

Schwalm 1 (15-197-00120) T: 12S R: 11E S: 19  
Latitude: 38.9871487 Longitude: -96.2257398 Depth: 3431.0

| Depth | Stratigraphic Units |                          |          |       |        |               | Rock Color | Lithology<br>Rock Column | Remarks                                                                                                     |
|-------|---------------------|--------------------------|----------|-------|--------|---------------|------------|--------------------------|-------------------------------------------------------------------------------------------------------------|
|       | Members             | Formations               | Subgroup | Stage | Series | System        |            |                          |                                                                                                             |
| 2500  |                     |                          |          |       |        | Cambrian      |            |                          | 2500 Mississippi                                                                                            |
|       |                     |                          |          |       |        |               |            |                          | 2510 2535 Gray granular limestone dark gray shale                                                           |
|       |                     |                          |          |       |        |               |            |                          | 2535 2545 Hard sandy dolomite                                                                               |
| 2550  |                     |                          |          |       |        |               |            |                          | 2545 2551 Hard white                                                                                        |
|       |                     |                          |          |       |        |               |            |                          | 2551 2559 Sort gray coarsely crystalline limestone.                                                         |
|       |                     |                          |          |       |        |               |            |                          | 2559 2565 Soft gray and brown                                                                               |
|       |                     |                          |          |       |        |               |            |                          | 2565 2584 Hard white chert gray limestone.                                                                  |
|       |                     |                          |          |       |        |               |            |                          | 2584 2593 hard white chert gray dolomitic limestone                                                         |
| 2600  |                     |                          |          |       |        |               |            |                          | 2593 2610 buff colored dolomitic limestone chert                                                            |
|       |                     |                          |          |       |        |               |            |                          | 2610 2625 white coarsely crystalline limestone little dolomite                                              |
|       |                     |                          |          |       |        | Mississippian |            |                          | 2625 2637 hard white chert buff dolomitic limestone                                                         |
|       |                     |                          |          |       |        |               |            |                          | 2637 2648 Buff crystalline limestone partly dolomitic                                                       |
| 2650  |                     |                          |          |       |        |               |            |                          | 2648 2654 Buff crystalline                                                                                  |
|       |                     |                          |          |       |        |               |            |                          | 2654 2694 Hard white chert buff crystalline limestone                                                       |
|       |                     |                          |          |       |        |               |            |                          |                                                                                                             |
|       |                     |                          |          |       |        |               |            |                          |                                                                                                             |
| 2700  |                     |                          |          |       |        |               |            |                          | 2694 2699 Hard white chert and                                                                              |
|       |                     |                          |          |       |        |               |            |                          | 2699 2705 white and brown                                                                                   |
|       |                     |                          |          |       |        |               |            |                          | 2705 2710 white crystalline                                                                                 |
|       |                     |                          |          |       |        |               |            |                          | 2710 2735 white crystalline limestone white chert.                                                          |
|       |                     |                          |          |       |        | Devonian      |            |                          | 2735 2742 hard dark gray shale                                                                              |
| 2750  |                     |                          |          |       |        |               |            |                          | 2742 2756 white crystalline limestone                                                                       |
|       |                     |                          |          |       |        |               |            |                          | 2756 2763 Brown dolomitic                                                                                   |
|       |                     |                          |          |       |        |               |            |                          | 2763 2775 soft white earthy limestone                                                                       |
|       |                     |                          |          |       |        |               |            |                          | 2775 2800 soft white and buff earthy limestone 2800 Kinderhook Shale                                        |
| 2800  |                     | Chattanooga Shale        |          |       |        |               |            |                          | 2800 2810 dark gray shale soft white limestone                                                              |
|       |                     |                          |          |       |        |               |            |                          | 2810 2832 dark gray shale                                                                                   |
|       |                     |                          |          |       |        |               |            |                          | 2832 2859 greenish gray to dark gray shale                                                                  |
| 2850  |                     |                          |          |       |        |               |            |                          | 2859 2865 greenish gray shale                                                                               |
|       |                     |                          |          |       |        |               |            |                          | 2865 2875 greenish gray shale soft white limestone                                                          |
|       |                     |                          |          |       |        | Paleozoic     |            |                          | 2875 2990 soft greenish gray shale                                                                          |
| 2900  |                     |                          |          |       |        |               |            |                          |                                                                                                             |
|       |                     |                          |          |       |        |               |            |                          |                                                                                                             |
|       |                     |                          |          |       |        |               |            |                          |                                                                                                             |
| 2950  |                     |                          |          |       |        |               |            |                          |                                                                                                             |
|       |                     |                          |          |       |        |               |            |                          |                                                                                                             |
|       |                     |                          |          |       |        |               |            |                          |                                                                                                             |
|       |                     |                          |          |       |        |               |            |                          |                                                                                                             |
| 3000  |                     |                          |          |       |        |               |            |                          | 2995 Hunton                                                                                                 |
|       |                     |                          |          |       |        |               |            |                          | 3015 3020 soft gray fissile                                                                                 |
|       |                     |                          |          |       |        |               |            |                          | 3020 3031 brown coarsely crystalline dolomite                                                               |
|       |                     |                          |          |       |        | Silurian      |            |                          | 3031 3040 white finely crystalline limestone white                                                          |
| 3050  |                     |                          |          |       |        |               |            |                          | 3040 3053 yellowish brown coarsely crystalline dolomite white earthy chert                                  |
|       |                     |                          |          |       |        |               |            |                          | 3053 3062 yellowish brown coarsely crystalline dolomite                                                     |
|       |                     |                          |          |       |        |               |            |                          | 3062 3064 white coarsely                                                                                    |
|       |                     |                          |          |       |        |               |            |                          |                                                                                                             |
| 3100  |                     |                          |          |       |        |               |            |                          | 3102 3119 white coarsely crystalline dolomite medium coarse angular sand                                    |
|       |                     |                          |          |       |        |               |            |                          | 3119 3125 white coarsely                                                                                    |
|       |                     |                          |          |       |        |               |            |                          | 3125 3155 yellowish coarsely crystalline dolomite medium coarse angular to rounded sand white earthy chert. |
| 3150  |                     |                          |          |       |        |               |            |                          | 3155 3172 white coarsely crystalline dolomite.                                                              |
|       |                     |                          |          |       |        |               |            |                          | 3172 3185 white to yellow coarsely crystalline dolomite white earthy chert                                  |
|       |                     |                          |          |       |        | Upper         |            |                          | 3185 3207 yellowish brown coarsely crystalline dolomite                                                     |
| 3200  |                     | Maquoketa (Sylvan) Shale |          |       |        |               |            |                          | 3207 3212 yellowish brown 3212 Sylvan Shale                                                                 |
|       |                     |                          |          |       |        |               |            |                          | 3238 3282 soft gray fissile shale                                                                           |
| 3250  |                     |                          |          |       |        |               |            |                          |                                                                                                             |
|       |                     |                          |          |       |        |               |            |                          | 3282 Viola Limestone                                                                                        |
| 3300  |                     | Mela Limestone           |          |       |        |               |            |                          | 3300 3307 buff colored very                                                                                 |
|       |                     |                          |          |       |        |               |            |                          | 3307 3319 buff colored very coarsely crystalline dolomite brown translucent chert soft                      |
|       |                     |                          |          |       |        |               |            |                          | 3319 3328 brown translucent chert brown crystalline                                                         |
|       |                     |                          |          |       |        |               |            |                          | 3328 3335 brown coarsely                                                                                    |
| 3350  |                     |                          |          |       |        |               |            |                          | 3335 3340 brown and yellow 3340 3352 soft gray fissile shale                                                |
|       |                     |                          |          |       |        | Middle        |            |                          | 3352 3359 yellowish white very                                                                              |
|       |                     |                          |          |       |        |               |            |                          | 3359 3370 yellowish and brown coarsely crystalline dolomite                                                 |
|       |                     |                          |          |       |        |               |            |                          | 3370 3375 brown coarsely                                                                                    |
|       |                     |                          |          |       |        |               |            |                          | 3375 3389 brown coarsely crystalline dolomite gray fissile shale                                            |
|       |                     |                          |          |       |        |               |            |                          | 3389 3396 soft gray fissile                                                                                 |
| 3400  |                     |                          |          |       |        |               |            |                          | 3396 3397 brown coarsely 3400 Simpson                                                                       |
|       |                     |                          |          |       |        |               |            |                          | 3406 3410 Brown coarsely                                                                                    |
|       |                     |                          |          |       |        |               |            |                          | 3410 3425 white fine angular to rounded and frosted sand                                                    |
|       |                     |                          |          |       |        |               |            |                          | 3425 3431 white fine angular                                                                                |

Primary Rock Lithology



Shale



Sand, Sandstone



Chert



Limestone



Limestone Dolomite

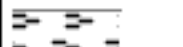


Dolomite



Quartz

Secondary Rock Lithology



Shaly, shale



Sandy, sand



Cherty, chert



Calcareous



Dolomitic