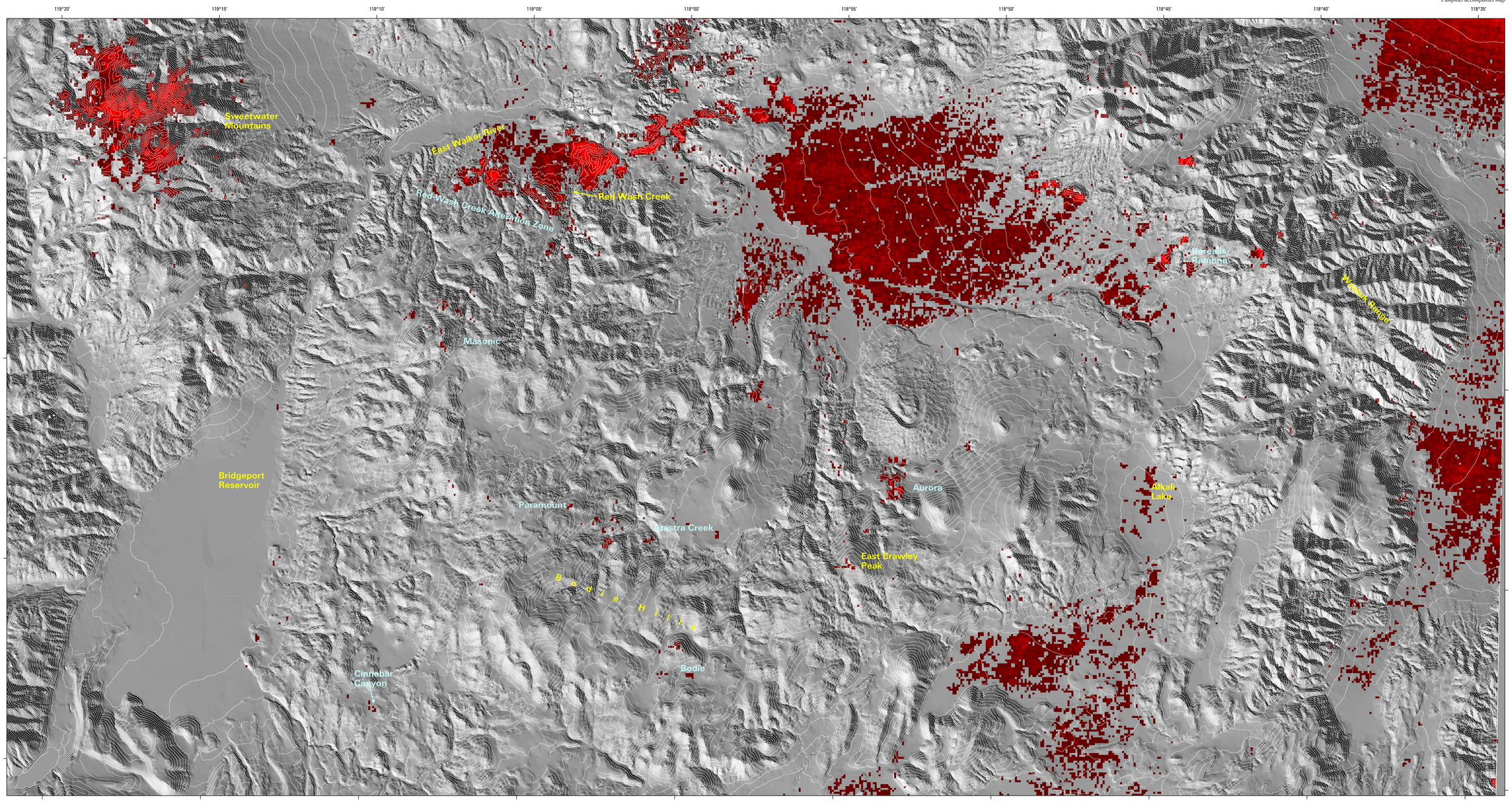
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

SCIENTIFIC INVESTIGATIONS MAP 3104
SHEET 4 OF 4
Version 1.0
Pamphlet accompanies map



ASTER scene information:

West scene:
Scene ID AST_L1A.003:2008798944
Acquired August 12, 2000

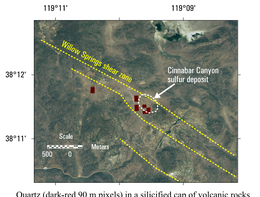
East Scene:
Scene ID AST_L1B.003:2024614684
Acquired June 20, 2004

Mineral mapping has been field verified only in selected areas. Mineral mapping was performed on ASTER Level 2 Surface Emissivity data (Rockwell and Hofstra, 2008).

ASTER data orthorectified using a Projective Transform to orthorectified Landsat TM data and a 1/3 arc second digital elevation model (≈10 m resolution) from USGS National Elevation Dataset (NED). NED and Landsat data provided by USGS Seamless Data Distribution System.

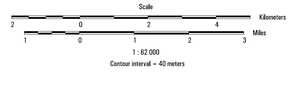
Contours and shaded relief image generated from NED 1/3 arc second data. Contour interval 40 m.

Mines, mining districts, and altered areas indicated in pale cyan.

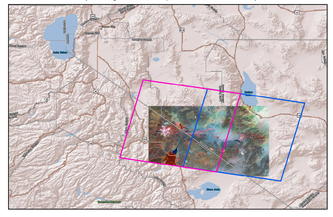


Quartz (dark-red 90 m pixels) in a silicified cap of volcanic rocks overlying the Cinnabar Canyon sulfur deposit was identified using the ASTER thermal infrared data. The resource is estimated at 2.57-million long tons of native sulfur and lies approximately 45 m beneath the surface (Ward, 1992).





Index map showing location of study area and ASTER scene footprints



Explanation for ASTER Thermal Infrared Mapping:

C Quartz abundance

C Continuous stretch applied. Bright shades of color indicate greater quartz abundances, and successively darker shades indicate lower abundances.

MINERAL AND VEGETATION MAPS OF THE BODIE HILLS, SWEETWATER MOUNTAINS, AND WASSUK RANGE, CALIFORNIA/NEVADA, GENERATED FROM ASTER SATELLITE DATA

MAP OF QUARTZ ABUNDANCE

By

Barnaby W. Rockwell

2010