Effects of mine waste materials in the north-central Mojave desert

A Data Management Plan created using DMPTool

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Template: National Science Foundation (NSF)

Last modified: 09-16-2016

Copyright information:

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Types of data

- Physical samples
    - Bulk samples of different media including mine tailings, waste rock, streambed sediments, and background materials. All sample stored in borosilicate glass jars with Teflon lids.
    - Streambed water samples stored in HDPE bottles.
    - Field notes about information of bulk samples and water samples
- Data of samples
    - Data about the bulk samples in XLS/CSV
    - Data about the water samples in XLS/CSV
    - Scanned images of field notes in TIFF
- Lab data
    - Lab reports in DOC/PDF(PDF/A)
    - Experiment data in XLS/CSV
    - Images in TIFF
- Geochemistry modeling software tools
    - Software program code in EXE
- Scholarly works: electronic copies of conference presentations and pre-prints of published articles in PDF(PDF/A)
- Lesson materials:
    - Lesson plans developed by public school teachers in PDF(PDF/A)
    - Audio/video in WAV

Data and metadata standards

We will register all our physical samples with the System for Earth Sample Registration (SESAR) [http://www.geosamples.org/]. Then, every sample will have an International GEO Sample Number (IGSN) [http://www.geosamples.org/aboutigsn]. The documentation of IGSN metadata can be found at [http://trac.gfz-potsdam.de/igsn/wiki/WikiStart]. Data of samples will be prepared according to the IGSN metadata fields to make the sample registration straightforward. Field notes template will be developed at the beginning of the project to include all necessary background information fields that would help develop metadata for samples during the project.

Lab data spreadsheets will be developed according to the Geochemistry Data Templates designed by Integrated Earth Data Application (IDEA)'s EarthChem Library [http://www.earthchem.org/data/templates] to include the recommended sheet structure design and to use the standard EarthChem controlled vocabulares measured for parameter, experiment method, mineral, and variable unit. X-Ray mapping images will be prepared with required and optional metadata fields as specified by the IDEA's MediaBank [http://media.marine-geo.org/contribute]. Documentation of geochemistry modeling tools and codes will be prepared with necessary notes and comments to make the replication of the modeling possible. When deposited into the EarthChem Library [http://www.earthchem.org/library/submit] at the end of our project, the lab data and the software code will be submitted with the library's cataloging metadata, as defined by the DataCite metadata kernel [http://schema.datacite.org/].

Policies for access and sharing

The research data and software code will be accessible to the PI and other researchers involved during the project. Three copies will be made for the data and software code; the first copy will be stored on the lab computer, the second copy will be stored on the network server which the university's IT department manages, and the third copy will be stored on an external hard drive which is kept at the PI's residence (away from the office and lab). Once the project is finished, the datasets and software code will be deposited into the IEDA EarthChem Library and will be made accessible publicly and freely.

Policies and provisions for re-use, re-distribution

The datasets and software code will be published by IEDA under the Creative Common License BY-NC-SA 3.0. [http://creativecommons.org/licenses/by-nc-sa/3.0/]. The research data should be cited in the format of Creator (PublicationYear): Title. Publisher. Identifier. IEDA will have Digital Object Identifiers (DOIs) assigned to the datasets.

Plans for archiving and preservation of access

To increase access to the research outcome from this project, the PI will deposit the data and related software code into the IEDA EarthChem Library [http://www.earthchem.org/library], an online data repository that archives and publishes data and other related digital artefacts from geosciences research. The physical samples will be stored in a secure, locked cabinet and made available for examination for at least 7 years after the project completion. The file formats of the datasets will be converted to preservation formats (CSV, PDF(PDF/A), TIFF, WAV).

Conference materials, lesson plan and publications will be deposited in an institutional repository for open access.

Software code will be deposted in github.