Screening Level Risk Assessment of Spent Catalyst Release from Martinez Refining Company

June 8, 2023

PROJECT BACKGROUND

- Spent catalyst dust released on November 24-25, 2022, from Fluid Catalytic Cracker Unit, Martinez Refining Company facility
- Physical evidence of the release observed and reported by nearby community members as white powder deposited on surfaces
- County conducted analytical testing of dust and determined it to be consistent with spent catalyst
- Plume Modeling by BAAQMD as requested by Contra Costa Health to guide soil testing

Soil Sampling and Screening Level Risk Assessment

Soil Sampling

- Soil samples were collected at 14 locations based on plume modeling and community input
- Laboratory analysis conducted for 15 metals found in spent catalyst sample

Risk Assessment Objectives and Scope

- Provide community with an understanding of potential risks posed by chronic exposure to spent catalyst dust, which may be present in surface soil.
- Final report will identify whether catalyst dust presents a long term risk to human health and the environment and provides guidance on next steps

Soil Sampling Locations

Data Evaluation

Compared Soil Data to:

- Expected range of regional background soil levels
- Protective health standards for residential soil

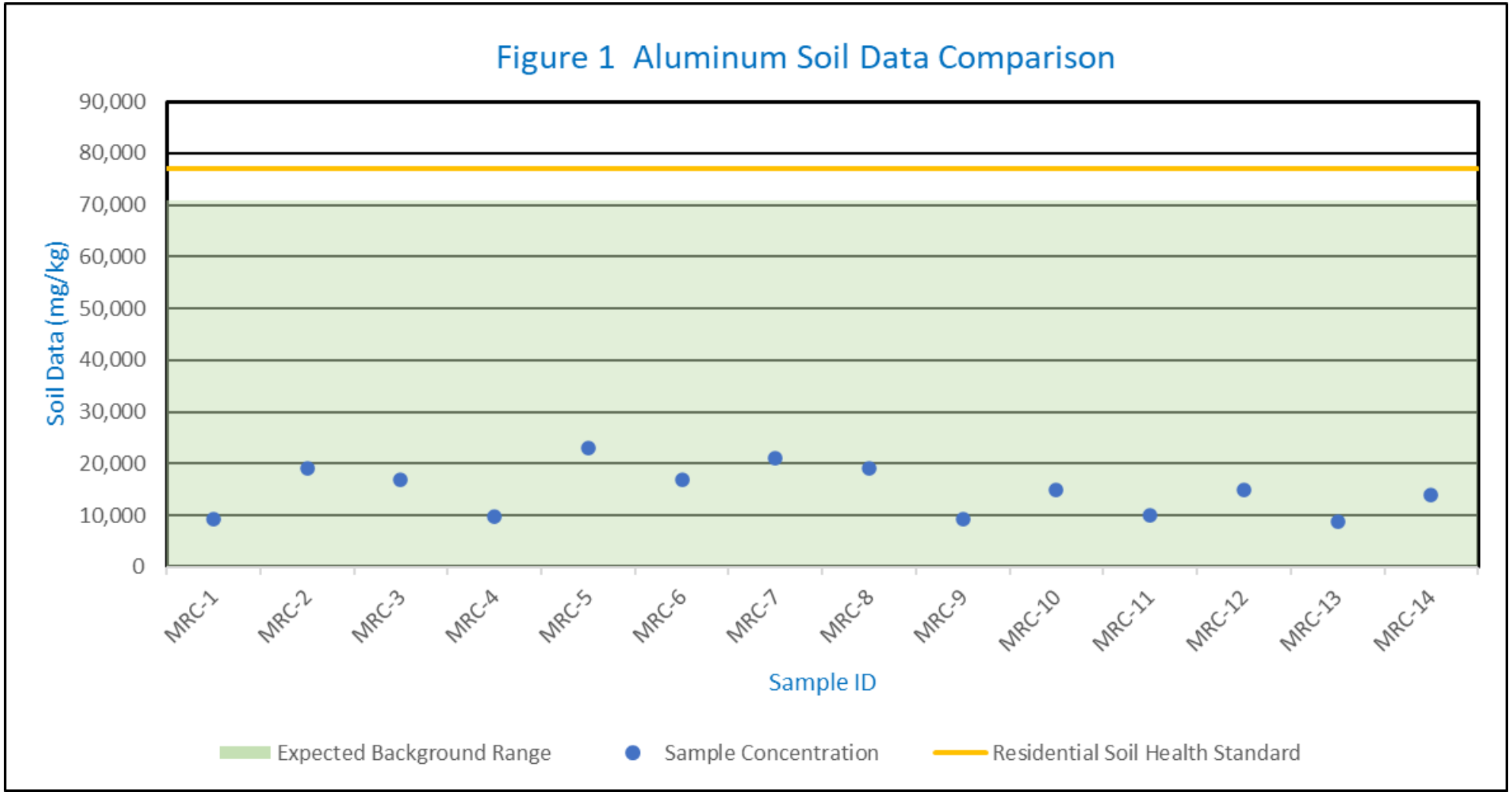
Definitions

- **Background** – the naturally occurring or other non-site related levels of chemicals (cars, household use of chemicals)
- **Geology**: metals are primarily present simply due to geology, and CA is known to have metals in proportions to regional/local geology
- **Health Standards** – California-specific screening levels for protection of residential land use

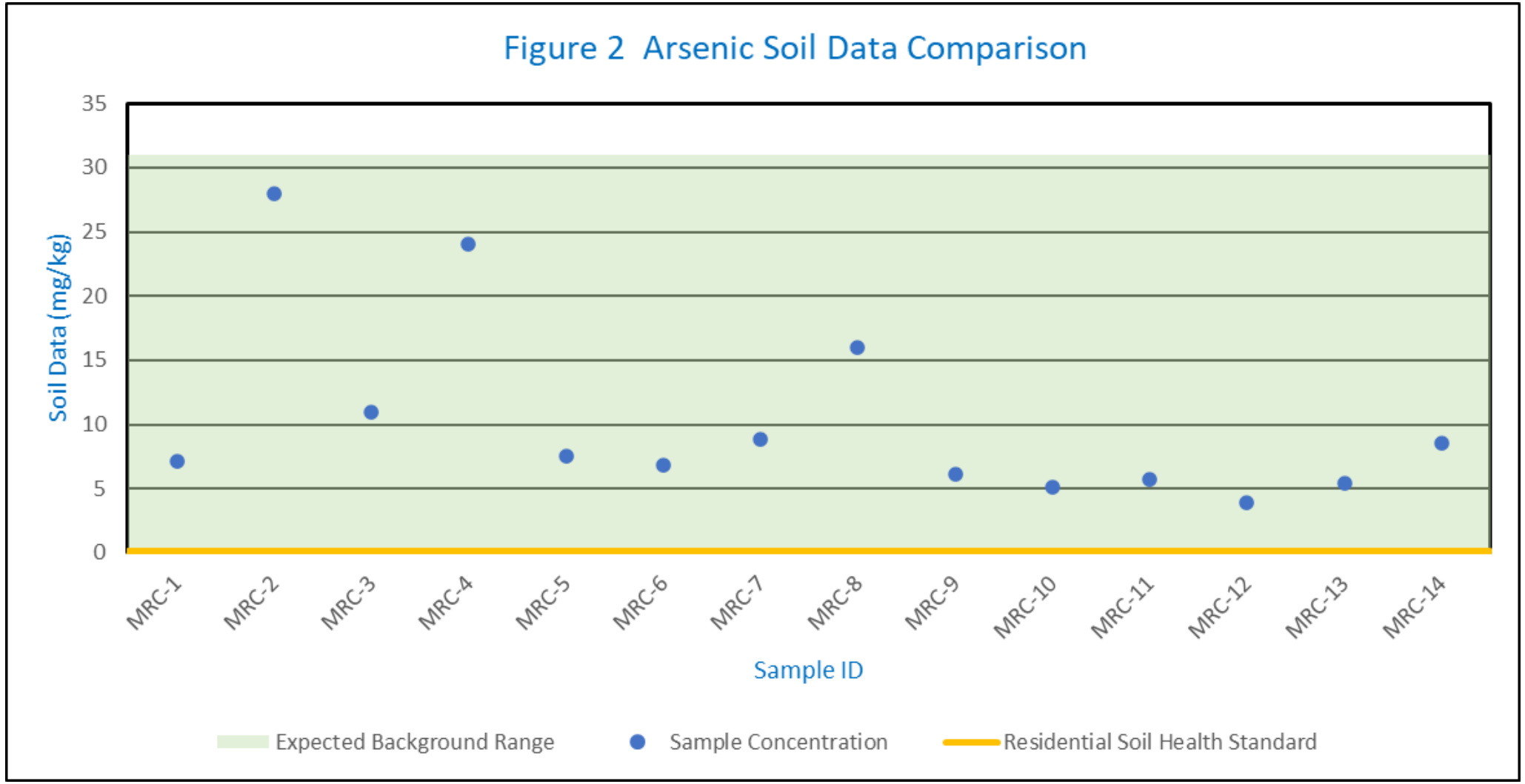
The Following Graphs include:

- Soil samples only
- Units are in parts per million (ppm), which is same as milligrams per kilogram (mg/kg) as shown on graphs
- Colors used include green shading (expected background range), yellow line (residential soil health standard), and blue dots (sample concentrations)

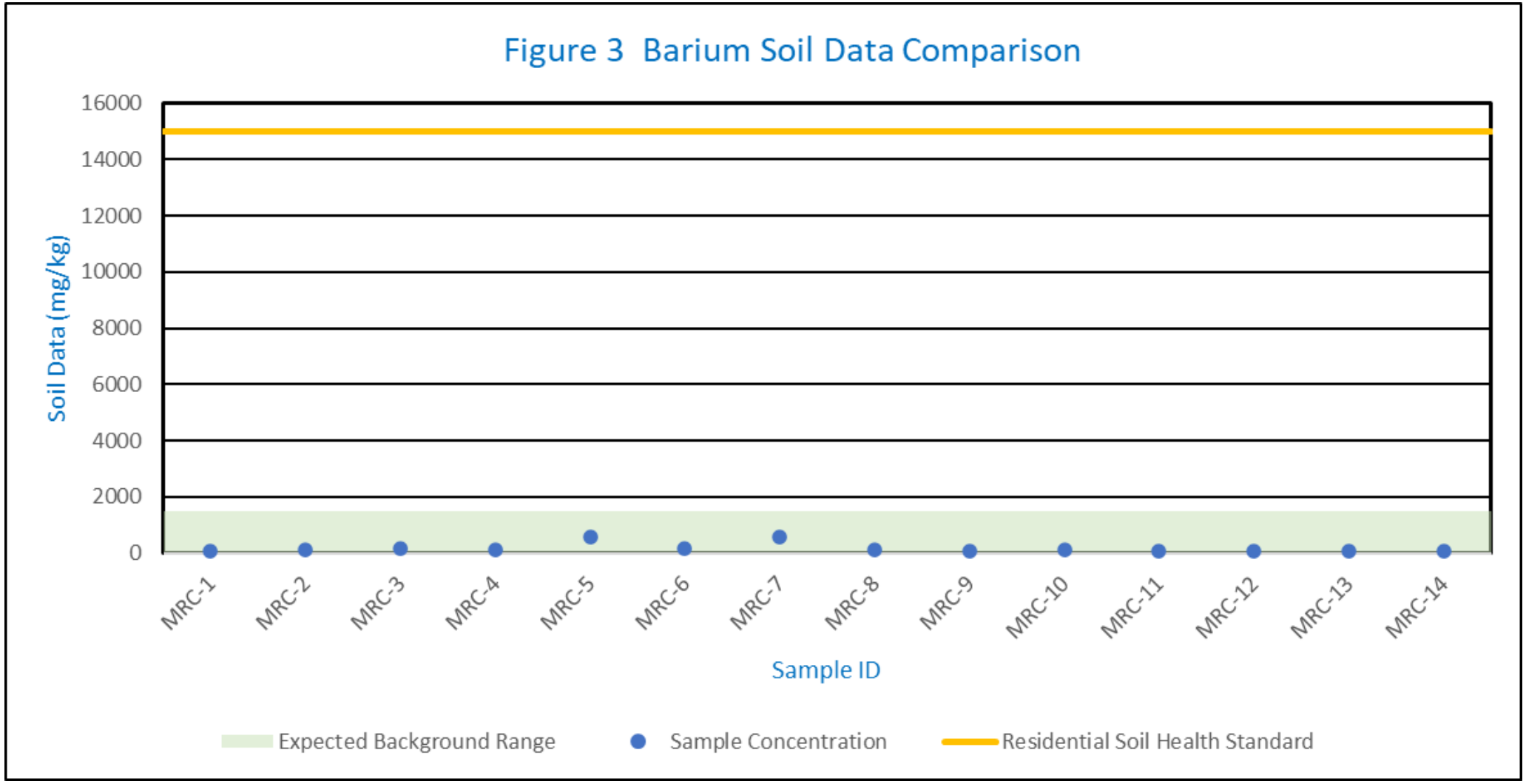
Aluminum



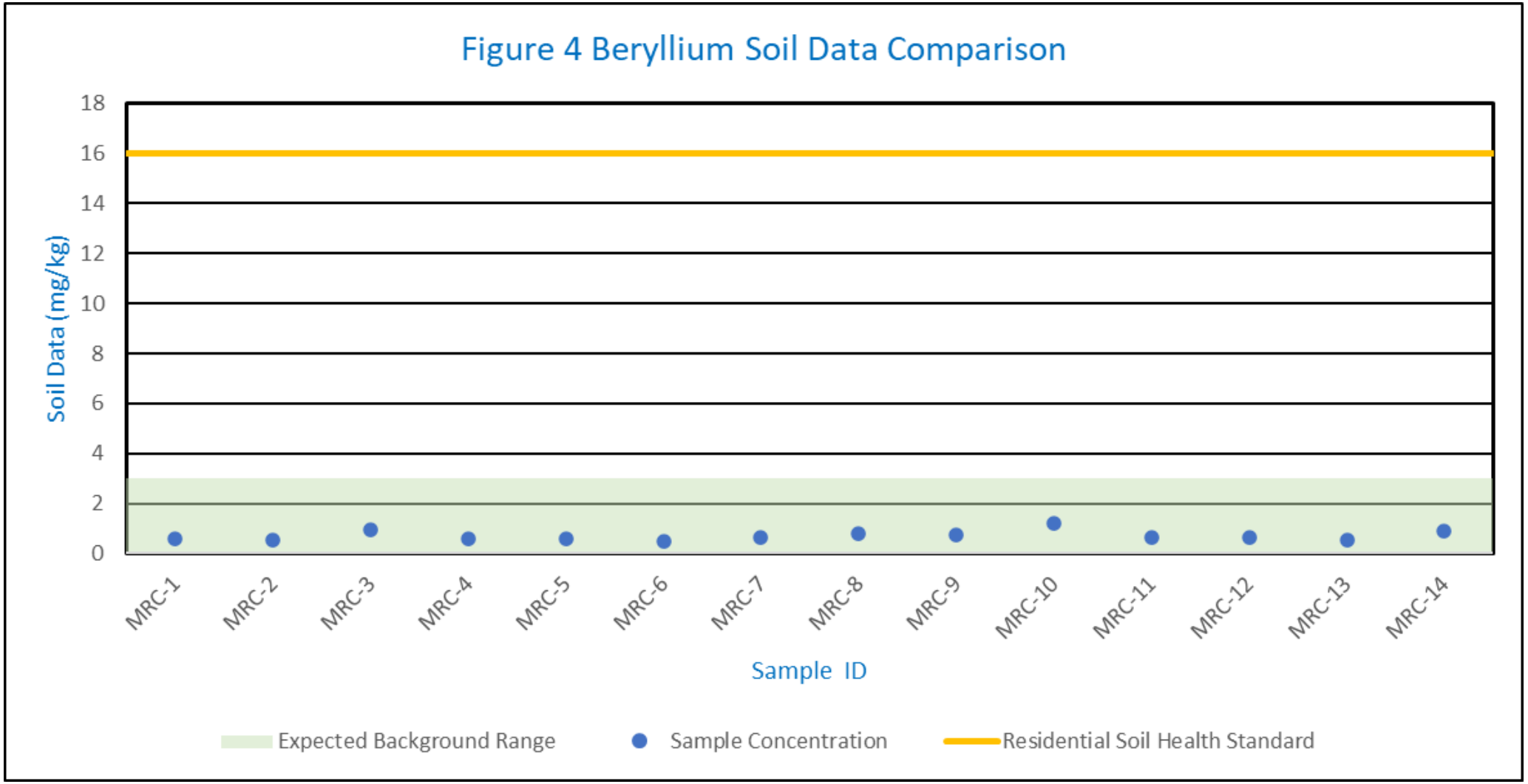
Arsenic



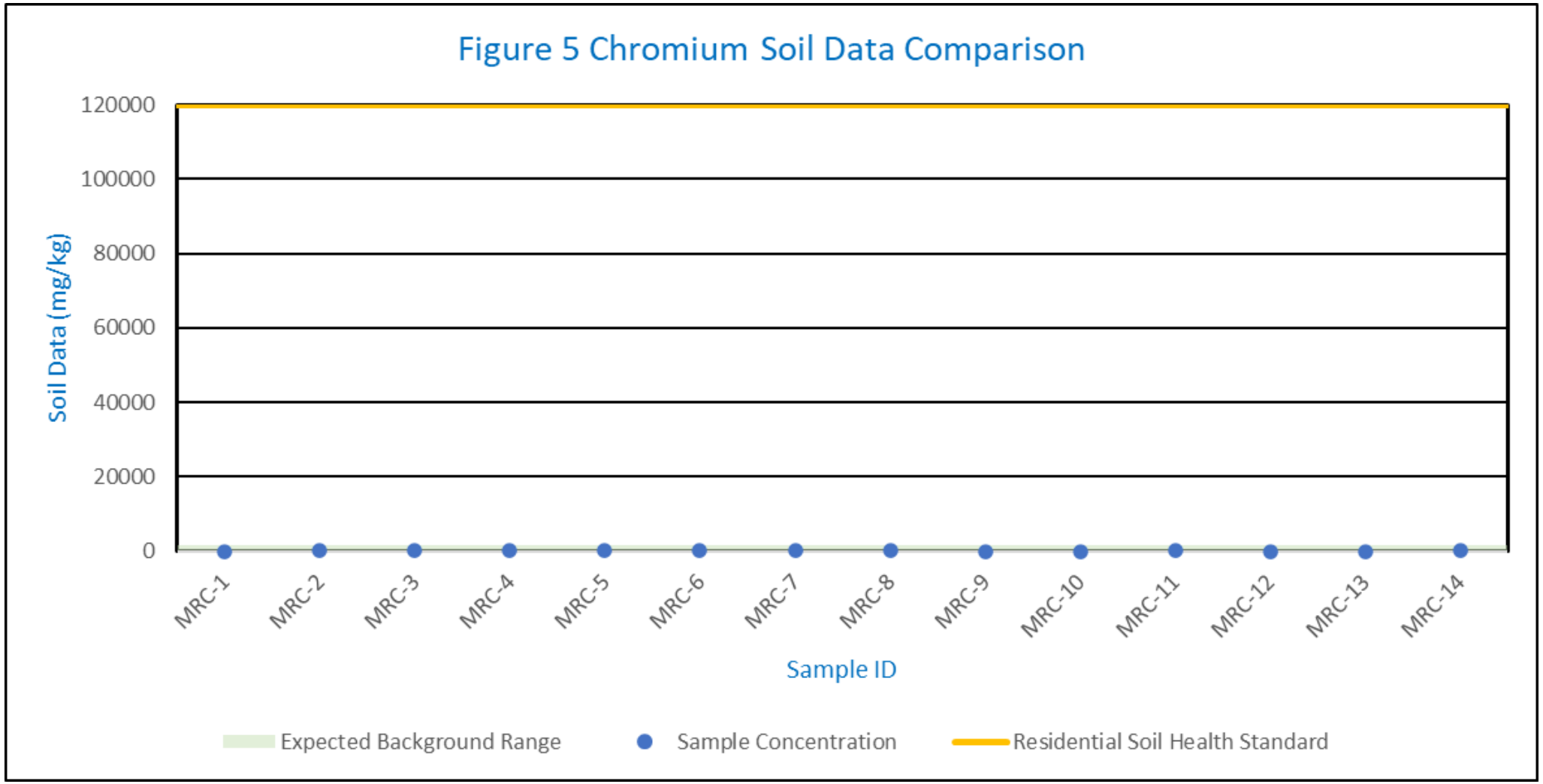
Barium



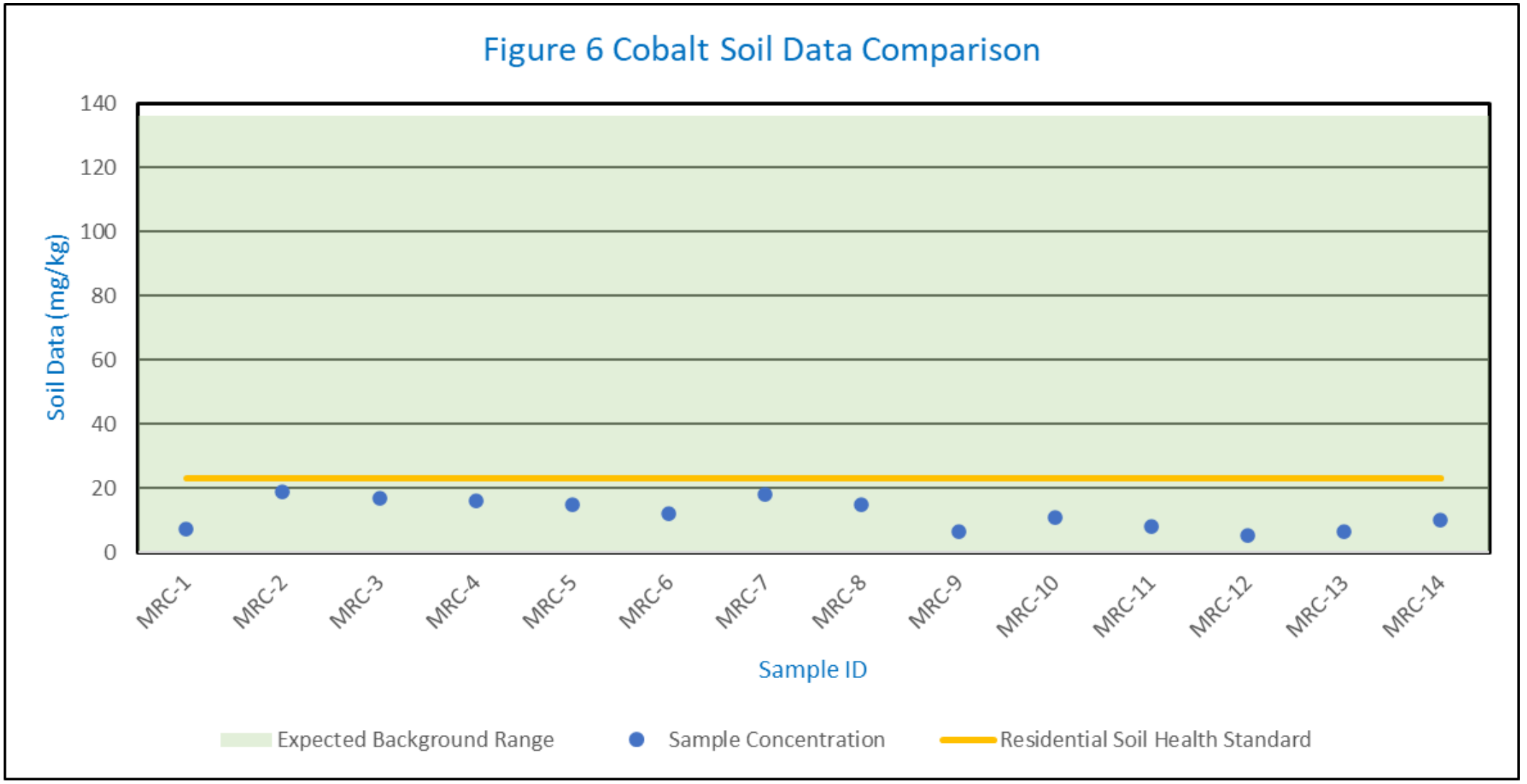
Beryllium



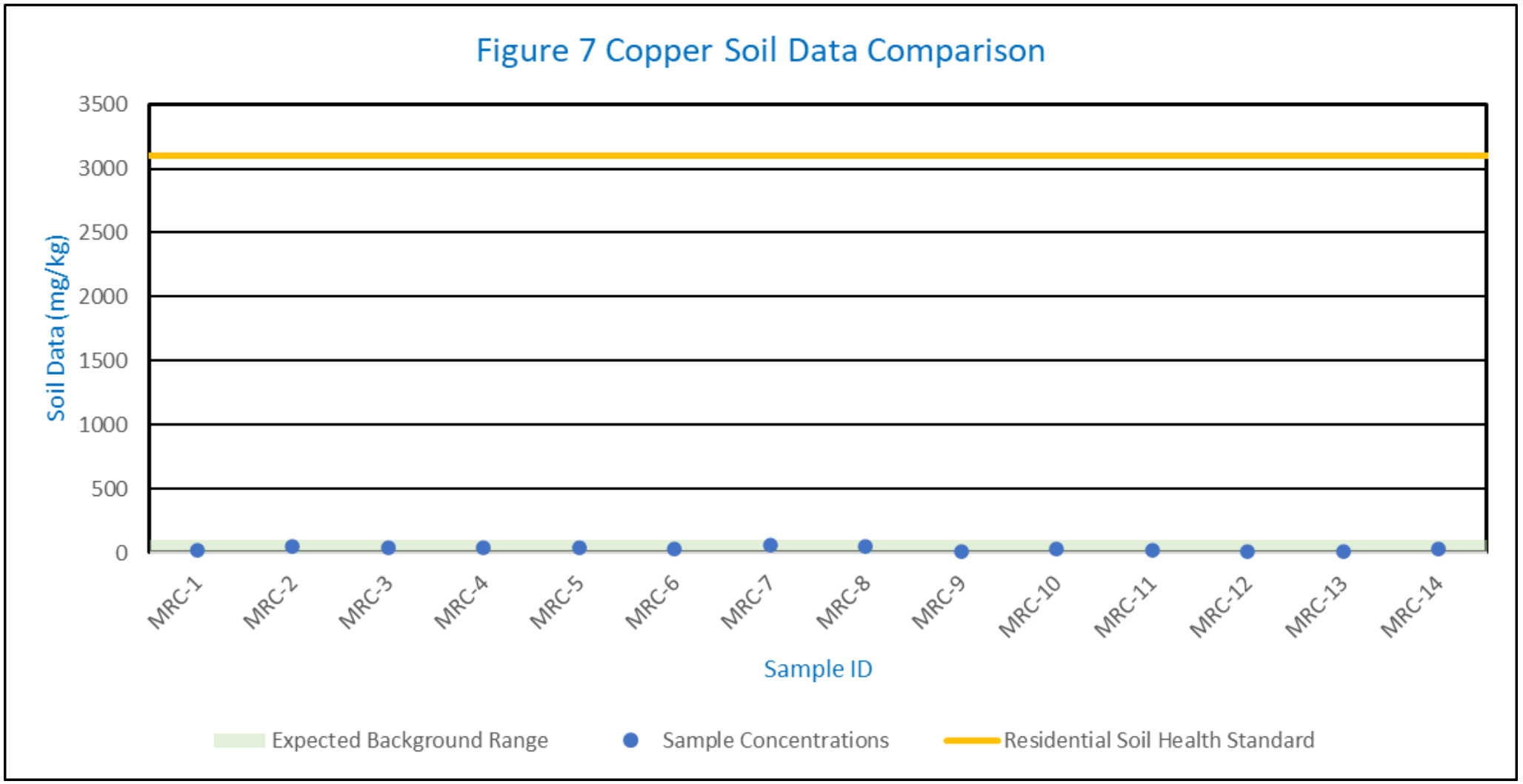
Chromium



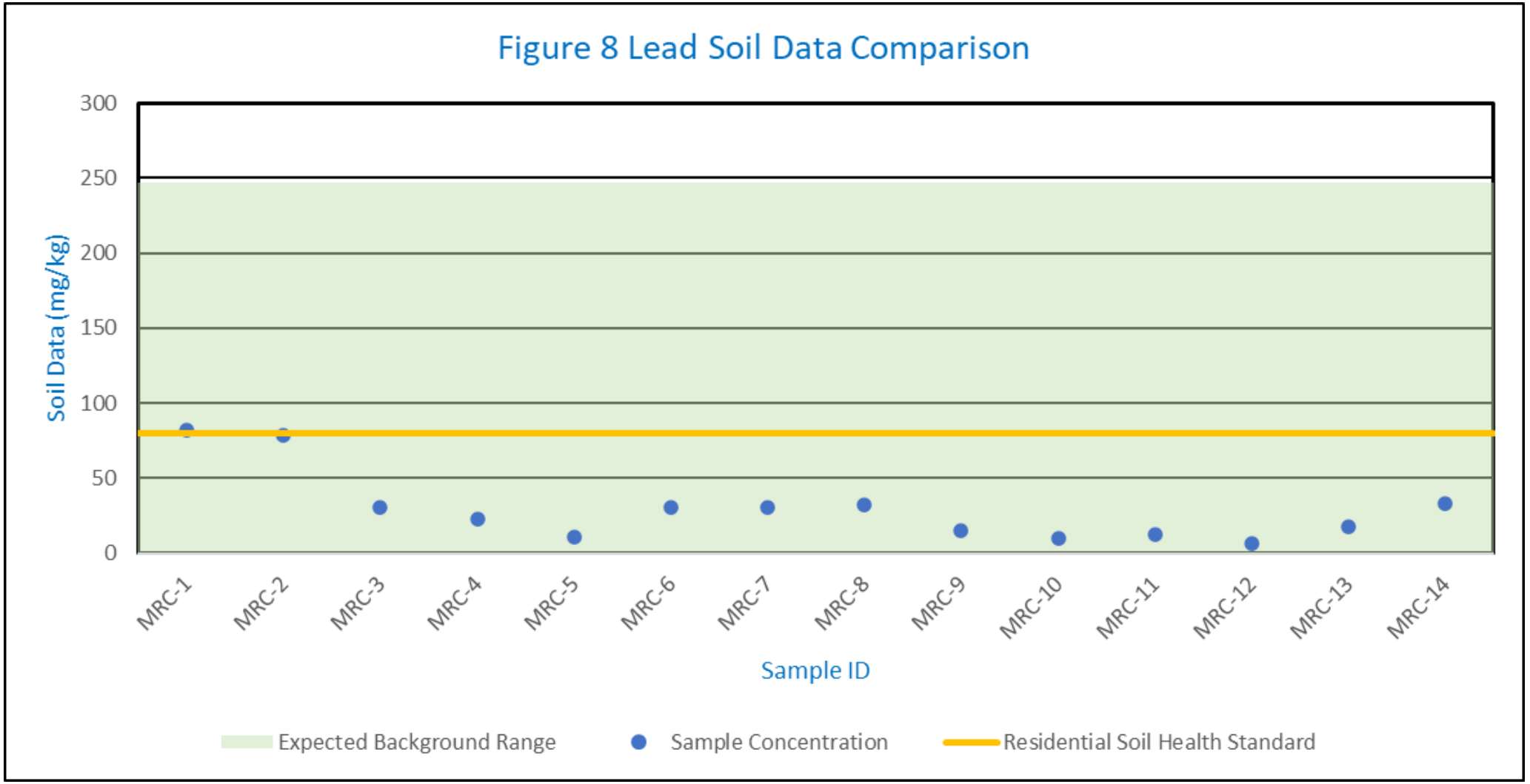
Cobalt



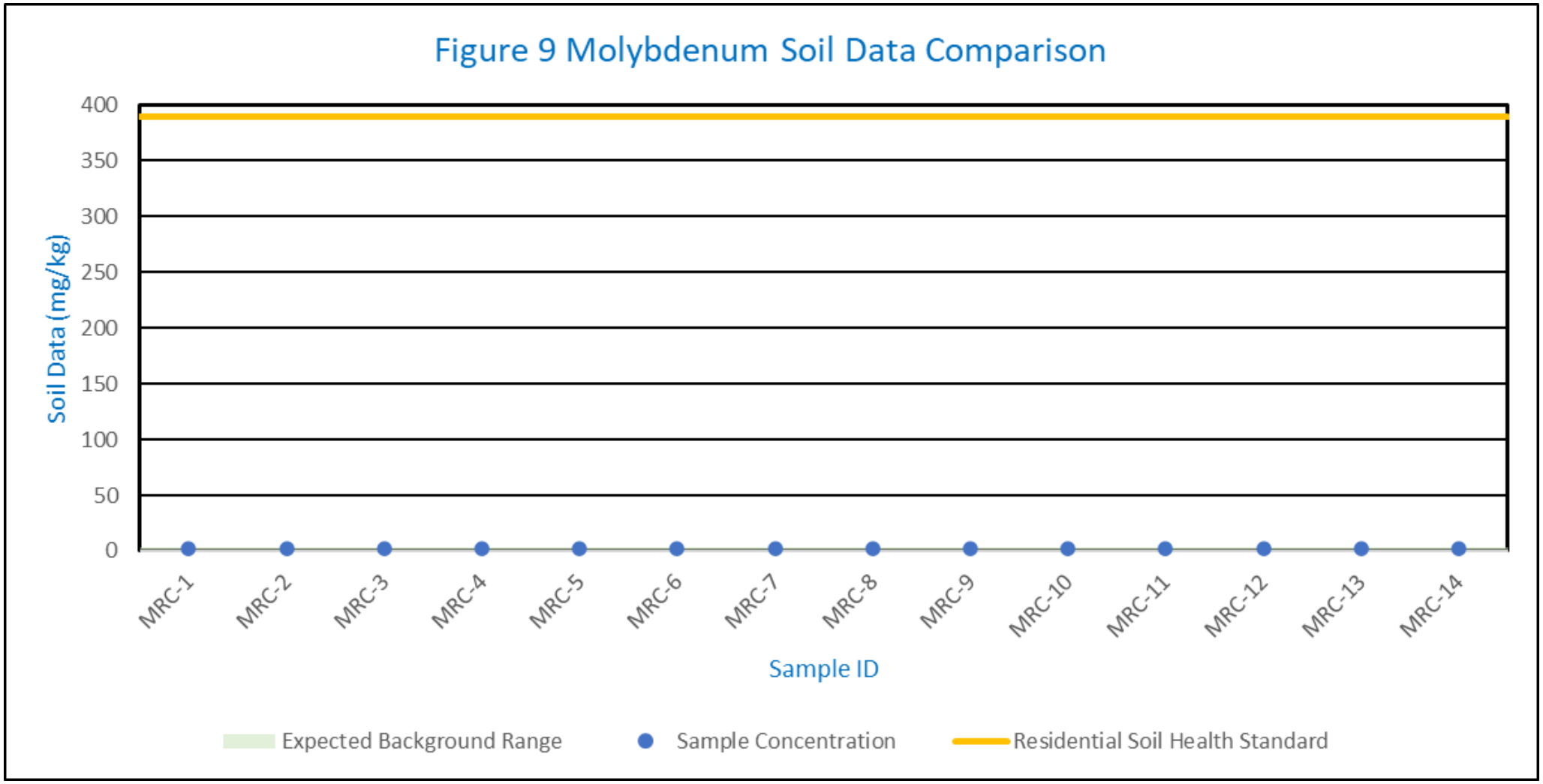
Copper



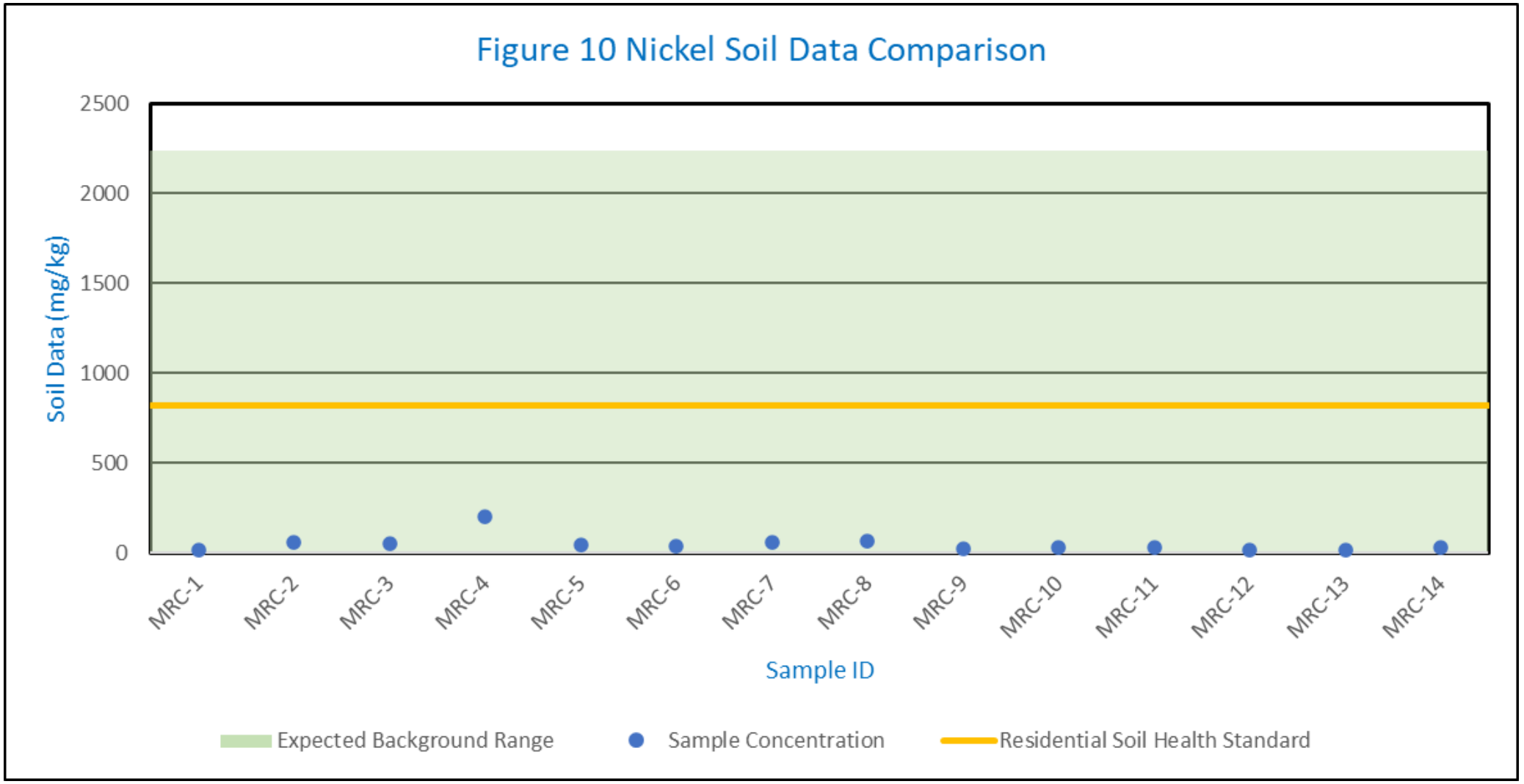
Lead



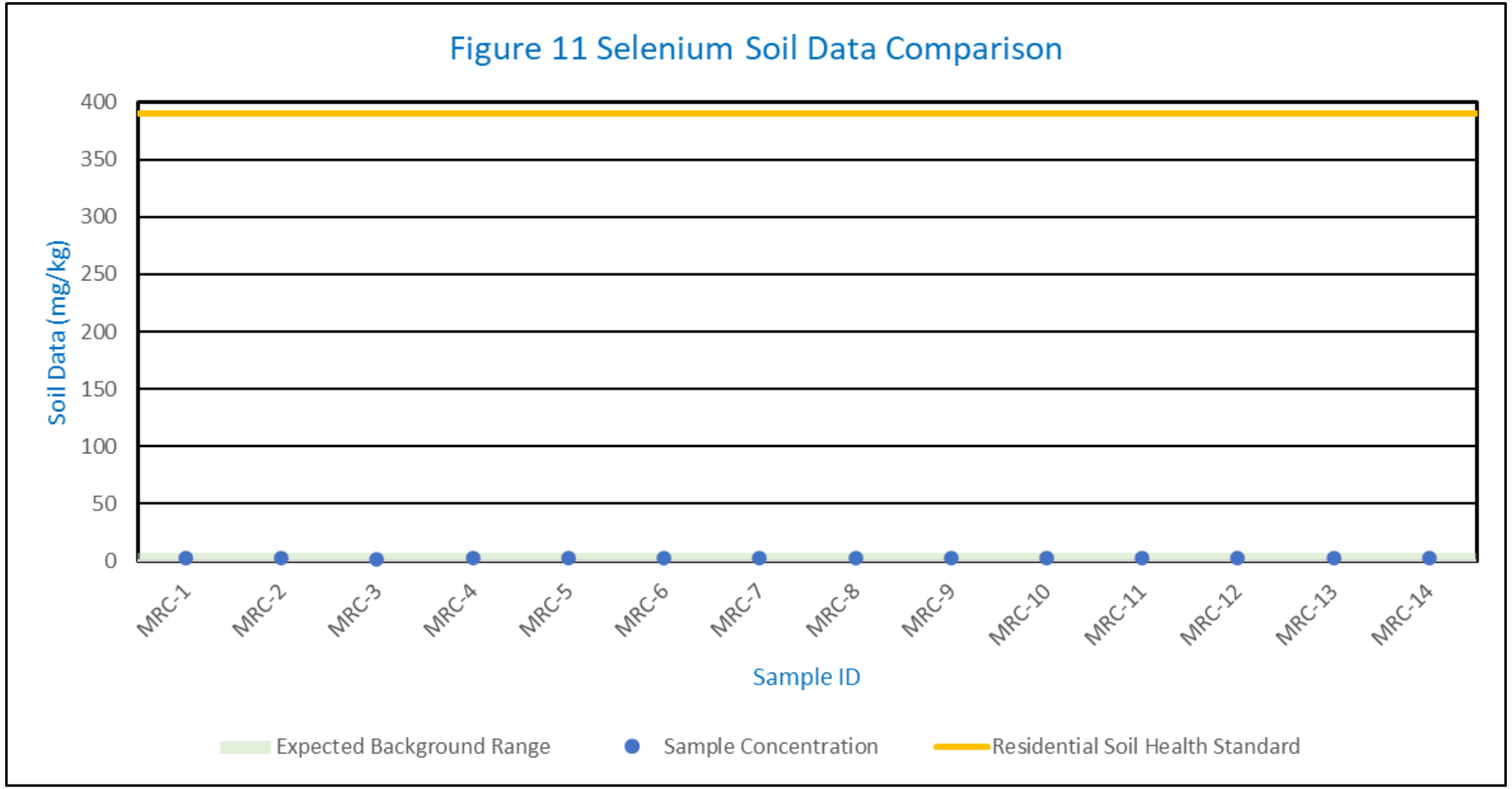
Molybdenum



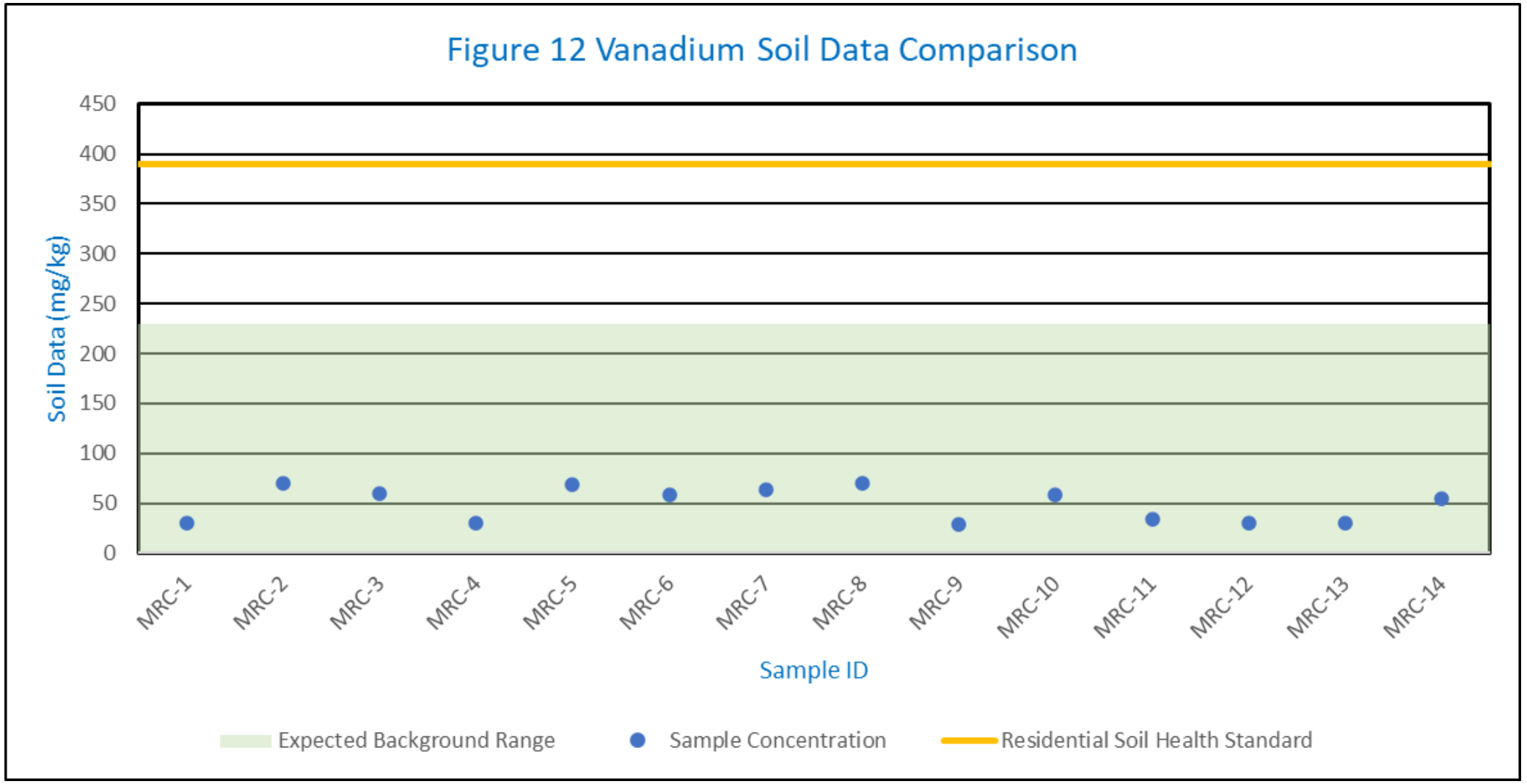
Nickel



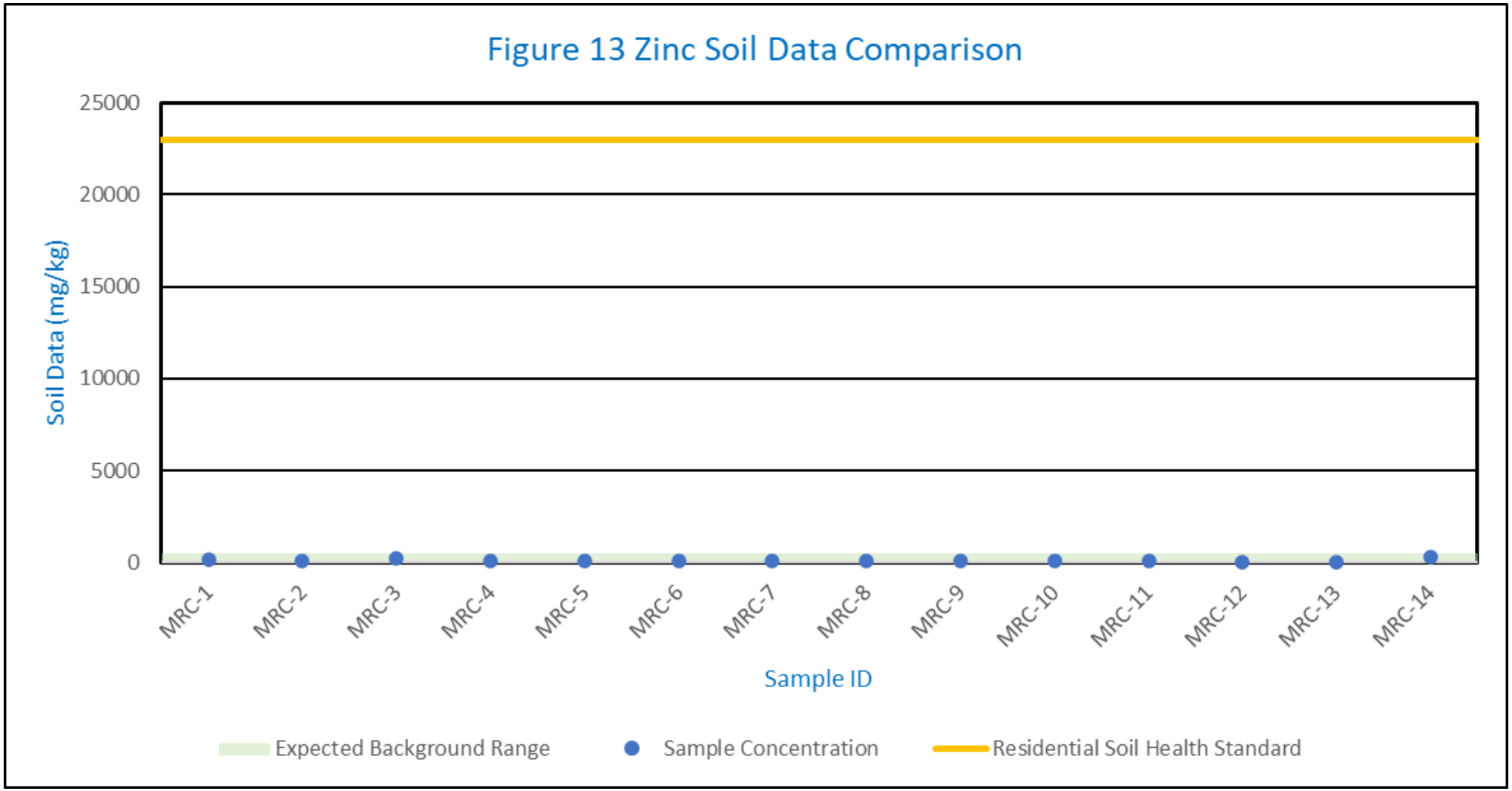
Selenium



Vanadium



Zinc



Conclusions

- None of the metals analyzed exceeded regional background range
- Only two metals exceeded screening levels protective of human health (Arsenic, Lead)
  - Exceedances are not likely to be associated with spent catalyst
- Did not find proportions of metals to match spent catalyst composition

- Based on findings, TRC is not recommending additional sampling or evaluation

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