819.4	93.0	300.0	<100	3.00	Characterization	1
299-W13-2	568832.6	135819.4	98.6	301.0	<100	3.01	Characterization	1
299-W13-2	568832.6	135819.4	105.6	288.0	<100	2.88	Characterization	1
299-W13-2	568832.6	135819.4	111.2	286.0	<100	2.86	Characterization	1
299-W13-2	568832.6	135819.4	117.3	295.0	<100	2.95	Characterization	1
299-W13-2	568832.6	135819.4	123.4	299.0	<100	2.99	Characterization	1
299-W15-228	565745.4	135711.5	49.0	84.6	<100	0.85	Characterization	1
299-W15-228	565745.4	135711.5	74.8	290.0	<100	2.90	Characterization	1
299-W15-228	565745.4	135711.5	80.8	290.0	<100	2.90	Characterization	1
299-W15-228	565745.4	135711.5	86.9	290.0	<100	2.90	Characterization	1
299-W15-228	565745.4	135711.5	93.0	280.0	<100	2.80	Characterization	1
299-W15-228	565745.4	135711.5	99.3	320.0	<100	3.20	Characterization	1
299-W15-228	565745.4	135711.5	105.1	740.0	<100	7.40	Characterization	1
299-W15-228	565745.4	135711.5	111.3	430.0	<100	4.30	Characterization	1
299-W15-228	565745.4	135711.5	117.5	600.0	<100	6.00	Characterization	1
299-W15-228	565745.4	135711.5	123.1	800.0	<100	8.00	Characterization	1
299-W15-228	565745.4	135711.5	129.8	460.0	<100	4.60	Characterization	1
299-W18-41	566045.1	135048.5	56.4	331.0	<100	3.31	Characterization	1
299-W18-41	566045.1	135048.5	74.8	2600.0	119.9	21.68	Characterization	1
299-W18-41	566045.1	135048.5	80.3	6600.0	119.9	55.04	Characterization	1
299-W18-41	566045.1	135048.5	86.5	354.0	234.4	1.51	Characterization	1
299-W18-41	566045.1	135048.5	92.7	333.0	543.9	0.61	Characterization	1
299-W18-41	566045.1	135048.5	98.8	396.0	543.9	0.73	Characterization	1

Table A-7. Tritium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W18-41	566045.1	135048.5	104.9	969.0	646.5	1.50	Characterization	1
299-W18-41	566045.1	135048.5	110.7	593.0	1060.8	0.56	Characterization	1
299-W18-41	566045.1	135048.5	119.9	1090.0	1060.8	1.03	Characterization	1
299-W18-41	566045.1	135048.5	126.3	2890.0	1116.0	2.59	Characterization	1
299-W18-41	566045.1	135048.5	132.5	2680.0	1279.0	2.10	Characterization	1
299-W19-111	567313.0	135547.0	87.9	339.0	<100	3.39	Characterization	1
299-W19-111	567313.0	135547.0	94.0	338.0	<100	3.38	Characterization	1
299-W19-111	567313.0	135547.0	100.1	336.0	<100	3.36	Characterization	1
299-W19-111	567313.0	135547.0	105.9	331.0	<100	3.31	Characterization	1
299-W19-111	567313.0	135547.0	112.1	324.0	<100	3.24	Characterization	1
299-W19-111	567313.0	135547.0	118.2	275.5	<100	2.76	Characterization	1
299-W19-111	567313.0	135547.0	124.2	306.0	<100	3.06	Characterization	1
299-W19-113	567689.6	135008.2	109.1	325.0	<100	3.25	Characterization	1
299-W19-113	567689.6	135008.2	115.2	297.0	<100	2.97	Characterization	1
299-W19-113	567689.6	135008.2	121.3	302.0	<100	3.02	Characterization	1
299-W19-113	567689.6	135008.2	126.9	859.0	<100	8.59	Characterization	1
299-W19-114	567901.9	135013.2	94.3	328.0	<100	3.28	Characterization	1
299-W19-114	567901.9	135013.2	103.4	326.0	<100	3.26	Characterization	1
299-W19-114	567901.9	135013.2	109.6	464.0	<100	4.64	Characterization	1
299-W19-114	567901.9	135013.2	115.8	329.0	<100	3.29	Characterization	1
299-W19-114	567901.9	135013.2	121.9	353.0	<100	3.53	Characterization	1
299-W19-114	567901.9	135013.2	126.3	309.0	<100	3.09	Characterization	1
299-W23-236	566798.7	134128.2	126.0	307.0	6126.7	0.05	Characterization	1
299-W23-236	566798.7	134128.2	136.0	350.0	2949.7	0.12	Characterization	1
299-W5-2	568175.4	137621.1	81.7	3840.0	<100	38.40	Characterization	1
299-W5-2	568175.4	137621.1	87.5	4055.0	<100	40.55	Characterization	1
299-W5-2	568175.4	137621.1	91.5	3860.0	<100	38.60	Characterization	1
299-W5-2	568175.4	137621.1	93.7	3780.0	<100	37.80	Characterization	1
299-W5-2	568175.4	137621.1	102.2	303.0	<100	3.03	Characterization	1

Table A-7. Tritium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W5-2	568175.4	137621.1	108.8	3280.0	<100	32.80	Characterization	1
299-W5-2	568175.4	137621.1	111.9	4290.0	<100	42.90	Characterization	1
299-W5-2	568175.4	137621.1	119.3	5210.0	<100	52.10	Characterization	1
299-W5-2	568175.4	137621.1	124.1	1230.0	<100	12.30	Characterization	1
699-38-64	570189.6	135318.8	66.2	334.0	<100	3.34	Characterization	1
699-38-64	570189.6	135318.8	71.4	342.0	<100	3.42	Characterization	1
699-38-64	570189.6	135318.8	78.6	423.0	<100	4.23	Characterization	1
699-38-64	570189.6	135318.8	81.3	487.0	<100	4.87	Characterization	1
699-38-64	570189.6	135318.8	85.2	484.0	<100	4.84	Characterization	1
699-38-64	570189.6	135318.8	91.1	602.0	<100	6.02	Characterization	1
699-38-64	570189.6	135318.8	116.0	14450.0	17736.6	0.81	Characterization	1
699-38-64	570189.6	135318.8	122.5	19700.0	30672.5	0.64	Characterization	1
699-40-67	569420.3	135815.7	67.1	290.0	639.7	0.45	Characterization	1
699-40-67	569420.3	135815.7	74.4	320.0	639.7	0.50	Characterization	1
699-40-67	569420.3	135815.7	80.1	320.0	639.7	0.50	Characterization	1
699-40-67	569420.3	135815.7	86.8	330.0	612.1	0.54	Characterization	1
699-40-67	569420.3	135815.7	92.5	300.0	458.5	0.65	Characterization	1
699-40-67	569420.3	135815.7	98.6	300.0	292.0	1.03	Characterization	1
699-40-67	569420.3	135815.7	118.6	770.0	<100	7.70	Characterization	1
699-40-67	569420.3	135815.7	124.1	1200.0	141.4	8.49	Characterization	1
699-46-68	569109.8	137600.9	83.7	1100.0	<100	11.00	Characterization	1
699-46-68	569109.8	137600.9	91.6	1000.0	<100	10.00	Characterization	1
699-46-68	569109.8	137600.9	98.6	1500.0	<100	15.00	Characterization	1
699-46-68	569109.8	137600.9	105.7	1250.0	<100	12.50	Characterization	1
699-46-68	569109.8	137600.9	124.8	280.0	1064.6	0.26	Characterization	1
699-49-69	568829.7	137966.5	87.2	206.0	181.9	1.13	Characterization	1
699-49-69	568829.7	137966.5	93.5	251.0	181.9	1.38	Characterization	1
699-49-69	568829.7	137966.5	99.6	449.0	181.9	2.47	Characterization	1
699-49-69	568829.7	137966.5	105.7	535.0	<100	5.35	Characterization	1

Table A-7. Tritium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-49-69	568829.7	137966.5	110.5	459.0	472.2	0.97	Characterization	1
699-49-69	568829.7	137966.5	118.0	435.0	471.9	0.92	Characterization	1
699-49-69	568829.7	137966.5	123.9	236.0	488.8	0.48	Characterization	1
299-W15-225	566657.4	136108.9	105.8	0.2	<100	7.85	Pumping Well	2
299-W14-20	566909.2	136284.5	105.4	0.8	<100	0.22	Pumping Well	2
299-W14-73	567359.0	136204.6	97.6	0.3	<100	0.15	Pumping Well	2
299-W14-74	567781.5	136381.3	98.8	1.2	<100	7.02	Pumping Well	2
299-W12-2	568312.7	136610.3	101.7	0.1	<100	1.92	Pumping Well	1
299-W11-50	566966.3	136756.6	107.0	0.9	<100	25.04	Pumping Well	1
299-W11-90	567306.8	136519.7	100.2	2.8	<100	0.72	Pumping Well	1
299-W11-96	567774.8	136772.2	105.0	1.6	<100	2.87	Pumping Well	1
299-W17-3	566925.9	135325.0	106.3	0.1	<100	408.05	Pumping Well	2
299-W17-2	566951.6	135806.2	110.0	0.1	<100	60.72	Pumping Well	2
299-W11-49	567361.5	135924.7	112.4	0.1	<100	4.57	Pumping Well	1
299-W14-21	567721.5	135890.0	93.6	0.1	<100	1.00	Pumping Well	2
299-W11-92	566692.9	136351.8	106.3	0.1	<100	1.24	Pumping Well	2
299-W5-1	568329.7	137321.2	105.9	0.1	<100	11.13	Pumping Well	2
299-W12-3	568321.5	136998.1	103.0	0.1	<100	9.04	Pumping Well	2
299-W12-4	568327.4	136363.7	92.8	0.1	<100	1.05	Pumping Well	1
299-W14-22	568324.7	136117.3	97.5	0.1	<100	1.00	Pumping Well	2
299-W22-90	566961.4	134483.2	125.5	0.1	<100	0.30	Pumping Well	2
299-W22-91	566911.8	134134.5	123.6	0.5	<100	0.85	Pumping Well	2
299-W22-92	567167.8	134029.8	125.6	0.5	<100	1.49	Pumping Well	1
299-W19-111	567313.0	135547.0	107.7	0.0	<100	0.27	Pumping Well	0
299-W6-15	567781.7	137076.4	102.1	0.7	<100	1.00	Pumping Well	0
299-W19-113	567689.6	135008.2	115.9	0.0	<100	6.58	Pumping Well	0
299-W19-114	567901.9	135013.2	116.7	0.0	<100	5.34	Pumping Well	0
299-W11-97	568317.6	135875.9	94.6	0.0	<100	1.00	Pumping Well	0
299-W10-1	566663.1	136734.6	132.2	295.5	<100	2.96	Sampling	1

Table A-7. Tritium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W10-14	566017.2	136608.9	80.4	283.0	1355.5	0.21	Sampling	1
299-W10-27	566844.0	136441.8	130.1	465.0	2166.4	0.21	Sampling	1
299-W10-29	566083.0	136828.7	131.6	722.9	108.8	6.65	Sampling	1
299-W10-30	566082.8	136739.3	131.7	195.1	<100	1.95	Sampling	1
299-W10-31	566266.4	136968.3	131.2	259.6	233.9	1.11	Sampling	1
299-W10-33	566772.8	136610.2	83.3	93.2	<100	0.93	Sampling	1
299-W11-13	567099.4	136424.0	106.8	8530.0	18613.5	0.46	Sampling	1
299-W11-18	567181.9	137161.5	132.0	2840.0	<100	28.40	Sampling	1
299-W11-43	567269.7	136971.0	85.0	4625.0	<100	46.25	Sampling	1
299-W11-45	566992.8	136775.6	124.9	5420.0	<100	54.20	Sampling	1
299-W11-47	566933.8	136680.7	121.4	1320.0	<100	13.20	Sampling	1
299-W11-48	566882.0	136846.2	110.6	7270.0	<100	72.70	Sampling	1
299-W11-87	568141.1	136608.7	104.2	305.0	<100	3.05	Sampling	1
299-W11-88	567874.7	137113.1	79.4	920.0	<100	9.20	Sampling	1
299-W13-1	568148.7	136048.6	98.3	337.0	<100	3.37	Sampling	1
299-W14-11	566901.7	136287.6	123.1	8785.0	16695.9	0.53	Sampling	1
299-W14-13	566901.7	136282.4	128.4	7282.0	4999.0	1.46	Sampling	1
299-W14-14	566898.4	136181.0	129.5	4850.0	3020.7	1.61	Sampling	1
299-W14-72	567328.4	135941.3	87.2	337.0	<100	3.37	Sampling	1
299-W15-11	566412.3	136000.7	134.2	735.0	155.3	4.73	Sampling	1
299-W15-152	566309.4	135550.0	132.1	811.8	516.0	1.57	Sampling	1
299-W15-17	566306.9	135719.0	78.9	154.9	<100	1.55	Sampling	1
299-W15-224	566307.9	135926.1	131.2	690.6	215.7	3.20	Sampling	1
299-W15-30	566304.6	135748.9	134.2	681.3	<100	6.81	Sampling	1
299-W15-33	566433.3	135966.7	133.1	877.0	103.9	8.44	Sampling	1
299-W15-37	566716.5	135248.3	132.7	560.0	<100	5.60	Sampling	1
299-W15-42	566581.8	135627.0	129.4	417.0	<100	4.17	Sampling	1
299-W15-46	566752.2	135586.7	127.4	790.0	<100	7.90	Sampling	1
299-W15-49	566307.2	135972.9	131.2	589.0	319.1	1.85	Sampling	1

Table A-7. Tritium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W15-50	566793.5	135790.7	123.0	646.0	<100	6.46	Sampling	1
299-W15-7	566675.9	135920.2	122.3	747.0	<100	7.47	Sampling	1
299-W15-763	566809.2	136028.8	130.2	1430.0	199.7	7.16	Sampling	1
299-W15-765	566697.0	136373.1	130.2	589.7	103.0	5.73	Sampling	1
299-W15-83	566304.5	135826.2	132.0	656.8	<100	6.57	Sampling	1
299-W15-94	566307.6	135640.3	132.1	657.6	259.7	2.53	Sampling	1
299-W18-1	566421.5	135465.2	113.8	1190.0	120.4	9.88	Sampling	1
299-W18-16	566605.1	135425.7	131.1	814.0	<100	8.14	Sampling	1
299-W18-21	566097.7	134978.7	135.3	2900.0	726.7	3.99	Sampling	1
299-W18-22	566088.6	134990.2	72.6	212.2	<100	2.12	Sampling	1
299-W19-101	567939.1	135014.1	128.7	772.0	<100	7.72	Sampling	1
299-W19-105	567565.2	134745.4	129.8	187.6	<100	1.88	Sampling	1
299-W19-4	567949.9	135350.8	98.3	300.0	<100	3.00	Sampling	1
299-W19-46	567782.7	134842.5	130.3	744.8	<100	7.45	Sampling	1
299-W19-47	566895.3	135161.9	131.0	310.0	<100	3.10	Sampling	1
299-W19-48	567822.9	134926.0	126.9	429.4	<100	4.29	Sampling	1
299-W19-49	567568.0	134894.4	129.0	150.8	<100	1.51	Sampling	1
299-W19-6	567133.3	134693.8	89.8	250.0	<100	2.50	Sampling	1
299-W21-2	568124.4	134573.8	129.5	4105.0	<100	41.05	Sampling	1
299-W22-113	566904.6	134193.0	128.2	51866.7	7197.9	7.21	Sampling	1
299-W22-24P	567648.2	134410.9	44.0	9610.0	<100	96.10	Sampling	1
299-W22-45	566945.2	134292.5	131.8	48050.0	8103.2	5.93	Sampling	1
299-W22-47	566908.7	134076.3	130.5	407.5	955.1	0.43	Sampling	1
299-W22-49	566904.4	134201.6	131.8	69400.0	5545.3	12.52	Sampling	1
299-W22-69	567179.6	134347.8	129.4	5760.0	4743.3	1.21	Sampling	1
299-W22-72	567237.4	134207.1	129.8	13350.0	19636.6	0.68	Sampling	1
299-W22-80	566842.9	134125.6	132.1	305.5	3067.0	0.10	Sampling	1
299-W22-81	567000.3	134354.2	131.5	10550.0	2087.3	5.05	Sampling	1
299-W22-82	567004.7	134167.1	131.9	21500.0	574.7	37.41	Sampling	1

Table A-7. Tritium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W22-83	567009.1	134092.5	132.0	11288.6	<100	112.89	Sampling	1
299-W22-84	566978.8	134547.6	131.7	204.0	<100	2.04	Sampling	1
299-W22-85	566902.9	134260.6	132.2	70300.0	8986.9	7.82	Sampling	1
299-W22-86	567186.7	134041.3	129.8	7842.5	5458.6	1.44	Sampling	1
299-W22-87	567541.8	134539.9	129.7	278.5	<100	2.79	Sampling	1
299-W22-88	568046.5	134390.5	128.2	13800.0	<100	138.00	Sampling	1
299-W22-89	566906.8	134031.7	129.8	359.5	433.9	0.83	Sampling	1
299-W22-94	567009.8	134429.8	127.8	210.0	283.7	0.74	Sampling	1
299-W22-95	567170.5	134549.1	126.0	233.5	<100	2.33	Sampling	1
299-W22-96	567351.9	134145.6	129.2	11405.0	35680.1	0.32	Sampling	1
299-W23-15	566794.0	134127.2	132.4	199.0	3964.0	0.05	Sampling	1
299-W23-19	566759.1	134166.7	137.9	11700.0	3932.6	2.98	Sampling	1
299-W23-20	566717.7	134446.2	132.1	187.1	4784.0	0.04	Sampling	1
299-W23-21	566707.7	134294.0	132.1	44233.3	13211.1	3.35	Sampling	1
299-W23-4	566628.2	134391.9	129.8	45500.0	9383.2	4.85	Sampling	1
299-W26-13	566424.4	133293.6	132.1	81.9	<100	0.82	Sampling	1
299-W26-14	566682.7	133539.2	131.3	339.0	<100	3.39	Sampling	1
299-W6-11	567162.5	137634.8	132.6	1260.0	118.0	10.67	Sampling	1
299-W6-12	566915.5	137635.2	133.3	136.0	154.0	0.88	Sampling	1
299-W6-3	567118.2	137299.1	87.0	289.0	716.3	0.40	Sampling	1
299-W6-6	567318.7	137638.7	87.3	2300.0	1035.8	2.22	Sampling	1
299-W7-3	566292.0	137638.6	66.4	79.3	<100	0.79	Sampling	1
299-W8-1	565749.4	137646.6	135.5	22.9	<100	0.23	Sampling	1
699-30-66	569991.0	132739.2	90.8	588.0	<100	5.88	Sampling	1
699-32-62	571009.6	133215.9	113.2	5310.0	<100	53.10	Sampling	1
699-32-72A	567942.7	133362.6	62.2	41400.0	12102.7	3.42	Sampling	1
699-33-74	567472.7	133552.2	129.0	15700.0	3554.6	4.42	Sampling	1
699-33-75	566907.8	133662.5	129.6	93.5	<100	0.94	Sampling	1
699-34-61	571395.9	133809.9	125.4	8225.0	142.8	57.61	Sampling	1

Table A-7. Tritium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-34-72	567860.0	133785.3	128.4	14300.0	226.2	63.23	Sampling	1
699-35-66A	569857.9	134099.2	119.6	76900.0	87581.3	0.88	Sampling	1
699-35-78A	566063.6	134271.3	134.0	300.0	<100	3.00	Sampling	1
699-36-61A	571395.5	134557.1	119.5	36000.0	30734.1	1.17	Sampling	1
699-36-66B	569731.3	134469.0	125.5	269333.3	142791.1	1.89	Sampling	1
699-36-70A	568466.7	134308.8	130.2	41250.0	15053.9	2.74	Sampling	1
699-36-70B	568427.8	134626.0	128.6	8602.5	2562.6	3.36	Sampling	1
699-37-66	569730.3	134797.2	125.2	53566.7	43852.2	1.22	Sampling	1
699-38-61	571219.1	134997.3	122.4	76350.0	40134.1	1.90	Sampling	1
699-38-65	570090.2	135039.8	117.9	47225.0	31046.1	1.52	Sampling	1
699-38-68A	569180.3	134931.6	129.7	8695.0	<100	86.95	Sampling	1
699-38-70B	568469.1	135331.0	95.6	208.0	<100	2.08	Sampling	1
699-38-70C	569084.1	135325.6	103.0	6290.0	<100	62.90	Sampling	1
699-40-62	571164.3	135764.4	117.2	4940.0	4157.2	1.19	Sampling	1
699-40-65	570057.5	135881.2	124.1	11900.0	<100	119.00	Sampling	1
699-43-69	568967.0	136488.5	99.2	329.0	<100	3.29	Sampling	1
699-44-64	570390.7	136897.4	119.2	301.0	<100	3.01	Sampling	1
699-45-69A	568729.3	137182.7	128.6	279.0	<100	2.79	Sampling	1
699-45-69C	568947.1	137233.8	107.5	298.7	<100	2.99	Sampling	1
699-47-60	571474.4	137968.7	117.0	185.6	<100	1.86	Sampling	1
699-48-71	568387.9	138056.9	128.4	2475.0	<100	24.75	Sampling	1
699-48-77C	566469.0	138086.8	114.5	58800.0	70979.5	0.83	Sampling	1
699-48-77D	566433.3	138119.3	133.9	56850.0	17340.6	3.28	Sampling	1
699-49-100C	559303.7	138503.2	134.3	225.1	<100	2.25	Sampling	1
699-49-79	565771.1	138271.1	134.2	22.7	<100	0.23	Sampling	1
699-50-74	567359.5	138646.7	127.2	424.0	<100	4.24	Sampling	1
699-51-63	570664.4	139148.4	121.6	202.5	<100	2.03	Sampling	1
699-51-75	566978.1	138906.3	83.0	22.7	<100	0.23	Sampling	1
699-51-75P	566978.1	138906.3	131.9	23.0	<100	0.23	Sampling	1

Table A-7. Tritium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-49-79	565771.1	138271.1	134.2	22.7	<100	0.23	Sampling	1
699-50-74	567359.5	138646.7	127.2	424.0	<100	4.24	Sampling	1
699-51-63	570664.4	139148.4	121.6	202.5	<100	2.03	Sampling	1
699-51-75	566978.1	138906.3	83.0	22.7	<100	0.23	Sampling	1
699-51-75P	566978.1	138906.3	131.9	23.0	<100	0.23	Sampling	1
699-49-79	565771.1	138271.1	134.2	22.7	<100	0.23	Sampling	1
699-50-74	567359.5	138646.7	127.2	424.0	<100	4.24	Sampling	1
699-51-63	570664.4	139148.4	121.6	202.5	<100	2.03	Sampling	1
699-51-75	566978.1	138906.3	83.0	22.7	<100	0.23	Sampling	1
699-51-75P	566978.1	138906.3	131.9	23.0	<100	0.23	Sampling	1

* Value Type: indicates calculation method for Residual Ratio used in kriging:

Value Type 1 - For monitoring wells, the residual was calculated at each monitoring location as the ratio between the sample average measured value and the value calculated at the end of CY2014 from the simulated results detailed in ECF-200ZP1-16-0076, *Description of Groundwater Calculations and Assessments for the Calendar Year 2015 (CY 2015) 200 Areas Pump and Treat Report*;

Value Type 2 - For extraction wells, the residual was calculated at each extraction well as the ratio between the measured mass recovery during CY-2015 [calculated by multiplying the flow rate by the influent port concentration] and the simulated mass recovery (ECF-200ZP1-16-0076). Note: in case of simulated recovery rate equals to zero, residual ratio was calculated using Value Type 1.

Table A-8. Uranium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-E11-1	571003.1	134505.3	105.1	2.1	<1	2.10	Characterization	1
299-E11-1	571003.1	134505.3	111.2	1.7	<1	1.70	Characterization	1
299-E11-1	571003.1	134505.3	117.3	2.1	<1	2.10	Characterization	1
299-E11-1	571003.1	134505.3	120.4	1.6	<1	1.60	Characterization	1
299-E20-1	570503.0	135199.8	112.1	1.3	<1	1.30	Characterization	1
299-E20-1	570503.0	135199.8	115.2	1.1	<1	1.10	Characterization	1
299-E20-1	570503.0	135199.8	118.4	0.7	<1	0.66	Characterization	1
299-E20-2	570897.9	134895.8	109.8	1.5	<1	1.50	Characterization	1
299-E20-2	570897.9	134895.8	115.9	0.7	<1	0.73	Characterization	1

Table A-8. Uranium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-E20-2	570897.9	134895.8	119.0	2.1	<1	2.10	Characterization	1
299-W11-97	568317.6	135875.9	59.7	0.2	<1	0.23	Characterization	1
299-W11-97	568317.6	135875.9	65.9	1.3	<1	1.30	Characterization	1
299-W11-97	568317.6	135875.9	72.0	1.2	<1	1.20	Characterization	1
299-W11-97	568317.6	135875.9	78.4	1.3	<1	1.30	Characterization	1
299-W11-97	568317.6	135875.9	84.5	1.4	<1	1.40	Characterization	1
299-W11-97	568317.6	135875.9	90.2	1.8	<1	1.75	Characterization	1
299-W11-97	568317.6	135875.9	97.9	1.8	<1	1.80	Characterization	1
299-W11-97	568317.6	135875.9	102.8	1.8	<1	1.80	Characterization	1
299-W11-97	568317.6	135875.9	110.1	2.2	<1	2.20	Characterization	1
299-W11-97	568317.6	135875.9	115.0	1.4	<1	1.40	Characterization	1
299-W11-97	568317.6	135875.9	121.1	4.3	<1	4.30	Characterization	1
299-W13-2	568832.6	135819.4	73.3	0.9	<1	0.92	Characterization	1
299-W13-2	568832.6	135819.4	79.8	1.1	<1	1.10	Characterization	1
299-W13-2	568832.6	135819.4	86.1	1.1	<1	1.10	Characterization	1
299-W13-2	568832.6	135819.4	93.0	1.3	<1	1.30	Characterization	1
299-W13-2	568832.6	135819.4	98.6	2.1	<1	2.10	Characterization	1
299-W13-2	568832.6	135819.4	105.6	1.2	1.2	1.03	Characterization	1
299-W13-2	568832.6	135819.4	111.2	1.5	2.8	0.53	Characterization	1
299-W13-2	568832.6	135819.4	117.3	1.4	3.9	0.36	Characterization	1
299-W13-2	568832.6	135819.4	123.4	1.8	6.9	0.26	Characterization	1
299-W15-228	565745.4	135711.5	74.8	0.7	<1	0.66	Characterization	1
299-W15-228	565745.4	135711.5	80.8	0.8	<1	0.79	Characterization	1
299-W15-228	565745.4	135711.5	86.9	0.9	<1	0.89	Characterization	1
299-W15-228	565745.4	135711.5	90.2	1.2	<1	1.20	Characterization	1
299-W15-228	565745.4	135711.5	93.0	1.0	<1	1.02	Characterization	1
299-W15-228	565745.4	135711.5	99.3	0.6	<1	0.60	Characterization	1
299-W15-228	565745.4	135711.5	105.1	0.1	<1	0.10	Characterization	1
299-W15-228	565745.4	135711.5	111.3	0.7	<1	0.72	Characterization	1

Table A-8. Uranium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W15-228	565745.4	135711.5	117.5	0.5	<1	0.51	Characterization	1
299-W15-228	565745.4	135711.5	123.1	0.5	<1	0.47	Characterization	1
299-W15-228	565745.4	135711.5	129.8	7.1	<1	7.06	Characterization	1
299-W18-41	566045.1	135048.5	56.4	1.7	<1	1.70	Characterization	1
299-W18-41	566045.1	135048.5	74.8	13.8	<1	13.80	Characterization	1
299-W18-41	566045.1	135048.5	80.3	2.3	<1	2.30	Characterization	1
299-W18-41	566045.1	135048.5	86.5	0.7	1.3	0.56	Characterization	1
299-W18-41	566045.1	135048.5	92.7	1.0	3.0	0.33	Characterization	1
299-W18-41	566045.1	135048.5	98.8	1.0	3.0	0.34	Characterization	1
299-W18-41	566045.1	135048.5	104.9	0.9	4.6	0.20	Characterization	1
299-W18-41	566045.1	135048.5	110.7	0.7	11.4	0.06	Characterization	1
299-W18-41	566045.1	135048.5	120.2	4.1	11.4	0.36	Characterization	1
299-W18-41	566045.1	135048.5	126.3	15.7	11.7	1.34	Characterization	1
299-W18-41	566045.1	135048.5	132.2	13.2	12.5	1.06	Characterization	1
299-W19-111	567313.0	135547.0	87.9	0.8	<1	0.78	Characterization	1
299-W19-111	567313.0	135547.0	94.0	0.5	<1	0.54	Characterization	1
299-W19-111	567313.0	135547.0	100.1	0.7	<1	0.69	Characterization	1
299-W19-111	567313.0	135547.0	105.9	0.7	<1	0.71	Characterization	1
299-W19-111	567313.0	135547.0	112.1	0.9	<1	0.88	Characterization	1
299-W19-111	567313.0	135547.0	118.2	0.8	<1	0.85	Characterization	1
299-W19-111	567313.0	135547.0	124.2	1.2	<1	1.20	Characterization	1
299-W19-113	567689.6	135008.2	109.1	1.0	3.7	0.27	Characterization	1
299-W19-113	567689.6	135008.2	115.2	0.8	12.6	0.07	Characterization	1
299-W19-113	567689.6	135008.2	121.3	2.5	29.4	0.08	Characterization	1
299-W19-113	567689.6	135008.2	126.9	7.8	29.4	0.27	Characterization	1
299-W19-114	567901.9	135013.2	94.3	0.9	<1	0.92	Characterization	1
299-W19-114	567901.9	135013.2	103.4	1.5	1.1	1.32	Characterization	1
299-W19-114	567901.9	135013.2	109.6	3.7	6.1	0.61	Characterization	1
299-W19-114	567901.9	135013.2	115.8	2.6	21.4	0.12	Characterization	1

Table A-8. Uranium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W19-114	567901.9	135013.2	121.9	4.7	52.3	0.09	Characterization	1
299-W19-114	567901.9	135013.2	126.3	62.9	52.3	1.20	Characterization	1
299-W5-2	568175.4	137621.1	81.7	1.1	<1	1.10	Characterization	1
299-W5-2	568175.4	137621.1	87.5	1.4	<1	1.35	Characterization	1
299-W5-2	568175.4	137621.1	91.5	1.4	<1	1.40	Characterization	1
299-W5-2	568175.4	137621.1	93.7	1.6	<1	1.60	Characterization	1
299-W5-2	568175.4	137621.1	102.2	1.1	<1	1.10	Characterization	1
299-W5-2	568175.4	137621.1	108.8	1.2	<1	1.20	Characterization	1
299-W5-2	568175.4	137621.1	111.9	1.5	<1	1.50	Characterization	1
299-W5-2	568175.4	137621.1	119.3	1.1	<1	1.10	Characterization	1
299-W5-2	568175.4	137621.1	124.1	1.7	<1	1.70	Characterization	1
699-38-64	570189.6	135318.8	66.2	1.3	<1	1.28	Characterization	1
699-38-64	570189.6	135318.8	71.4	1.2	<1	1.24	Characterization	1
699-38-64	570189.6	135318.8	78.6	1.3	<1	1.34	Characterization	1
699-38-64	570189.6	135318.8	85.3	1.2	<1	1.20	Characterization	1
699-38-64	570189.6	135318.8	91.1	1.2	<1	1.20	Characterization	1
699-38-64	570189.6	135318.8	116.0	0.9	<1	0.94	Characterization	1
699-38-64	570189.6	135318.8	122.5	1.3	<1	1.30	Characterization	1
699-40-67	569420.3	135815.7	67.1	1.2	<1	1.24	Characterization	1
699-40-67	569420.3	135815.7	74.4	1.7	<1	1.71	Characterization	1
699-40-67	569420.3	135815.7	80.1	1.9	<1	1.92	Characterization	1
699-40-67	569420.3	135815.7	86.8	1.7	<1	1.74	Characterization	1
699-40-67	569420.3	135815.7	92.5	1.1	<1	1.05	Characterization	1
699-40-67	569420.3	135815.7	98.6	1.0	<1	1.00	Characterization	1
699-40-67	569420.3	135815.7	118.6	1.2	9.4	0.13	Characterization	1
699-40-67	569420.3	135815.7	124.1	1.6	11.2	0.14	Characterization	1
699-46-68	569109.8	137600.9	83.7	0.9	<1	0.94	Characterization	1
699-46-68	569109.8	137600.9	91.6	1.1	<1	1.06	Characterization	1
699-46-68	569109.8	137600.9	98.6	0.9	<1	0.88	Characterization	1

Table A-8. Uranium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-46-68	569109.8	137600.9	105.7	1.3	<1	1.30	Characterization	1
699-46-68	569109.8	137600.9	124.8	0.8	<1	0.83	Characterization	1
699-49-69	568829.7	137966.5	87.2	1.2	<1	1.16	Characterization	1
699-49-69	568829.7	137966.5	93.5	1.3	<1	1.29	Characterization	1
699-49-69	568829.7	137966.5	99.6	1.1	<1	1.13	Characterization	1
699-49-69	568829.7	137966.5	105.7	1.1	<1	1.11	Characterization	1
699-49-69	568829.7	137966.5	110.5	1.2	<1	1.18	Characterization	1
699-49-69	568829.7	137966.5	118.0	1.1	<1	1.09	Characterization	1
699-49-69	568829.7	137966.5	123.9	1.4	<1	1.44	Characterization	1
299-W15-225	566657.4	136108.9	105.8	0.1	<1	0.61	Pumping Well	2
299-W14-20	566909.2	136284.5	105.4	0.3	<1	0.74	Pumping Well	2
299-W14-73	567359.0	136204.6	97.6	0.2	<1	0.66	Pumping Well	2
299-W14-74	567781.5	136381.3	98.8	0.3	<1	0.72	Pumping Well	2
299-W12-2	568312.7	136610.3	101.7	0.2	<1	0.75	Pumping Well	2
299-W11-50	566966.3	136756.6	107.0	0.3	<1	0.71	Pumping Well	2
299-W11-90	567306.8	136519.7	100.2	0.4	<1	0.78	Pumping Well	2
299-W11-96	567774.8	136772.2	105.0	0.3	<1	0.72	Pumping Well	2
299-W17-3	566925.9	135325.0	106.3	0.2	<1	0.74	Pumping Well	2
299-W17-2	566951.6	135806.2	110.0	0.1	<1	0.81	Pumping Well	2
299-W11-49	567361.5	135924.7	112.4	0.2	<1	0.64	Pumping Well	2
299-W14-21	567721.5	135890.0	93.6	0.1	<1	0.99	Pumping Well	2
299-W11-92	566692.9	136351.8	106.3	0.2	<1	0.58	Pumping Well	2
299-W5-1	568329.7	137321.2	105.9	0.2	<1	0.74	Pumping Well	2
299-W12-3	568321.5	136998.1	103.0	0.2	<1	0.71	Pumping Well	2
299-W12-4	568327.4	136363.7	92.8	0.3	<1	1.02	Pumping Well	2
299-W14-22	568324.7	136117.3	97.5	0.2	<1	1.05	Pumping Well	2
299-W22-90	566961.4	134483.2	125.5	0.1	<1	0.21	Pumping Well	2
299-W22-91	566911.8	134134.5	123.6	0.2	<1	0.39	Pumping Well	2
299-W22-92	567167.8	134029.8	125.6	0.3	<1	2.53	Pumping Well	2

Table A-8. Uranium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W19-111	567313.0	135547.0	107.7	0.0	<1	0.02	Pumping Well	0
299-W6-15	567781.7	137076.4	102.1	0.1	<1	0.47	Pumping Well	0
299-W19-113	567689.6	135008.2	115.9	0.8	<1	0.57	Pumping Well	0
299-W19-114	567901.9	135013.2	116.7	0.9	<1	0.16	Pumping Well	0
299-W11-97	568317.6	135875.9	94.6	0.0	<1	0.20	Pumping Well	0
299-W10-1	566663.1	136734.6	132.2	1.1	3.7	0.31	Sampling	1
299-W10-14	566017.2	136608.9	80.4	0.9	<1	0.94	Sampling	1
299-W10-26	566843.4	136400.6	129.9	1.7	1.9	0.92	Sampling	1
299-W10-27	566844.0	136441.8	130.1	1.7	2.6	0.64	Sampling	1
299-W10-29	566083.0	136828.7	131.6	0.9	<1	0.86	Sampling	1
299-W10-30	566082.8	136739.3	131.7	0.9	<1	0.88	Sampling	1
299-W10-31	566266.4	136968.3	131.2	1.3	<1	1.32	Sampling	1
299-W10-33	566772.8	136610.2	83.3	1.3	<1	1.34	Sampling	1
299-W11-13	567099.4	136424.0	106.8	1.1	1.2	0.91	Sampling	1
299-W11-18	567181.9	137161.5	132.0	1.3	1.1	1.14	Sampling	1
299-W11-43	567269.7	136971.0	85.0	2.5	2.7	0.93	Sampling	1
299-W11-45	566992.8	136775.6	124.9	0.8	1.8	0.46	Sampling	1
299-W11-47	566933.8	136680.7	121.4	0.9	1.8	0.47	Sampling	1
299-W11-48	566882.0	136846.2	110.6	1.2	<1	1.18	Sampling	1
299-W11-87	568141.1	136608.7	104.2	1.2	1.3	0.93	Sampling	1
299-W11-88	567874.7	137113.1	79.4	1.0	<1	1.02	Sampling	1
299-W13-1	568148.7	136048.6	98.3	0.9	<1	0.90	Sampling	1
299-W14-11	566901.7	136287.6	123.1	2.1	1.2	1.66	Sampling	1
299-W14-13	566901.7	136282.4	128.4	2.3	1.3	1.75	Sampling	1
299-W14-14	566898.4	136181.0	129.5	1.1	1.2	0.91	Sampling	1
299-W14-15	566899.7	136230.7	129.4	1.4	1.3	1.08	Sampling	1
299-W14-16	567001.3	136318.5	129.5	1.3	1.4	0.97	Sampling	1
299-W14-17	567006.8	136218.3	129.3	0.9	1.3	0.71	Sampling	1
299-W14-18	566897.5	136344.2	129.2	1.8	1.5	1.15	Sampling	1

Table A-8. Uranium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W14-19	566898.6	136135.1	129.4	0.9	1.1	0.83	Sampling	1
299-W14-72	567328.4	135941.3	87.2	0.7	<1	0.73	Sampling	1
299-W15-11	566412.3	136000.7	134.2	0.9	1.0	0.84	Sampling	1
299-W15-152	566309.4	135550.0	132.1	2.0	2.7	0.77	Sampling	1
299-W15-17	566306.9	135719.0	78.9	0.9	<1	0.91	Sampling	1
299-W15-224	566307.9	135926.1	131.2	1.0	1.7	0.56	Sampling	1
299-W15-30	566304.6	135748.9	134.2	1.0	2.3	0.41	Sampling	1
299-W15-33	566433.3	135966.7	133.1	0.9	1.0	0.90	Sampling	1
299-W15-37	566716.5	135248.3	132.7	1.3	1.2	1.11	Sampling	1
299-W15-42	566581.8	135627.0	129.4	1.6	<1	1.58	Sampling	1
299-W15-44	566685.0	136066.5	130.7	0.9	<1	0.93	Sampling	1
299-W15-46	566752.2	135586.7	127.4	0.7	<1	0.69	Sampling	1
299-W15-49	566307.2	135972.9	131.2	0.8	1.5	0.56	Sampling	1
299-W15-50	566793.5	135790.7	123.0	0.8	<1	0.80	Sampling	1
299-W15-7	566675.9	135920.2	122.3	1.1	<1	1.06	Sampling	1
299-W15-763	566809.2	136028.8	130.2	1.2	<1	1.16	Sampling	1
299-W15-765	566697.0	136373.1	130.2	1.2	2.2	0.56	Sampling	1
299-W15-83	566304.5	135826.2	132.0	1.0	2.3	0.42	Sampling	1
299-W15-94	566307.6	135640.3	132.1	0.9	2.2	0.43	Sampling	1
299-W18-1	566421.5	135465.2	113.8	2.7	<1	2.74	Sampling	1
299-W18-15	566380.0	134733.5	134.1	23.0	9.6	2.39	Sampling	1
299-W18-16	566605.1	135425.7	131.1	2.9	1.0	2.77	Sampling	1
299-W18-21	566097.7	134978.7	135.3	16.1	18.2	0.88	Sampling	1
299-W18-22	566088.6	134990.2	72.6	1.1	<1	1.11	Sampling	1
299-W19-101	567939.1	135014.1	128.7	89.5	42.5	2.11	Sampling	1
299-W19-105	567565.2	134745.4	129.8	26.9	26.6	1.01	Sampling	1
299-W19-107	567997.9	135205.7	119.7	1.4	4.8	0.28	Sampling	1
299-W19-18	567360.6	135012.4	124.8	734.0	47.8	15.35	Sampling	1
299-W19-34A	567673.6	135012.2	113.3	1.4	10.1	0.14	Sampling	1

Table A-8. Uranium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
299-W19-35	567992.1	135015.2	130.4	75.3	26.9	2.79	Sampling	1
299-W19-36	567634.7	135017.1	130.4	867.5	23.8	36.50	Sampling	1
299-W19-39	567901.7	134886.7	131.5	69.1	48.8	1.41	Sampling	1
299-W19-4	567949.9	135350.8	98.3	0.8	<1	0.75	Sampling	1
299-W19-43	567699.2	135004.0	130.5	238.8	21.0	11.36	Sampling	1
299-W19-46	567782.7	134842.5	130.3	70.5	58.8	1.20	Sampling	1
299-W19-47	566895.3	135161.9	131.0	1.8	33.2	0.05	Sampling	1
299-W19-48	567822.9	134926.0	126.9	111.0	58.2	1.91	Sampling	1
299-W19-49	567568.0	134894.4	129.0	213.5	43.1	4.95	Sampling	1
299-W19-6	567133.3	134693.8	89.8	0.7	<1	0.69	Sampling	1
299-W21-2	568124.4	134573.8	129.5	3.2	19.9	0.16	Sampling	1
299-W22-113	566904.6	134193.0	128.2	1.9	6.2	0.30	Sampling	1
299-W22-45	566945.2	134292.5	131.8	4.2	5.8	0.73	Sampling	1
299-W22-47	566908.7	134076.3	130.5	4.2	3.4	1.23	Sampling	1
299-W22-49	566904.4	134201.6	131.8	4.2	4.3	0.98	Sampling	1
299-W22-72	567237.4	134207.1	129.8	0.9	<1	0.90	Sampling	1
299-W22-83	567009.1	134092.5	132.0	1.6	1.1	1.48	Sampling	1
299-W22-86	567186.7	134041.3	129.8	1.7	1.5	1.14	Sampling	1
299-W22-87	567541.8	134539.9	129.7	1.1	43.7	0.03	Sampling	1
299-W22-88	568046.5	134390.5	128.2	2.9	10.4	0.28	Sampling	1
299-W23-15	566794.0	134127.2	132.4	6.7	6.6	1.02	Sampling	1
299-W23-21	566707.7	134294.0	132.1	10.1	8.7	1.16	Sampling	1
299-W23-4	566628.2	134391.9	129.8	34.9	9.3	3.74	Sampling	1
299-W26-13	566424.4	133293.6	132.1	1.7	<1	1.73	Sampling	1
299-W26-14	566682.7	133539.2	131.3	1.0	<1	0.97	Sampling	1
299-W6-3	567118.2	137299.1	87.0	1.0	<1	0.95	Sampling	1
299-W6-6	567318.7	137638.7	87.3	1.5	<1	1.48	Sampling	1
299-W7-3	566292.0	137638.6	66.4	0.8	<1	0.76	Sampling	1
699-30-66	569991.0	132739.2	90.8	1.5	<1	1.50	Sampling	1

Table A-8. Uranium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*
699-33-74	567472.7	133552.2	129.0	2.0	1.7	1.20	Sampling	1
699-33-75	566907.8	133662.5	129.6	3.7	<1	3.70	Sampling	1
699-34-72	567860.0	133785.3	128.4	7.4	3.2	2.32	Sampling	1
699-35-66A	569857.9	134099.2	119.6	2.1	<1	2.07	Sampling	1
699-35-78A	566063.6	134271.3	134.0	11.1	3.9	2.86	Sampling	1
699-36-66B	569731.3	134469.0	125.5	2.3	<1	2.32	Sampling	1
699-36-70A	568466.7	134308.8	130.2	2.2	3.1	0.73	Sampling	1
699-36-70B	568427.8	134626.0	128.6	5.1	9.9	0.51	Sampling	1
699-37-66	569730.3	134797.2	125.2	1.6	<1	1.64	Sampling	1
699-38-68A	569180.3	134931.6	129.7	3.1	3.7	0.85	Sampling	1
699-38-70B	568469.1	135331.0	95.6	1.0	<1	1.01	Sampling	1
699-38-70C	569084.1	135325.6	103.0	2.6	1.8	1.45	Sampling	1
699-40-62	571164.3	135764.4	117.2	2.1	<1	2.12	Sampling	1
699-43-69	568967.0	136488.5	99.2	1.4	<1	1.43	Sampling	1
699-44-64	570390.7	136897.4	119.2	1.7	<1	1.70	Sampling	1
699-45-69A	568729.3	137182.7	128.6	1.5	<1	1.54	Sampling	1
699-45-69C	568947.1	137233.8	107.5	1.3	<1	1.27	Sampling	1
699-47-60	571474.4	137968.7	117.0	2.4	<1	2.42	Sampling	1
699-48-71	568387.9	138056.9	128.4	1.3	<1	1.29	Sampling	1
699-48-77C	566469.0	138086.8	114.5	0.3	<1	0.30	Sampling	1
699-48-77D	566433.3	138119.3	133.9	0.9	<1	0.91	Sampling	1
699-49-100C	559303.7	138503.2	134.3	2.2	<1	2.16	Sampling	1
699-50-74	567359.5	138646.7	127.2	1.4	<1	1.40	Sampling	1
699-51-63	570664.4	139148.4	121.6	2.3	<1	2.29	Sampling	1

* Value Type: indicates calculation method for Residual Ratio used in kriging:

Value Type 1 - For monitoring wells, the residual was calculated at each monitoring location as the ratio between the sample average measured value and the value calculated at the end of CY2014 from the simulated results detailed in ECF-200ZP1-16-0076, *Description of Groundwater Calculations and Assessments for the Calendar Year 2015 (CY 2015) 200 Areas Pump and Treat Report*;

Value Type 2 - For extraction wells, the residual was calculated at each extraction well as the ratio between the measured mass recovery during CY-2015 [calculated by multiplying the flow rate by the influent port concentration] and the

Table A-8. Uranium Kriging Input Data

Name	Easting	Northing	Elevation	Measured	Simulated	Residual Ratio	Data Type	Value Type*

simulated mass recovery (ECF-200ZP1-16-0076). Note: in case of simulated recovery rate equals to zero, residual ratio was calculated using Value Type 1.

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