

## California Revealed (CA-R) Quality Assurance

Before uploading the new files to the online repositories, and before storing the files on Linear Tape-Open (LTO-6), the California Revealed (CA-R) will ensure the files meet our high standards by using in-house tools and following steps according to current best practices in quality assurance and control.

- Verify that deliverables exist for each original source. Verify that preservation masters are present and that each master has a corresponding access file derivative. Check that .xml metadata records exist. For audiovisual recordings, check that there are pictures of the original object.
- Validate checksums for all preservation and access files.
- Verify directory structure specifications are met and the files and folders are named correctly.
- For audiovisual recordings:
  - Verify the technical specifications of each file state. Ensure embedded technical metadata is readable by Media Info for all file instantiations, including file size, duration, frame size, codec, number of audio channels and total bit rate for video files, and file size, duration, file type, number of audio channels and total bit rate for audio files. Descriptive metadata should also be readable: Title; Date; Source (name of institution); and Description (California Revealed).
  - Play 90 seconds at the beginning middle and end. If there are more than two files for an object, randomly select 50% of the files to review.
    - For video files: Open preservation master files in Adobe Premiere. Watch recording on the cathode ray tube (CRT) monitor, via an analog-to-digital converter. Review image quality, color/hue, sound levels, and image and sound synchronization with an eye on the waveform monitor, vectorscope, and audio meters. Check for suspicious levels.
    - For audio recordings: Open preservation master files in Wavelab. Review the audio levels and listen for digital artifacts. Check the waveform representation in its entirety for anything that looks unusual, such as spikes, jags, or no signal.
- For images and text:
  - Verify the technical specifications of each file state. Ensure embedded technical metadata is readable by Exiftool for all file instantiations, including file size, format, dimensions, color space, bit depth and compression mode. Descriptive metadata should also be readable: Title; Date; Source (name of institution); and Description (California Revealed).
  - Randomly select at least 30% of total objects to review. Open preservation file in Photoshop. Pan over the entire image zoomed in at 100% in a grid looking for image defects such as artifacts, distortion/noise, skew, cropping, etc.
- Check that the vendor's technical evaluation report matches the image quality of the file. Include in the CA-R QC Notes artifacts or potential issues that might

have been introduced during the transfer/scanning process, if not noted by the vendor. Note any quality issues that might disrupt the user experience, to be included in the online record. Note any questions or comments for the partner.

- Check completeness of file.
- Verify that the file name and associated metadata file corresponds with the content.
- Compare the master file with the derivative access file to ensure sound and/or image quality and duration and/or extent do not deviate. Ensure all video files play in Quicktime, audio files play in iTunes, image files display in Photoshop, and .pdf files display in Adobe Acrobat.
- Verify the .xml metadata record for completeness and accuracy.
- Once files are online, the partner archive will check the quality and completeness of the access files at the Internet Archive. Check time-based files in their entirety if staff time permits. If the partner receives copies of all of their files, the partner will check quality of both the preservation and access file.
- Only after files and metadata have been approved by CA-R and the owning institution, will the original materials be returned to the partner and retained as backups until they deteriorate beyond recovery.

An example of CA-R's [Quality Assurance Form for audiovisual objects](#).

An example of CA-R's [Quality Assurance Form for still image/text objects](#).

Many thanks to the following for sharing quality control procedures and practical advice: Stanford University's Media Preservation Lab, New York University Libraries' Media Preservation Unit and New York University's Moving Image Archiving and Preservation Program, The Bancroft Library, Internet Archive, as well as Indiana University's and Harvard University's Sound Directions: Best Practices in Audio Preservation project.