

# How to Describe Well Locations Using Township, Range and Quarter-Calls

1. In most of Indiana, land is described in the U.S. **Township and Range System** which identifies the location of **Townships** (36 mi.<sup>2</sup> land units) based on their distance from principle meridians (figure 1).
2. A **normal** (regularly shaped) **section** is roughly 1 square-mile in size (figure 2).
3. **Location Calls** (descriptions of well locations) in normal sections may provide location information in a variety of similar formats; the order that individual elements of the description are presented may vary. Some acceptable examples:

4N 6W Sec. 7, NW NE SW, 330 NL, 400 WL  
 330 NL, 400 WL, NW NE SW, Sec. 7, T4N, R6W  
 7-4N-6W, 330 NL, 400 WL, NW NE SW

## Explanation:

**4N** The **Township Number** and **Township Direction** together define the **Township Location**. The **Township Location** is always written before the **Range Location**.

**6W** The **Range Number** and **Range Direction** together define the **Range Location**. The **Range Location** is always written after the **Township Location**. Together, the **Township Location** and **Range Location** define a **Township**.

**Sec. 7** In general, the 36 sections of each **Township** are laid out as in Figure 2. In some parts of Indiana, land unit Types other than **Sections** are used to describe land. These are known as Commons, Grants, Locations, Surveys, Military Donations (often simply referred to as Donations), Michigan Road Lines, Reserves, and various named **units**. The distribution of units other than Sections might not follow any particular pattern.

**NW NE SW** (northwest quarter of the northeast quarter of the southwest quarter)

This is the **quarter-call**, a shorthand way of describing a well's location by subdividing the section into successively smaller fractions (figure 3). The section may be subdivided into quarters once, twice or three times.

Describing is sometimes confusing because quarter calls are sometimes spoken in reverse order from right to left). It's best to avoid confusion as to which quarter contains which smaller quarters by simply inserting the words "of the" between each of the quarters. Thus, **NW NE SW** refers to a location in the **northwest quarter of the northeast quarter of the southwest quarter** (Figure 4).

**330 NL, 400 WL** (Read 330 feet from the north line and 400 feet from the west line).

The footage is the distance from the exterior line of the smallest quarter given in the quarter-call and the IGS always measures footage from the lines describing the smallest quarter in the description. Thus, in the example NW NE SW, "330 NL, 400 WL" is correct because the smallest quarter is NW. On the other hand, even though 330 SL, 260 EL would technically describe the same spot on the ground, IGS convention dictates that the north and west lines be used as the reference lines.

The center of the smallest quarter of a normal section (10 acres) is approximately 330 feet from its sides (the 10-acre quarter being 660 feet across). If the reported distance exceeds 660 feet from a line bordering a 10-acre quarter, then the using the 10-acre quarter in the description is incorrect and the location must be re-described. Thus, **669 NL, 400 WL, NW NW SW** should be described as **651 SL, 400 WL, SW NW SW** or the location should be described from a larger quarter—in this case, the description **669 NL, 400 WL, NW SW** would be permissible.

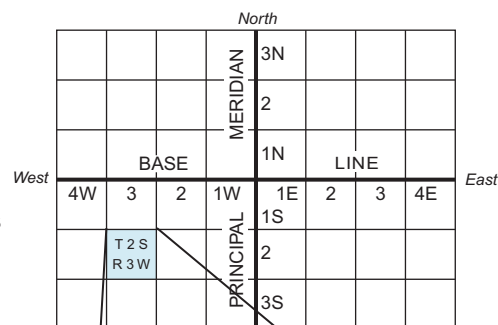


Figure 1. Township Grid

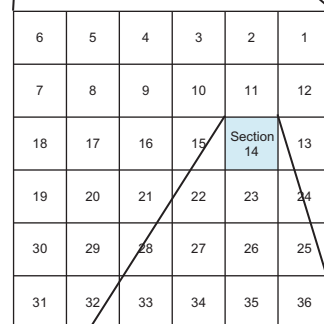


Figure 2. Layout of sections in normal township

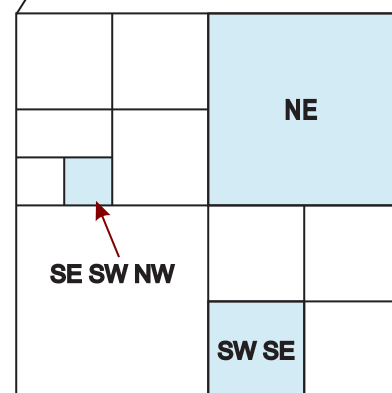


Figure 3. Section divided into 'quarters'

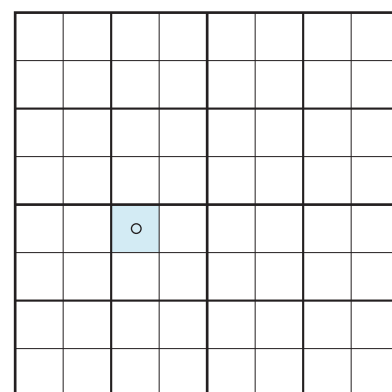


Figure 4. Well location in NW NE SW

In cases where the section has a non-normal shape, or where the location falls within some other type of land unit, footages are typically given from exterior lines of the unit.

If a 10-acre quarter description won't work, the location can be described using only two quarters, or only one quarter. For example: 660 NL, 660 EL, NE SW (when only two quarters are used, they are sometimes written: xx NE SW).

## Examples:

1600 NL, 1324 EL, NE Sec. 18: Distances measured from **NL** and **EL** of **section 18**.

1600 NWL, 1324 NEL, Don. 24: Distances measured from **northwest line** and **northeast line** of **Military Donation 24**.

## PDMS Usage

A number of topics covered in the (Petroleum Database Management System (PDMS) provide additional information about describing well locations.

Township and Range

Land Unit Types

Sections

Quarters

Artificial Townships