MT DEQ State Superfund Unit
FAQ: How do I demonstrate that borrow material is clean?
June 5, 2023

Background

Borrow material (soil, topsoil, backfill, pit run, gravel, etc.) is often needed during remedial actions at State Superfund Unit (SSU) facilities (CECRA, WQA, VCRA) to fill excavations and reclaim disturbed areas, and may also be needed for logistical/operational reasons (parking areas, road base, etc.). It is important to demonstrate that the imported material does not contain contaminants at concentrations greater than applicable screening levels or cleanup levels. It is important to obtain DEQ approval of all proposed borrow material before it is used at a facility. Assessment of borrow materials should begin early in the project, and prior to starting field work. Following are process steps to assist with demonstrating that borrow material meets applicable screening levels or cleanup levels. These steps are not intended to determine if borrow material is suitable for engineering design or vegetation purposes. Depending on the project and the specific intended use of the imported material, additional parameters may need to be assessed.

Step 1: **Determine which analyses are needed to test the borrow source.**

- At a minimum, analyze borrow material for the eight Resource Conservation Recovery Act (RCRA) metals (arsenic, barium, cadmium, chromium, lead, selenium, silver, and mercury) as a total metals analysis. See Step 2 below for additional information regarding sieving and dry weight results. Depending on the borrow source location, additional analyses may be needed. Research DEQ's known contaminated sites electronic databases to determine if the proposed borrow source is at or adjacent to a contaminated site in the databases. If the proposed borrow source is at or adjacent to a contaminated site in the databases, additional analyses may be necessary for contaminants known to be present at the listed site. To research DEQ's electronic databases, please visit Discover DEQ's Data (https://discover-mtdeq.hub.arcgis.com/) and use the Interactive Map option. At a minimum, click on the following GIS map layers (see icons in the upper right corner of the map, with names that appear once you hover over them) to "turn them on" and search for sites at or adjacent to the borrow source:

  - Under "Cleanup and Remediation" (hand-holding-a-plant icon, see Figure 1):
    - Montana Abandoned Mine Problems
    - Montana Abandoned Mine Areas
    - Montana Petroleum Releases
    - Montana State Superfund (SSU) ACGP Facilities
    - Montana State Superfund (SSU) CECRA Facilities
    - Montana State Superfund (SSU) VCRA Facilities
    - Montana State Superfund (SSU) WQA Facilities
    - Montana State Superfund (SSU) Facility Areas
    - Montana DEQ Institutional Controls
    - Montana Federal Superfund Project Boundaries
  - Under "Waste Management" (dump truck icon, see Figure 2):
    - Montana Solid Waste Sites
    - Montana Septic Tank Pumper Disposal Site
    - Montana Junk Vehicle Sites
    - Montana Hazardous Waste Handlers
- You may also/instead submit a request via DEQ's Public Records Center (also known as GovQA) to search for contaminated sites near the proposed borrow location. If using the GovQA system, it is important to provide the latitude and longitude and/or a street address of the borrow location. When using GovQA, please plan ahead as it may take two weeks or more for DEQ to respond.
- You may wish to verify your findings directly with the DEQ SSU project officer assigned to the facility.
- If the database search suggests the borrow material may contain contaminants in addition to metals, work with the DEQ SSU project officer to determine which laboratory analyses are appropriate. The results of the database search and proposed laboratory analyses should be documented in writing (via email or in a work plan specific to the facility) and submitted to the DEQ's SSU project officer for approval.
  - Example 1: If there is a leaking underground storage tank near the borrow source, records from the tank release should be reviewed and discussed with DEQ's SSU project officer to determine whether the borrow material should be sampled for petroleum hydrocarbons.
  - Example 2: If the borrow source is within a federal or state superfund facility area, contact DEQ's SSU project officer for assistance in determining what contaminants are present at and near the borrow source.

- If the original borrow source location is not known (for example, a pile of topsoil that is from various sources), comprehensive testing of the material will be needed before DEQ would approve it for use. Such comprehensive testing would likely include analysis of the following: the eight RCRA metals (as described above), total petroleum hydrocarbon screen, volatile petroleum hydrocarbons, volatile organic compounds, semi-volatile organic compounds, pesticides and herbicides, and other analyses that may be more site-specific like dioxins-furans.
- Depending on the project objectives, additional analyses for borrow source material may be needed (i.e., to support engineering design parameters and/or to determine if material will support vegetation).

Step 2: **Sample the borrow material.**

Generally, at least one 5-point composite sample needs to be collected for every 400 cubic yards of borrow material. If large volumes of borrow material are needed from the same source, you may propose an alternative sample frequency for DEQ approval.

Samples collected for metals should be sieved according to SSU's soil sieving FAQ, which can be found on the SSU Website under "Frequently Asked Questions" in the dropdown tab for "Soil." Generally, samples for metals should be sieved to a No. 100 (<150 um) particle size. If other contaminant analyses are required, the soil for those samples should not be sieved.

If the proposed borrow material is crushed rock, pit run, washed gravel, or some other larger fill material, sampling the fines from the same source material will generally be acceptable for characterization.

Typically, borrow material should be sampled in the same manner as any soil sampling, and should follow an approved standard operating procedure or sampling plan, and include proper chain-of-custody. Sample results should be reported on a dry weight basis.

Questions regarding sampling should be coordinated with the DEQ SSU project officer for the facility.

Step 3: **Validate the borrow material sample results.** Use the SSU Data Validation Guidelines or an equivalent data validation report to validate the sample results.

Step 4: Compare borrow material sample results to appropriate screening levels.

- If DEQ-approved site-specific cleanup levels (SSCLs) are available, the SSCLs should be used to evaluate the borrow material.
- If SSCLs are not available, please follow DEQ's SSU Soil Screening Flowchart to determine appropriate screening levels. Note - For metals other than lead, you may use the higher of either the Montana Background Threshold Value (BTV) or the EPA Regional Screening Level. For lead, please use DEQ's lead screening levels identified in the Soil Screening Flowchart, which are taken from DEQ's 2021 Lead Screening Memo.
- If you are unsure about screening levels, please work with the DEQ-SSU project officer to verify appropriate screening levels are being used.

Step 5: **Submit the borrow material approval request to DEQ.** DEQ approval of the borrow material is necessary prior to moving the material to the facility. Please include the following information in the request:

- A brief cover letter or email. The cover letter should include a brief description of the project, the location and type of borrow material, the results of the database search, and a discussion of other pertinent information. The cover letter should also include a brief statement regarding the quality of the data. If any of the data has been qualified, the cover letter should discuss the qualifications and whether the data usability is affected.
- A table that compares the borrow material results to applicable screening levels. The table should include any data qualifier flags from the data validation process.
- The laboratory data package.
- The data validation report.
- A figure showing the location of the borrow source and potentially contaminated sites at or near the source. This figure may be a screenshot from the DEQ GIS mapping system, similar to the examples provided below.

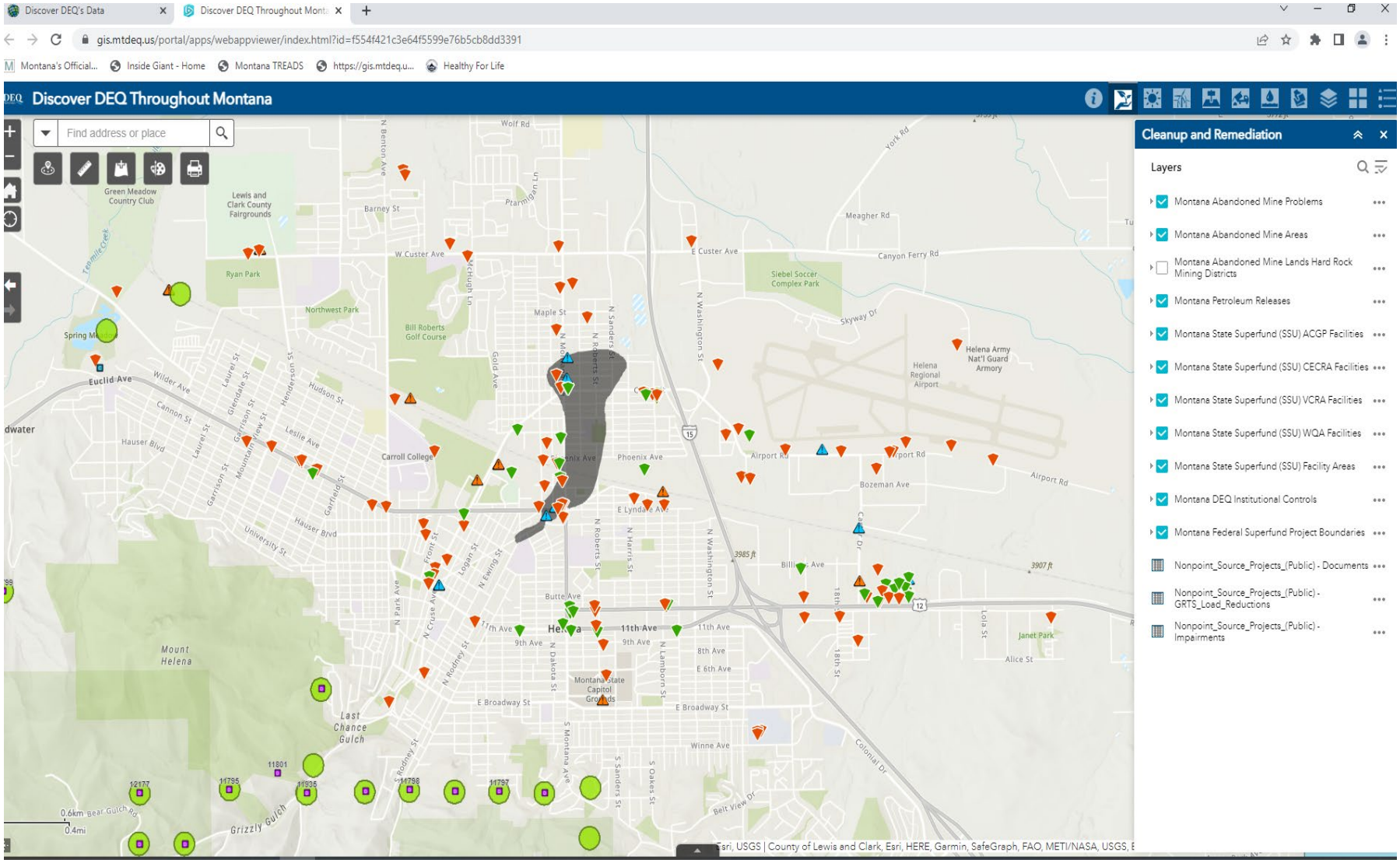

Figure 1 – Screenshot example of cleanup and remediation sites.

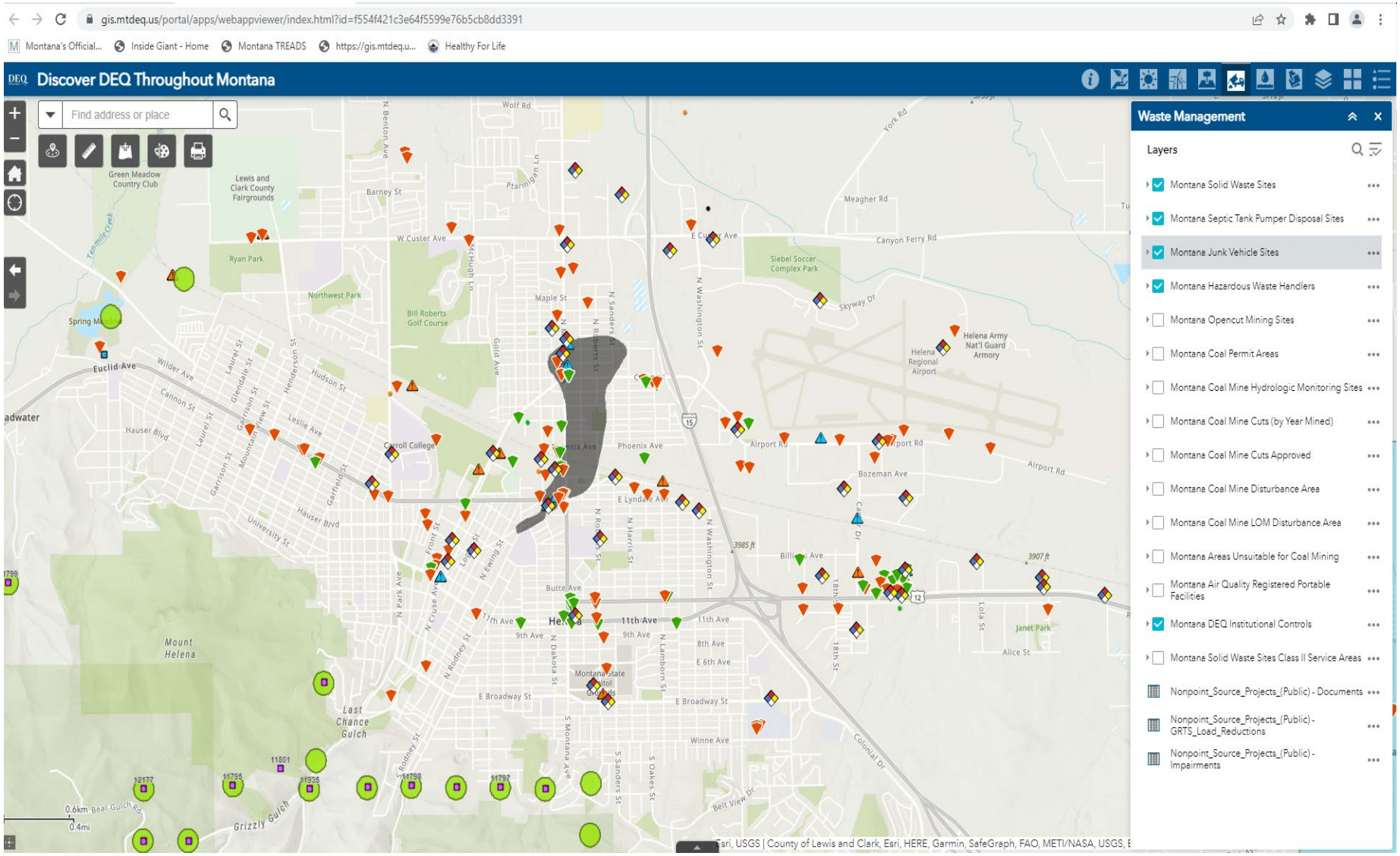

Figure 2 – Screenshot example of waste management sites.