**Soil Quality Evaluation**

**Equipment Required:**

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| --- | --- |
| * Shovel, trowels, (post-hole digger optional) * Wire (coat hanger) * Pencil * Tape measure or or ruler | * Uncoated rulers, or dowel rods for placing in ground and measure where water stops * 1 gallon water for each site * Soil test kit and instructions * Plot flags (Local utility boards have these for when homeowners need them to mark before they dig, or you can purchase cheaply from a home supply store.) |

**General Instructions:**

* Go to site you want to rate and look around the entire site.
* Select a typical spot and dig a hole approximately 1 to 2 feet deep. This hole will be used for the examination. Good name for you maybe more play how are you
* Dig another hole 12 inches deep nearby. This hole will be used to see how fast water moves through the soil
* Complete the field notes and rate each indicator placing a circle around or checking the appropriate box.

**FIELD NOTES**

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| --- | --- |
| **Name of Evaluator(s):** |  |
| **Date of Evaluation:** |  |
| **Location of Site:** |  |
| **Soil Mapping Unit:** |  |
| **Weather Conditions:** |  |
| **Current use of site:** |  |

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| --- | --- | --- | --- |
| **Soil Chemical Indicator** | **Poor** | **Tolerable** | **Best** |
| Soil reaction (pH) | <5.0 | 5.5 – 6.0 | 6.5 – 7.0 |
| Soil nitrate (indicator of both fertility and pollution) | > 50 ppm pollution potential | < 10 ppm fertility problems | 10 – 50 ppm |
| Soil phosphate (indictor of both fertility & pollution) | > 30 ppm pollution potential | < 5 ppm fertility problems | 5 – 30 ppm |
| **Soil Chemical Indicator** | **Poor** | **Tolerable** | **Best** |
| Hilliness of site | Very hilly (steep) | Some slope | Level or nearly level |
| Direction the slope faces | North | East or West | South |
| Runoff and soil erosion | Evident gullies in field | Small rills and channels through field | No evident soil washing from site |
| Sun exposure throughout the day | Shady, very little exposure | Sun is blocked sometimes | Mostly sunny |

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| **Soil Chemical Indicator** | **Poor** | **Tolerable** | **Best** |
| Cracks on soil surface in summer | Many cracks | Occasional thin cracks | No cracks |
| How do existing plants grow? Compare same kind of plant. | Plants are dead or scraggly | Plant color and size are different | Plants look healthy |
| Smell of soil | Oily, gasoline, rotten eggs, bad or strange | No smell | Fresh, earthy |
| How hard is it to dig a hole 2 feet deep? | Not possible | Moderately difficult | Easy |
| Try to insert a plot flag or coat hanger into soil surface two days after rainfall during the growing season | Wire bends or cannot be inserted | Wire can be pushed in with pressure | Wire goes in soil easily with fingers |
| Surface organic material | No visible roots or residue | Some residue | Lots of roots/residue many stages of decomposition |
| Depth of soil  Are there rocks? | Less than 1 foot | Between 1 – 2 feet | More than 2 feet |
| Depth of topsoil layer | 0 – 2 inches | 2 – 5 inches | 5+ inches |
| Color of topsoil layer  --paint sample chips--- | Value > 4  Gray | Value 4  Red/red brown | Value ≤ 4, chroma ≤2  Dark brown |
| Moisture of soil two days after heavy rain | Soil is very dry or very wet | Soil is somewhat dry or muddy | Soil is moist but not muddy |
| How quickly water drains in 1 foot hole during the growing season | Water stays in hole and doesn’t drain in 15 minutes | Water drains, but less than 1 inch in 15 min. | Water enters soil quickly, more than 1 inch in 15 min. |
| Texture of soil—USE GUIDE TO SOIL TEXTURE BY FEEL | Sand, loamy sand, sandy clay, silty clay, or clay | Clay loam, silty clay loam, or sandy clay loam | Sandy loam, loam or silt loam |
| How do moist particles hold? Crush ped between your thumb & finger | Soil is hard and very difficult to crush | Soil somewhat hard to crush | Soil crumbles easily with fingers |
| Roots in the top 12 inches of soil | None | Some, growing across not down | Many roots growing down |
| Worms and other bugs in soil | None | A few | Many |
| Stones or rocks in soil | Too many | Some | None |
| Debris in soil (bricks, construction materials, concrete, glass, etc. | Too much to dig around | A little, doesn’t interfere with digging | None |
| Rotten stumps, old trees in the soil | Lots of stumps and trees | A few small pieces | none |