

Notes on Coordinate System Used by the Spokane Valley-Rathdrum Prairie Aquifer Ground-Water Flow Model  
 May 7, 2007

The X-Y coordinate system used in the model is a “Lambert Conformal Conic” projected coordinate system defined by the following projection parameters:

Projection Parameter	DMS	Decimal degrees
Units	feet (U.S. survey)	
1st standard parallel	47 30 00	47.500000
2nd standard parallel	48 44 00	48.733333
Longitude of central meridian	-120 50 00	-120.833333
Latitude of projection origin	47 00 00	47.000000
False easting	0.000000	
False northing	0.000000	
Datum	NAD 1983	

In the shapefiles posted on the IDWR spatial data web site<sup>1</sup>, the name of the above coordinate system is “NAD\_1983\_StatePlane\_SpokaneValleyRathdrumPrarie\_Feet”.

In the horizontal plane, the finite difference model grid uses square cells 1320 ft x 1320 ft.

The grid is oriented so that rows are oriented along X axis, and columns are oriented along the Y axis, where the X-Y coordinate system is the Lambert projected coordinate system as described above. The model grid has 256 columns and 172 rows.

With respect to the above X-Y coordinate system, the lower left corner of the lower left cell is positioned at

$$X = 730,000 \text{ ft}$$

$$Y = 227,000 \text{ ft}$$

The upper right corner of the upper right cell is positioned at

$$X = 1,067,920 \text{ ft}$$

$$Y = 454,040 \text{ ft}$$

In the Modflow 2000 ground-water model, a cell is referred to by its layer-row-column index. The layer index increases from the top layer to the bottom layer. The row index increases from north to south (in the opposite direction of the positive Y axis). The column index increases from west to east (in the direction of the positive X axis). For example, a cell is referred to as “the cell in layer 1, row 23, column 14”.

<sup>1</sup> <http://www.idwr.idaho.gov/ftp/gisdata/Spatial/Projects/SpokaneRathdrum/>