

APPENDIX F - VISUAL AND SCENIC RESOURCES

1.0 VIEWSHED ANALYSIS

1.1 INTRODUCTION

A viewshed is the geographical area from which a structure or feature is visible. A viewshed includes all surrounding points that are in line-of-sight with the structure or feature. It excludes points that are past the horizon or from which the view of the structure or feature is obstructed by topography, other structures, vegetation, etc. Consequently, a viewshed may consist of numerous separate areas, based on the relative location of the viewer and the specified structure or feature.

This document provides the results of a viewshed analysis performed to establish the areas in which the facilities proposed for construction in this decommissioning plan can be viewed and to provide an inventory of features that could be visually impacted. The viewshed was produced from 10-meter national elevation data; this is the highest resolution dataset available that provides complete ground coverage. The resulting viewshed area was compared to publicly available data to generate a list of potential features that could be visually impacted. The purpose of this analysis is to describe the proposed treatment facility structures and potential impacts on scenic and visual resources.

1.2 BACKGROUND

The site is located in a rural area of Logan County, Oklahoma consisting mostly of cultivated land and herbaceous vegetation. The landscape is a mix of small rolling hills and grasslands occasionally interrupted by riparian areas around streams. There are a few small towns within ten miles, of which the largest is the city of Guthrie, Oklahoma located nine miles east of the site. Farmsteads and houses are scattered throughout the area, with the nearest homes located approximately 0.5 miles away.

Details regarding the proposed treatment facility construction are provided in Appendices J and K. The proposed structures will be neutral in color consistent with pre-engineered industrial buildings. The structures will be placed on upland areas above the flood plain of the Cimarron River, with nearby surrounding riparian vegetation providing a natural visual screen. Of the proposed new buildings, the tallest structure rises 48.8 feet above the current ground level.

1.3 ANALYSIS

The viewshed analysis was conducted using ESRI's ArcGIS 10.4 Desktop software. USGS 10-meter national elevation data and the heights of the proposed structures were modeled to produce a

viewshed that represents all surrounding land areas where the site could potentially be visible (see Figure 1).

To evaluate potential visual impacts to sensitive receptors located near the site, publicly available data representing federal, state, and local parks, National Register of Historic Places, tribal-owned lands, wildlife recreational areas, federal and state-owned lands, and scenic rivers were incorporated into the GIS system. The receptor site locations were evaluated in comparison to the produced viewshed to identify any sites that were located within the defined viewshed area boundary.

1.4 RESULTS

The maximum extent of the potential viewshed is approximately 20 miles. Within this approximate radius of the site's structures, a total of 52 sensitive receptors were identified. The closest sensitive receptor is over 6 miles away. These potential sensitive receptors include the following:

- 24 Local Parks
- 28 National Register of Historic Places Sites

There were no federal or state parks, wildlife recreational areas, federal and state-owned lands, tribal lands, or scenic rivers located within 20 miles of the site. There were numerous roads and highways that cross the viewshed area, including Interstate 35 and Highways 74, 74F, and 33.

Because visual effects are inversely proportional to distance, the effects of the proposed structures are anticipated to be minimal at distances greater than 5 miles. As the distance from the structures increases, the angle of vision occupied by the structures decreases significantly. Although the structures may be visible at 20 miles, they would occupy less than three hundredths of a degree of the field of vision. At 5 miles the same structures would occupy a tenth of a degree of the field of vision. As seen in Figure 1, the majority of the viewshed area runs in a general east to west pattern along the Cimarron River. Because the proposed structures will be located next to riparian areas, some of the visual impacts will be blocked by vegetation. The neutral colors of the structures will further reduce visual impacts.

When comparing the identified sites to the viewshed, none of the potential receptors were located within the viewshed area. Therefore, no visual impacts to sensitive receptors are anticipated to be associated with this project. Furthermore, while the roadways are located within the viewshed area, any potential visual impact to motorists are anticipated to be temporary.

