The purpose of this activity is to use the chemical data on page two to evaluate the conditions of the **Wolf Creek** watershed. Attempt to answer the questions on the next page and discuss them as a group.



**Wolfpen Run**

**Conner’s Run**

**Severna Run**

**UNT of Wolf Creek**

**Sandy Creek**

**Roaring Fork**

**Joe’s Run**

**Wolf Creek**

|  |  |
| --- | --- |
| Land use in theWolf Creek watershed | **Assumptions**: Agriculture consists of cropland and pasturelands; cropland is more prevalent; mining consists of active and abandoned mines; most of the mining in the watershed has been abandoned. You can assume that the areas of the map not having a land-use designation are mostly forested and un-disturbed except for some single-family homes (black) scattered throughout the watershed. There are also roads in the watershed indicated by either brown (paved) or gray (un-paved) lines. |
|  | Agriculture |
|  | Mining |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|

|  |  |  |
| --- | --- | --- |
| Analysis | Sample #**117** | Result |
| pH | 4.2 |
| Nitrate | ND |
| Alkalinity | 0 |
| Dissolved oxygen | 5.2 |
| Conductivity | 800 |

|  |  |  |
| --- | --- | --- |
| Analysis | Sample #**1423** | Result |
| pH | 7.6 |
| Nitrate | 2.0 |
| Alkalinity | 20 |
| Dissolved oxygen | 5.5 |
| Conductivity | 300 |

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|  |  |  |
| --- | --- | --- |
| Analysis | Sample #**705** | Result |
| pH | 6.4 |
| Nitrate | 1.2 |
| Alkalinity | 20 |
| Dissolved oxygen | 6.0 |
| Conductivity | 450 |

|  |  |  |
| --- | --- | --- |
| Analysis | Sample #**329** | Result |
| pH | 8.1 |
| Nitrate | ND |
| Alkalinity | 40 |
| Dissolved oxygen | 8.6 |
| Conductivity | 200 |

 | **Sample stations**: Below are the site **numbers** and descriptions for those shown on the map.  |
| **1** | Wolf Creek mainstem downstream from Joe’s Run |
| **2** | Roaring Fork (station 1) just upstream of the confluence with Wolf Creek and below most of the agricultural practices |
| **3** | Roaring Fork (station 2) farther upstream on Roaring Fork above the agricultural practices |
| **4** | Severna Run downstream from mining activities  |

Based upon your analysis of the samples provided, match your sample # with its location. Enter the results in the table below. Note: The sample number refers to the entire suite of samples for a given location.

|  |  |  |
| --- | --- | --- |
| Sample # | Site # | Site description |
|  | 1 | Wolf Creek mainstem downstream from Joe’s Run |
|  | 2 | Roaring Fork (station 1) just upstream of the confluence with Wolf Creek and below most of the agricultural practices |
|  | 3 | Roaring Fork (station 2) farther upstream on Roaring Fork above the agricultural practices |
|  | 4 | Severna Run downstream from mining activities |

**Other questions to consider**:

|  |  |
| --- | --- |
| Would you choose different sites?  |  |
| Would additional sites be necessary?  |  |
|  |
| If you choose additional sites, explain your reasons why.  |
|  |
| How many would you add and where would you place them?  |
|  |

Save this document, then email it to: timothy.d.craddock@wv.gov for an evaluation.