The colors had faded and shifted in this photograph of grandparents. In looking at this photograph the determination was made that it would be easier to restore working on a grayscale version first and then do the colorization instead of taking the washed out and faded colors in the photograph and trying to adjust them.
To convert the photograph to grayscale three techniques were evaluated;

1. Image/Mode/Grayscale - which made the faces too bright (on the left in Figure 3)
2. A Channel Mixer layer with the Monochrome option selected - which made the faces even brighter.
3. Using only the Blue Channel – which left more detail in the faces, but also had the least contrast. This was the technique settled on because it preserved the most detail. (on the right in Figure 3)

The next step was cloning on a separate layer to remove small spots that appeared on both faces as seen in Figure 4.
A levels layer was introduced to open up the tone and contrast (Figure 5).

A new layer with a “Hard Light” blending mode was applied to give more contrast and to the faces. (Figure 6)

A multiply layer (36% opacity) was added to provide even more depth. Another multiply layer (31% opacity) was added only this time just with the faces selected to add additional depth to the faces.

A Curves layer was used to open up the highlights on the faces. A level layers was applied to the women’s hair to add more contrast and brighten it up.

The man’s eyes were selected and copied to a new layers whites of eyes where lightened a bit with the dodge tool. The catchlight’s in the man’s eyes were enhanced by painting white with a small soft brush at a low opacity on a new layer. The woman’s eyes were selected and copied to a new layer, and with the dodge and burn tools the eyes were enhanced.

A new merged visible layer was created and an unsharp mask was created and with a soft brush at low opacity sharpness was painted in to the man and woman’s eyes and glasses. Figure 7 show the result of these steps.
The next several steps involved creating a number of “Color” blending mode layers to add color to the photograph.

Each major object (ex. faces, necklace, dress, suit, background) was colored on separately created layers using a soft brush between 5-15% opacity.

For the faces, the flesh tone (color = ECBA99) layer was followed by a red highlights layer (where red highlights were painted in with a soft brush a very low opacity to selected areas of the face including under the eyes, at the bottom of the nose, and on the cheeks), and the lips were painted on a separate layer.

Figure 8 show the result of these steps

The background was selected and copied to a new layer that was set with the color blending mode and was filled with a bluish gray color and then the background was darkened with a level layer.

The area where the woman’s hair met her forehead was selected and copied to a new layer that was set to the multiply blending mode. This added more depth and definition.

A curves layer was used to slightly tone down the highlights.

Figure 9 show the results of these steps
Figure 10 shows a close-up of the before and after images.