

T.26 N.1W Sec.24

**WELL LOCATION:** Moorings North  
**GEOLOGIST:** Susan Erlenwein  
**DATE:** 03/28/05  
**APPROXIMATE SURFACE ELEVATION:** 1334 feet  
**WATER TABLE DEPTH:** 13 feet  
**TOTAL DEPTH:** 46 feet

| TOP Feet | BASE Feet | LITHOLOGY            | DESCRIPTION                                                                                                                                                                       |
|----------|-----------|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0        | 3.5       | ROAD                 | Asphalt and crushed lime                                                                                                                                                          |
| 3.5      | 7         | CLAY                 | Clay; black; dense                                                                                                                                                                |
| 7        | 8         | CLAY                 | Clay; gray; dense                                                                                                                                                                 |
| 8        | 10        | SILTY CLAY           | Clay; tan to gray; slightly silty; inclusions of gravel; tan; fine grain; sub rounded                                                                                             |
| 10       | 13        | SILTY SAND           | Silty silica sand; tan; fine grain; well rounded; well sorted                                                                                                                     |
| 13       | 15        | SILTY SAND           | Silty silica sand; white to light tan; fine grain; well rounded; well sorted                                                                                                      |
| 15       | 17        | SAND                 | Silica sand; tan; fine grain; sub to well rounded; well sorted                                                                                                                    |
| 17       | 19        | SAND                 | Silica sand; tan to red; fine to coarse grain; sub to well rounded; poorly sorted                                                                                                 |
| 19       | 20        | GRAVEL               | Gravel; white, tan and red; fine grain; sub rounded                                                                                                                               |
| 20       | 25        | SAND & GRAVEL        | Silica sand; tan; fine to coarse grain; sub to well rounded. Mixed with gravel; red; sub rounded; poorly sorted                                                                   |
| 25       | 27        | SAND & GRAVEL        | Silica sand; clear to tan; coarse grain; sub rounded. Mixed with gravel; tan; fine grain; sub rounded                                                                             |
| 27       | 30        | SAND & GRAVEL        | Silica sand; tan; coarse grain; sub rounded. Mixed with gravel; tan, dark brown and red; coarse grain; sub rounded                                                                |
| 30       | 35        | SAND & GRAVEL        | Silica sand; clear to tan; coarse grain; sub rounded. Mixed with gravel; tan, brown and red; fine to coarse grain; sub rounded; poorly sorted                                     |
| 35       | 40        | SAND & GRAVEL        | Silica sand; clear to tan; coarse grain; sub rounded. Mixed with gravel; clear to tan, some red and yellow; fine grain; sub rounded                                               |
| 40       | 43        | SAND & GRAVEL        | Silica sand; clear to tan with some red; coarse grain; sub to well rounded. Mixed with gravel; tan and red; fine grain; sub to well rounded                                       |
| 43       | 46        | SAND & GRAVEL & CLAY | Silica and feldspar sand; clear, tan and pink; coarse grain; sub to well rounded. Mixed with gravel; tan and red; fine grain; sub to well rounded. Inclusions of clay; tan; dense |

Table 2. Name, location, and characteristics of the monitoring wells. The screened interval for all wells is the bottom 10 ft.

| Well name             | USGS location and well number * | Altitude of land surface, ft | Well depth, ft below land surface | Distance from sand pit, ft |
|-----------------------|---------------------------------|------------------------------|-----------------------------------|----------------------------|
| Barefoot Bay N        | 26S 01W 34CCDD02                | 1327                         | 40                                | 175                        |
| Barefoot Bay SE       | 27S 01W 03DABA01                | 1325                         | 40                                | 315                        |
| Barefoot Bay SW       | 24S 01W 03ACCC01                | 1330                         | 42.5                              | 168                        |
| Ridge Port N          | 26S 01W 28DDDD01                | 1333                         | 17.5                              | 596                        |
| Ridge Port SE         | 26S 01W 34CCDD01                | 1327                         | 17.5                              | 61                         |
| Ridge Port SW         | 26S 01W 34CCD 01                | 1330                         | 19                                | 786                        |
| Moorings Well N       | 26S 01W 24BBAA01                | 1338                         | 46                                | 1099                       |
| Moorings Well SE      | 26S 01W 25ADBA01                | 1331                         | 47                                | 530                        |
| Moorings Well SW      | 26S 01W 25ADCC01                | 1331                         | 47.5                              | 730                        |
| Cropland Well N       | 26S 01W 23BAAB01                | 1339                         | 46.5                              | 637                        |
| Cropland Well SE      | 26S 01W 23AACD01                | 1338                         | 47.5                              | 484                        |
| Cropland Well SW      | 26S 01W 23BCAA01                | 1337                         | 45.3                              | 181                        |
| Kingston Cove Well N  | 28S 01E 05BCDB01                | 1289                         | 37.9                              | 560                        |
| Kingston Cove Well SE | 28S 01E 05CDAB01                | 1286                         | 38.6                              | 273                        |
| Kingston Cove Well SW | 28S 01E 05CDBB0                 | 1287                         | 39                                | 152                        |
| Pine Bay Well N       | 28S 01E 34BBCC01                | 1255                         | 25                                | 863                        |
| Pine Bay Well SE      | 28S 01E 34BDDBA01               | 1258                         | 27                                | 380                        |
| Pine Bay Well SW      | 28S 01E 34CAAA01                | 1257                         | 30                                | 571                        |

\* Township, Range, Section, quarter sections from largest to smallest (A = NE, B = NW, C = SW, D = SE), well number

developed, with roads occupying the rest of the shoreline. A thin band of trees extends along the shore between the shoreline and the roads. The age of development around the pit is the oldest of any of the five developed sand pits that were studied. The pit lake is used for recreation, including for motorized boats in spite of its relatively small size. Known contamination of ground water by volatile organic compounds (VOCs) from a dry cleaning operation lies about 1,500 ft to the southwest of the Kingston Cove pit (SCDER, 2005).

The other pit site (Pine Bay Estates) in southern Wichita is in a residential area. The residential lot size of Pine Bay Estates is generally larger than in the residential developments around the other pits studied. The residences use on-site septic systems (SCDER, 2005). A golf course lies along the east and northeast part of the pit and on a peninsula that extends from the east into the middle of the pit. The 52% of the shoreline developed around the pit in Pine Bay Estates is split approximately equally between the residential and golf course use. The location lies within an old saltwater plume caused by upward leaks of oil brine in an over-pressured zone used for enhanced recovery of oil. There is no recreational use of the water in the pit.

The DWR contacted the U.S. Bureau of Reclamation (USBR), which agreed to drill and install 18 monitoring wells at the six pit sites. The USBR was asked to drill one monitoring well