APPENDIX F

VISUAL RESOURCE INVENTORY AND SCENIC QUALITY ANALYSIS

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1.0 INTRODUCTION

The BLM manages visual resources through the use of Visual Resource Management (VRM) objectives, which are based in part on a visual resource inventory process (VRI) conducted through a combination of map analyses and fieldwork. Section 3.14 of the DEIS describes the VRM and VRI process. Since the 1989 Phoenix Resource Management Plan did not include VRI analyses or VRM objectives, the purpose of this study is to establish VRI classifications under baseline conditions for BLM-managed lands within the Ripsey Wash and Hackberry Gulch TSF sites. The analysis is based on the methodology provided by BLM Manual H-8410-1 (BLM 1986a).

The analysis area for the Visual Resource Inventory consists of the two scenic quality rating units (SQRUs) containing the TSF alternatives and the adjacent SQRUs, up to three miles away from project features, including the stormwater diversion channels, relocated Florence-Kelvin Highway, and realigned Arizona Trail.

2.0 SCENIC QUALITY RATING

SQRU's within the analysis area were delineated based on similar landscape characteristics, including topography, color, variety, and cultural modifications as shown on **Figure 1, Scenic Quality Ratings**. The SQR was then determined based on criteria provided in Handbook H-8410-1. **Table 1, Scenic Quality Worksheet** provides the ratings assigned each SQRU for the factors specified in H-8410-1 and the final SQR assigned to each unit. Section 5.0 provides the SQRU rating analyses used to establish the SQR's.

3.0 SENSITIVITY LEVEL AND DISTANCE ZONES ANALYSYS

The sensitivity analysis was based on a review of the sensitive travel corridors, key observation points (KOP's) and recreational use areas identified as part of the DEIS visual and recreation analyses. The VRI analysis area contains three travel corridors that traverse BLM-managed lands and are used for recreational activities or for access to recreation lands: the Florence-Kelvin Highway, the Arizona Trail, and State Route 177. The six key observation points (KOP's) used in the DEIS visual resource analysis are all located within these corridors. In addition to the three travel corridors, the sensitivity level analysis evaluated the adjacent public lands used for dispersed recreation.

Table 2, Sensitivity Level Analysis provides the results of the sensitivity level analysis, based on criteria provided in BLM Manual H-841-1. The Arizona Trail was assigned a high rating due to its national importance, with the other the sensitive travel corridors and use areas assigned a moderate sensitivity rating.

The delineation of sensitivity level rating (SLR) units was combined with the distance zone delineation, since the extent of each SLR unit would be influenced by the seen areas from each sensitive resource. The distance zone delineation focused on the Arizona Trail due to its high sensitivity rating. The distance zones from a 37-mile section of trail were delineated in order to capture the foreground/middleground views from all portions of the trail that might fall within the analysis area. See **Figure 2, Visibility from Arizona National Scenic Trail.** Seen areas from the trail beyond the five mile distance corridor and within the analysis area were mapped as background distance zone. The remaining lands were mapped as unseen area. See **Figure 3, Arizona National Scenic Trail Distance Zones**.

Seen/unseen areas from the other travel corridors and use areas were not delineated for the following reasons: 1) the dispersed recreation lands extend throughout the public lands in the analysis area and

thus their foreground-middleground distance zone would extend throughout the analysis area; 2) These lands and the other travel corridors (Florence-Kelvin Highway and SR 177) are all rated of moderate sensitivity; and 3) thus these areas would ultimately have the same VRI Classes as the background or seldom seen areas from the Arizona Trail. See **Table 3, Basis for Determining Visual Resource Inventory Classes**.

4.0 VRI CLASSES

The VRI classification for the analysis area was developed by overlaying the distance zones/sensitivity level delineation with the SQR delineation to determine the appropriate VRI class for each BLM parcel. Visual Resource Inventory Classes were then assigned for each BLM parcel depending on the parcel's SQR, sensitivity level, and distance zone. **Table 3, Basis for Determining Visual Resource Inventory Classes** provides the basis for determining the VRI Classes as presented in BLM Manual H-8410-1. **Table 4, Visual Resource Inventory Classes** and **Figure 4, Visual Resource Inventory (VRI) Classes** provide the resulting VRI Classes.

Table 1, Scenic Quality Worksheet

Scenic Quality Rating Units		Landform	Vegetation	Water	Color	Influence of Adjacent	Scarcity	Cultural Modifi-cations	TOTAL SCORE	RATING	Notes
1	North of Gila River	4	1	0	4	2	3	0	14	B	Steep, dissected topography with red and purple geology. Unusual rock formations.
2	Gila River Floodplain	1	4	4	4	2	5	1	21	A	Cultural modifications (Historic Florence-Kelvin Highway Bridge, Railroad bridge, and A-Diamond Ranch) add favorably to visual variety. Riparian vegetation associated with perennial water contributes to scarcity.
3	Golden Bell Mine Area	2	1	0	2	2	1	-1	7	C	Combination of steep topography and flat bajadas. Brown and tan colors. Similar to other units in terms of colors and vegetation. Cultural modifications include high voltage transmission line, radio tower, and Golden Bell Mine.
4	Southwest of Ripsey Wash	2	1	0	2	2	1	-1	7	C	Combination of steep topography and flat bajadas. Brown and tan colors. Cultural modifications include Florence-Kelvin Highway.
5	Ripsey Wash	2	1	0	2	2	1	-1	7	C	Wide wash bounded by rolling topography. Brown and tan are dominant colors. Cultural modifications include Arizona Trail, Florence-Kelvin Highway and SCIP Transmission line.
6	Tortilla Mountains	4	1	0	2	2	3	0	12	B	Relatively steep topography. Some exposed rock faces. Brown and tan are dominant colors. Cultural modifications include Riverside and Arizona Trail.

Scenic Quality Rating Units		Landform	Vegetation	Water	Color	Influence of Adjacent	Scarcity	Cultural Modifi-cations	TOTAL SCORE	RATING	Notes
7	Dripping Spring Mountains	4	1	0	3	2	2	0	12	B	Dripping Springs Mountains contains some interesting topographic features. Colors include red and purple rock formations.
8	Hackberry Gulch	2	1	0	2	2	1	-2	6	C	Bajada topography typical of the region with drainages that become more pronounced closer to the Dripping Springs Mountains. Several steep pinnacles. Color dominated by browns and tans. Cultural modifications include Elder Gulch, which forms edge of SQRU, Gray Horse Mine, and SR 177.
9	Kearny Bajada	1	1	0	2	2	1	-1	6	C	Bajada topography and vegetation typical of the region. Color dominated by browns and tans. Cultural modifications include Kearny and SR 177.
10	Ray Mine	3	0	0	3	3	5	-3	11	C	Dramatic topography and color variation created by mine pit. Little vegetation. Ray mine is a major cultural modification, but is of interest to some people.

Notes:

- Methodology based on BLM, 1986a.
- Scenic quality classification criteria:
  - Score of 11 or less = C rating
  - Score of 12 - 18 = B rating
  - Score of 19 or more = A rating

All units except the Ray Mine were given a 2 rating for "Influence of Adjacent Scenery" because they all have mountainous scenery in the background which provides a moderate degree of visual variety, which would warrant a Level 3 rating, but they also have intermittent views of the Ray Mine, thus bringing the rating down to 2. The Ray Mine SQRU was given a 3 for this factor because its adjacent scenery contains topographic variety, but since it contains the mine, the mine would not be considered part of the adjacent scenery.

Table 2, Sensitivity Level Analysis

	Sensitive Travel Corridors and Use Areas			
Rating Criteria	**Florence-Kelvin Highway Corridor**	**Arizona Trail Corridor**	**Recreation Lands outside Highway and Arizona Trail Corridors**	**State Route 177 (Copper Corridor Scenic Highway)**
Type of User	M	H	H	L
Amount of Use	M	L	M	M
Public Interest	M	H	M	M
Adjacent Land Use	L	L	L	L
Special Areas	L	H	L	M
Other Factors	N/A	N/A	N/A	N/A
Overall Rating	M	H	M	M
Explanation	Public interest is moderate since some of the use is for access to dispersed recreation and the Arizona Trail.	Use levels are relatively low since trail was recently completed, but designation as National Scenic Trail warrants High rating.	Moderate public interest in scenic quality since it is used by local residents and visitors for dispersed recreation activities.	Designated State Scenic Corridor

Table 3, Basis for Determining Visual Resource Inventory Classes

		Visual Sensitivity Levels						
		High			**Medium**			**Low**
Distance Zones		Foreground/ Middleground	Background	Seldom Seen	Foreground/ Middleground	Background	Seldom Seen	Seldom Seen
Special Areas		I	I	I	I	I	I	I
Scenic Quality Ratings	A	II	II	II	II	II	II	II
	B	II	III	III or IV*	III	IV	IV	IV
	C	III	IV	IV	IV	IV	IV	IV

*If adjacent areas is Class III or lower assign Class III, if higher assign Class IV.
Source: BLM 1986a

Table 4, Visual Resource Inventory Classes

		High Sensitivity Travel Corridors and Use Areas: Arizona Trail			Medium Sensitivity Travel Corridors and Use Areas: Florence-Kelvin Highway, SR 177, and Recreation Lands outside Highway and Trail Corridors		
VQRU	**Scenic Quality Rating**	**Foreground-Middleground**	**Background**	**Seldom Seen**	**Foreground-Middleground**	**Background**	**Seldom Seen**
1	B	II	III	III	III	NA	NA
2	A	II	II	II	II	NA	NA
3	C	III	IV	IV	IV	NA	NA
4	C	III	IV	IV	IV	NA	NA
5	C	III	IV	IV	IV	NA	NA
6	B	II	III	III	III	NA	NA
7	B	II	III	III	III	NA	NA
8	C	III	IV	IV	IV	NA	NA
9	C	III	IV	IV	IV	NA	NA
10	C	III	IV	IV	IV	NA	NA

Note: Background and Seldom Seen areas from Medium Sensitivity Level areas are marked as not applicable (NA) because dispersed recreation areas extend across all of the public lands within the analysis area and thus all of the BLM lands would be considered foreground-middleground views from the surrounding dispersed recreation areas.

5.0 SCENIC QUALITY FIELD INVENTORY FORMS

SCENIC QUALITY FIELD INVENTORY

Ripsey Wash Tailing Facility EIS Project

Date: April 2015

District: Tucson

Scenic Quality Rating Unit: 1 - North of Gila River

Evaluator: Susan Corser

	Landform/Water	**Vegetation**	**Structure**
Form	Steep dissected topography with rounded slopes and ridgelines.	Rounded clumps of shrubs and trees, such as paloverde and jojoba, interspersed with the more linear or vertical forms of saguaros and other cacti.	N/A
Line	Curvilinear hills and horizontal bands created by ridgelines.	Curvilinear lines of shrub masses, angular and straighter lines created by various cacti species.	N/A
Color	Some areas of red and purple geology create visual interest.	Mix of warm and cool blues, warm and cool greens, tans, and lavender.	N/A
Texture	Soils range from coarse to fine, with rougher textures created by larger rocks.	Foreground rough, middleground patchy.	N/A

Narrative: Relatively distinctive landscape due to steep landform, unusual rock formations, and geology with some areas of red and purple coloration. Arizona trail traverses the southern edge of this SQRU. Vegetation in the southern portion of the SQRU is primarily the Saguaro Paloverde-Jojoba Mixed Cacti Shrubland community. Vegetation data is not available for the other portions of the SQRU. Visible mountain ranges, such as Tortilla and Dripping Spring Mountains enhance the SQRU's scenery to a moderate degree, but intermittent views of the existing Ray Mine, slightly reduces the score.

SCENIC QUALITY FIELD INVENTORY

Ripsey Wash Tailing Facility EIS Project

Date: May 16 2015

District: Tucson

Scenic Quality Rating Unit: 2 – Gila River Floodplain

Evaluator: Susan Corser

	Landform/Water	**Vegetation**	**Structure**
Form	Flat floodplain ranging from narrow, canyon to broad wide flooplain to the west and to the southeast near Kearny.	Rounded clumps of shrubs and linear forms of tree branches.	Geometric forms of A-Diamond Ranch. RR bridge creates linear and curvilinear appearing forms. Historic highway bridge also linear.
Line	Horizontal valley floor with curvilinear edges.	Curvilinear lines of shrub masses, angular and straighter lines created by tree branches.	Straight lines of ranch structure and highway and RR bridge. RR bridge arch appears almost round.
Color	Greys and light tans to reddish tans. Water color ranging depending on conditions and sediment load from blue to light brown.	More green colors relative to other part of the region. Considerable variety in vegetation and colors, particularly in the fall months, including orange, lavender, reds, yellows.	White and red ranch house. RR bridge blue-grey, and brown-grey of highway bridge.
Texture	Gravel along floodplain floor creates broad areas of medium texture, mixed with areas of finer sediments.	Floodplain vegetation appears softer in texture than adjacent upland vegetation.	Ranch structure smooth in appearance. Pattern in RR bridge gives coarse texture. Highway bridge texture relatively coarse.

Narrative: Gila River floodplain is a distinctive and relatively scarce landscape feature within the physiographic region due to its year-round flowing water and the green color and diversity of vegetation. Cultural modifications are largely positive in scenic value due to their historic character. Visible mountain ranges, such as Tortilla and Dripping Spring Mountains enhances the SQRU's scenery to a moderate degree, but intermittent views of the existing Ray Mine, slightly reduce the score.

SCENIC QUALITY FIELD INVENTORY

Ripsey Wash Tailing Facility EIS Project

Date: May 16 2015

District: Tucson

Scenic Quality Rating Unit: 3 – Golden Bell Mine Area

Evaluator: Susan Corser

	Landform/Water	**Vegetation**	**Structure**
Form	Flat bajadas on west side of SQRU, transitioning to relatively rugged, steep terrain, bounded by Zellweiger Wash to east and Gila River floodplain to the north.	Rounded clumps of shrubs and trees, such as paloverde and jojoba, interspersed with the more linear or vertical forms of saguaros, ocotillos and other cacti.	Regular linear forms of SCIP power poles, radio tower, and high power transmission lines.
Line	Undulating horizonatal lines created by ridgelines. Rounded forms found within area of steeper topography.	Curvilinear lines of shrub masses, angular and straighter lines created by various cacti species.	Straight lines of radio tower and power poles, with powerlines creating horizontal lines.
Color	Light tans to reddish tans.	Mix of warm and cool blues, warm and cool greens, tans, and lavender.	Reddish brown power poles and light grey of radio tower.
Texture	Fine to medium texture of exposed soils, except where exposed rocks create rough texture.	Foreground rough, middleground patchy.	Smooth.

Narrative: The area surrounding the Golden Bell Mine ranges from open bajadas to the west to very steep mountainous topography. Upland desert vegetation provides some diversity and interest in terms of form and color, particularly during blooming season, but is typical of the region. Primary cultural modifications are the high-voltage transmission line, a radio tower, and SCIP powerline, which present minor visual detractions. Vegetation communities include the Saguaro Paloverde-Jojoba Mixed Cacti Shrubland and the Ocotillo Paloverde-Mixed Shrubland. Visible mountain ranges, such as Tortilla and Dripping Spring Mountains enhances the SQRU's scenery to a moderate degree, but intermittent views of the existing Ray Mine, slightly reduce the score.

SCENIC QUALITY FIELD INVENTORY

Ripsey Wash Tailing Facility EIS Project

Date: May 16 2015

District: Tucson

Scenic Quality Rating Unit: 4 – Southwest of Ripsey Wash

Evaluator: Susan Corser

	Landform/Water	**Vegetation**	**Structure**
Form	Relatively steep mountain slopes descending to Ripsey Wash to the northeast. Topographic interest created by numerous steep peaks and drainages. Transitions to wide bajada slopes to the southwest.	Rounded clumps of shrubs and trees, such as paloverde and jojoba, interspersed with the more linear or vertical forms of saguaros, ocotillos and other cacti.	Florence-Kelvin Highway creates sinuous form .
Line	Undulating horizontal bands of hills and mountains. Curvilinear and diagonal lines created by steep slopes.	Curvilinear lines of shrub masses, angular and straighter lines created by various cacti species.	Curvilinear lines of Florence-Kelvin Highway.
Color	Light tans to reddish tans.	Mix of warm and cool blues, warm and cool greens, tans.	Light reddish tan.
Texture	Fine to medium texture of exposed soils. Coarse texture of rocks.	Foreground rough, middleground patchy.	Highway seen as smooth texture from the distance.

Narrative: This area was delineated as a separate SQRU from Ripsey Wash and the Tortilla Mountains because it has more topographic variety than both units. Topography ranges from areas of broad bajadas near the Florence-Kelvin Highway to the highly dissected, steep terrain that bounds Ripsey Wash. Vegetation communities include the Saguaro Paloverde-Jojoba Mixed Cacti Shrubland and the Ocotillo Paloverde-Mixed Shrubland. The only highly visible structure is the Florence-Kelvin Highway. The Dripping Spring Mountains, visible in the background from the higher elevations enhance the SQRU's scenery to a moderate degree, but intermittent views of the existing Ray Mine slightly reduce the VQR score.

SCENIC QUALITY FIELD INVENTORY

Ripsey Wash Tailing Facility EIS Project

Date: May 16 2015

District: Tucson

Scenic Quality Rating Unit: 5 – Ripsey Wash

Evaluator: Susan Corser

	Landform/Water	**Vegetation**	**Structure**
Form	Flat to rolling terrain bounded by Tortilla Mountains to the east and Gila River floodplain to the north.	Rounded clumps of shrubs and trees, such as paloverde and jojoba, interspersed with the more linear or vertical forms of saguaros, ocotillos and other cacti.	Regular linear forms of power poles and transmission lines. Flat, horizontal band created by Florence-Kelvin Highway.
Line	Undulating horizontal bands of hills and mountains.	Curvilinear lines of shrub masses, angular and straighter lines created by various cacti species.	Straight lines of power poles, with horizontal powerlines, and curvilinear lines along Florence-Kelvin Highway.
Color	Light tans to reddish tans.	Mix of warm and cool blues, warm and cool greens, tans, and lavender.	Reddish brown power poles and light red-tan of highway.
Texture	Fine to medium texture of exposed soils, except where exposed rocks create rough texture.	Foreground rough, middleground patchy.	Texture of highway and power poles seen as smooth relative to patchy vegetation.

Narrative: Ripsey Wash provides a relatively open wash bounded by ridgelines and mountains, popular for camping, hunting and other dispersed recreation. The Arizona Trail traverses the northeastern portion of this SQRU. Landform is fairly typical of other washes within the region. Vegetation consists primarily of saguaro, paloverde, jojoba, ocotillo, and triangle leaf bursage, as well as xeroriparian species along the washes. Primary cultural modifications are the SCIP powerline, Arizona Trail and Trailhead, and Florence-Kelvin Highway, which present minor visual detractions. Visible mountain ranges, such as the Tortilla and Dripping Spring Mountains enhance the SQRU's scenery to a moderate degree, but intermittent views of the existing Ray Mine slightly reduce the score.

SCENIC QUALITY FIELD INVENTORY

Ripsey Wash Tailing Facility EIS Project

Date: May 16 2015

District: Tucson

Scenic Quality Rating Unit: 6 – Tortilla Mountains

Evaluator: Susan Corser

	Landform/Water	**Vegetation**	**Structure**
Form	Relatively steep mountain slopes descending to Ripsey Wash to the west and Gila River floodplain to the north. Topographic interest created by some extremely steep individual peaks rising dramatically above the surrounding landscape.	Rounded clumps of shrubs and trees, such as paloverde and jojoba, interspersed with the more linear or vertical forms of saguaros, and other cacti.	Community of Riverside create interspersed geometric forms, not highly visible due to vegetative screening.
Line	Undulating horizontal lines created by ridgelines. Curvilinear and diagonal lines created by steep slopes.	Curvilinear lines of shrub masses, angular and straighter lines created by various cacti species.	Straight horizontal and vertical lines of residential structures and diagonal roofs.
Color	Light tans to reddish tans.	Mix of warm and cool blues, warm and cool greens, tans.	Primarily light values and whites.
Texture	Fine to medium texture of exposed soils, except where exposed rocks create rough texture.	Foreground rough, middleground patchy.	Overall coarse texture created by buildings, windows, vehicles, etc. Individual buildings are smooth in texture.

Narrative: The Tortilla Mountains provide a distinctive backdrop to Ripsey Wash. The Arizona Trail traverses a portion of this SQRU, ascending the "Big Hill" along its western edge before dropping down into Ripsey Wash. The relatively steep mountain landscape has unique topographic features and some exposed rock faces that provide visual interest. Several narrow and very steep peaks, rise dramatically from the surrounding landscape, such as the Sultana Mine area, creating visual interest. Expansive views exist in all directions from the higher elevations. The Dripping Spring Mountains, visible in the background from the higher elevations, enhance the SQRU's scenery to a moderate degree, but intermittent views of the existing Ray and Hayden mine facilities and the town of Kearny slightly reduce the VQR score. The vegetation and colors are similar to the other SQRU's, primarily saguaro, paloverde, and jojoba.

SCENIC QUALITY FIELD INVENTORY

Ripsey Wash Tailing Facility EIS Project

Date: May 16 2015

District: Tucson

Scenic Quality Rating Unit: 7 – Dripping Spring Mountains

Evaluator: Susan Corser

	Landform/Water	**Vegetation**	**Structure**
Form	Relatively steep mountain slopes descending to the bajada slopes of Hackberry Gulch and the Kearny area. Topographic interest created by some extremely steep individual peaks rising dramatically above the surrounding area.	Rounded clumps of shrubs, interspersed with the more linear or vertical forms of saguaros, paloverde and other cacti. Teddybear Cholla create unique form.	N/A
Line	Undulating horizontal lines created by ridgeline. Diagonal and curvilinear lines created by individual peaks.	Curvilinear lines of shrub masses, angular and straighter lines created by cholla and other cacti species.	N/A
Color	Red and purple rock formations found in some areas, with other areas light to reddish tan.	Mix of warm and cool blues, warm and cool greens, tan.	N/A
Texture	Fine to medium texture of exposed soils, except where exposed rocks create rough texture.	Foreground rough, middleground patchy.	N/A

Narrative: The Dripping Springs Mountains provide a dramatic backdrop to the visual analysis area. The steep mountains have unique topographic features including several narrow and very steep peaks that create visual interest. Some red and purple rock formations also contribute to the visual diversity. Visible mountain ranges in the distance, such as the Tortilla Mountains and Granite and Teapot mountains, enhance the SQRU's scenery, but views of the existing Ray Mine reduce the score. Vegetation community characterized as Saguaro Paloverde Teddybear Cholla Shrubland.

SCENIC QUALITY FIELD INVENTORY

Ripsey Wash Tailing Facility EIS Project

Date: May 16 2015

District: Tucson

Scenic Quality Rating Unit: 8 – Hackberry Gulch

Evaluator: Susan Corser

	Landform/Water	**Vegetation**	**Structure**
Form	Bajada topography transitioning to steeper slopes towards the Dripping Springs Mountains. Several steep pinnacle landforms. Drainages become more pronounced near the mountains.	Rounded clumps of shrubs, such as jojoba and paloverde, interspersed with the more linear or vertical forms of saguaros, ocotillos, and other cacti.	SR 177 creates flat, sinuous form. Elder Gulch TSF creates geometric form with angled side slopes and flat top. The community of Kelvin and structures along the Florence-Kelvin Highway add geometric forms.
Line	Curvilinear lines of rolling topography. Pinnacles create vertical lines.	Curvilinear lines of shrub masses, angular and straighter lines created by various cacti species.	Curvilinear lines of SR 177, straight lines formed by top of Elder Gulch TSF and structures along SR 177 and near Kelvin.
Color	Light tans to reddish tans.	Mix of warm and cool blues, warm and cool greens, tans.	Grey color of SR 177, Elder Gulch TSF has light green of dust control treatment and variegated earth tone colors of tailings impoundment.
Texture	Fine to medium texture of exposed soils. Coarse texture of rocks.	Foreground rough, middleground patchy.	Smooth texture of SR 177. Elder Gulch impoundment texture is smooth from distance relative to patchy texture of adjacent vegetation.

Narrative: Broad bajadas along SR 177 become gradually steeper towards the Dripping Springs Mountains. Drainages become more incised to the northwest. Several steep pinnacle landforms rise dramatically above the flat bajada plains. Elder Gulch TSF, which forms the northwestern edge of this SQRU, adds a highly geometric, regular form with a patchwork of various earth colors across the impoundment surface and a light green horizontal line across the top from the dust control treatment. Vegetation communities include the Saguaro Ocotillo Paloverde-Jojoba Shrubland within the higher elevations, Saguaro Paloverde-Jojoba Mixed Cacti Shrubland, in the lower areas, and Xeroriparian along drainages. There are several residential structures within the community of Kelvin and other structures along the northern section of the Florence-Kelvin Highway and its intersection with SR 177.

SCENIC QUALITY FIELD INVENTORY

Ripsey Wash Tailing Facility EIS Project

Date: May 16 2015

District: Tucson

Scenic Quality Rating Unit: 9 – Kearny Bajada

Evaluator: Susan Corser

	Landform/Water	**Vegetation**	**Structure**
Form	Bajada topography transitioning to steeper slopes towards the Dripping Springs Mountains. Drainages become more pronounced near the mountains.	Rounded clumps of shrubs, such as jojoba and paloverde, interspersed with the more linear or vertical forms of saguaros, ocotillos, and other cacti.	SR 177 creates flat, sinuous form. Town of Kearny create interspersed geometric forms.
Line	Curvilinear lines of rolling topography.	Curvilinear lines of shrub masses, angular and straighter lines created by various cacti species.	Curvilinear lines of SR 177. Straight horizontal and vertical lines of structures and diagonal roofs within Kearny.
Color	Light tans to reddish tans.	Mix of warm and cool blues, warm and cool greens, tans.	Grey color of SR 177. Kearny structures are primarily light values and whites.
Texture	Fine to medium texture of exposed soils. Coarse texture of rocks.	Foreground rough, middleground patchy.	Smooth texture of SR 177. Structures within Kearny create coarse texture overall from the pattern of buildings, streets and vehicles. Individual buildings are smooth in texture.

Narrative: Broad bajada topography along SR 177 bounded by the Gila River floodplain and the Dripping Springs Mountains. To the south the Town of Kearny is situated on relatively flat topography that slopes gradually down towards the river. Town is laid out in a regular pattern of streets and lots, the streets creating both straight and curvilinear form/line and the buildings creating geometric forms and straight lines. Vegetation communities include the Saguaro Ocotillo Paloverde-Jojoba Shrubland within the higher elevations, Saguaro Paloverde-Jojoba Mixed Cacti Shrubland, in the lower areas, and Xeroriparian along drainages. Adjacent scenery dominated by broad views of the Dripping Springs Mountains and the existing Elder Gulch TSF. Form and line dominated by the horizontal bajada slopes.

SCENIC QUALITY FIELD INVENTORY

Ripsey Wash Tailing Facility EIS Project

Date: May 16 2015

District: Tucson

Scenic Quality Rating Unit: 10 – Ray Mine

Evaluator: Susan Corser

	Landform/ Water	**Vegetation**	**Structure**
Form	See structure.	Rounded forms of trees and shrubs.	Stepped pattern of mine pit. Mine waste and elder Gulch TSF: geometric form with angled side slopes and flat top.
Line	See structure.	Curvilinear outlines of trees and shrubs.	Straight line formed by mine pit benches and sides and tops of waste rock and Elder Gulch TSF. Curvilinear lines of SR 177,
Color	See structure.	Warm and cool greens.	Variegated earth tone colors of waste rock and tailings impoundment. Light green dust control treatment on Elder Gulch TSF. Grey color of SR 177.
Texture	See structure.	Vegetation seen mostly along SR 177 as coarse in texture.	Mine pit, waste rock and Elder Gulch impound-ment texture is smooth from distance relative to patchy texture of adjacent vegetation, but patchwork pattern creates coarse texture. Smooth texture of SR 177.

Narrative: The Ray Mine SQRU is dominated by the steep walls of the existing open pit mine and the waste rock piles and Elder Gulch TSF rising above the existing landforms, which combine to create very dramatic scenery. The visual quality of the mine pit is dominated by the benching, which creates regular, relatively straight horizontal lines and geometric horizontal forms, which in profile appear stepped. The waste rock piles and Elder Gulch TSF have more uniform slopes, creating straight, angled forms with horizontal tops, and straight diagonal and horizontal lines. The colors found on the waste rock piles and Elder Gulch TSF are primarily earth tones, forming a unique geometric patchwork pattern that results from the various rock types distributed along the surface. The Elder Gulch TSF also creates a light green horizontal line across the top from the dust control treatment. Vegetation is limited to very small areas primarily along SR 177. The mine constitutes a major cultural modification, but for some people is of cultural and visual interest. It is thus assigned a -3 score in the cultural modifications category for the SQR instead of a -4. The mine was assigned a level 5 in terms of scarcity on the SQR, being one of the largest mines in North America.

6.0 CONTRAST RATING ANALYSIS

The contrast rating worksheets developed for the visual resource analysis, as directed by BLM Manual 8431, are provided below. The contrast rating process provides a method for evaluating the effects of proposed modifications to the landscape. The extent of visual contrast between the existing landscape and a proposed management activity determines, in part, the degree of visual impact generated by the project. The contrast between the basic design elements of form, line, color, and texture of the project's major features and those of the existing landscape are used to describe the visual contrast created by the project. This assessment process provides a means for determining visual impacts and for identifying measures to mitigate these impacts (BLM 1986b).

The following contrast rating worksheets were completed by Susan Corser of ECA Community Planning and John Anderson of Westland Resources. The worksheets were based on several field visits conducted over the course of the project and on simulations of the proposed alternatives prepared by Westland Associates. The contrast rating worksheets represent the analysis of visual conditions and project-generated visual contrasts as viewed from the six Key Observation Points (KOP's) used to evaluate visual effects from the two alternatives. Photos of existing conditions from the six KOP's and simulations of the alternatives are provided in **Appendix E, Visual Simulations.**

VISUAL CONTRAST RATING WORKSHEET

Date:	March 4, 2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Ray Mine TSF

Project Name:	**Location:**	**Location Sketch:**
Ray Mine Tailings Facility	Township: 4S Range: 13E Section: 21	See Westland Resources worksheets below.
Key Observation Point: KOP 1 - Florence Kelvin Highway		
VRM Class: N/A		

Characteristic Landscape Description

	Landform/Water	**Vegetation**	**Structures**
Form	FG: Flat to rolling terrain. MG-BG: Steeper rounded slopes. Horizontal form of existing tailings in background.	Rounded clumps	N/A
Line	Wavy, undulating horizontal bands. Ends of ridges and drainages form diagonals. Curvilinear lines formed by Florence Kelvin Highway in middleground and Mine roads in background.	Curvilinear, some straight vertical lines of saguaros	N/A
Color	Light tans, to reddish tans.	Mix of warm and cool greens, some tan.	N/A
Texture	Fine to medium.	FG: rough MG: coarse, patchy	N/A

Proposed Activity Description (Facility)

	Landform/Water	**Vegetation**	**Structures**
Form	Horizontal mass of TSF, angled face of impoundment. Geometric form.	N/A	N/A
Line	Very straight, continuous lines, horizontal on top of TSF, diagonal line on side	N/A	N/A
Color	Light pink-tan after reclamation, grey before reclamation. Green dust control treatment along top edge.	N/A	N/A
Texture	Uniform. Smooth before reclamation, medium texture after reclamation.	N/A	N/A

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form	x											
	Line	x											
	Color		x										
	Texture	x											

Does project design meet visual resource management objectives?

N/A

Additional mitigating measures recommended?

Evaluator Name(s): Susan Corser

Although the horizontal form of the TSF fits in with the landscape, the strong, unbroken lines of the top and side of the TSF will contrast with the soft undulating lines of the middleground and background mountains. The color and texture before reclamation would bea continuous grayish color which would contrast with the greens, tans, and reddish tans of the surroundings. After reclamation the pink-tan color of the rock surface would be similar to the adjacent earth colors, but contrast with the vegetation. The medium texture of the impoundment surface, after it is rocked, will contrast with the smoother texture of the foreground earth and varied texture of the vegetation. The dust control treatment would create a horizontal, light green line, contrasting with the earth colors and the darker greens of adjacent vegetation.

VISUAL CONTRAST RATING WORKSHEET

Date:	March 4, 2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Ray Mine TSF

Project Name:	**Location:**	**Location Sketch:**
Ray Mine Tailings Facility	Township: 4S Range: 13E Section: 2	See Westland Resources worksheets below.
Key Observation Point: KOP 2 - Arizona Trail, Mile 4.3		
VRM Class: N/A		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG: Flat to rolling terrain. Horizontal bands formed by mountains.	Uneven rounded clumps	N/A
Line	Irregular, diagonal, wavy.	Irregular patches, irregular line of foreground branches, straight verticals of saguaros.	N/A
Color	Reddish tan to light tan.	Light to dark greens, mostly warm greens with some cool greens, light reds.	N/A
Texture	Fine to medium.	FG: rough, coarse MG: coarse, dotted sparse	N/A

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Horizontal mass of TSF. Geometric forms of cut and fill slopes.	N/A	Geometric form of retaining walls.
Line	Rigid straight lines. Horizontal on top of TSF, curvilinear on bottom. Highway corridor would have diagonal, straight lines along edges of cut and fill slopes.	N/A	Retaining walls for highway would have straight lines.
Color	Light pink-tan after reclamation, grey before reclamation. Green dust control treatment along top edge.	N/A	Light grey color of retaining walls.
Texture	Uniform. Smooth before reclamation, medium texture after reclamation.	N/A	Smooth texture of retaining walls.

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form	x											
	Line	x											
	Color		x										
	Texture	x											

Does project design meet visual resource management objectives?

Project located outside BLM lands.

Additional mitigating measures recommended?

Evaluator Name(s): Susan Corser

Although the horizontal form of the top of the TSF fits in with the existing horizontal ridgelines, the strong, unbroken lines of the top and side of the TSF will contrast with the soft undulating lines of the foreground, the ridgeline to the east, and the background mountains. The color and texture after reclamation with rock surfacing will be a continuous light pink-tan color, which would be compatible with the adjacent earth colors, but contrast with the green colors of the surrounding vegetation. The medium texture of the impoundment surface after reclamation would contrast with the varied texture of the vegetation against the exposed earth. The green dust control treatment would create a horizontal line at the top of the TSF, contrasting with the adjacent earth color and darker vegetation colors.

VISUAL CONTRAST RATING WORKSHEET

Date:	March 4, 2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Ray Mine TSF

Project Name: **Ray Mine Tailings Facility**	Location:	Location Sketch:
Key Observation Point: KOP 3 - Arizona Trail, Jake's Overlook	Township: 4S Range: 13E Section:	See Westland Resources worksheets below.
VRM Class: N/A		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Horizontal mass with rounded edges. Triangular peaks and drainages.		N/A
Line	Soft diagonal lines of drainages. Horizontal, undulating ridgeline.		N/A
Color	Relatively uniform, reddish brown, medium value.		N/A
Texture	Rocky, rough, uniform.	FG: rough MG: coarse	N/A

Proposed Activity Description (Facility)

	Landform/Water	**Vegetation**	**Structures (Retaining Walls and Power Poles)**
Form	Horizontal form of road and triangular shapes of cut slopes and retaining walls.	N/A	Power poles: Vertical, parallel lines, regular, linear. Retaining walls: geometric, triangular shapes.
Line	Horizontal and diagonal, hard edges, regular.	N/A	Power poles: Straight, hard edged, continuous, vertical. Retaining walls: straight horizontal and vertical lines.
Color	Uniform, cut slopes would have lighter color than weathered rock. Retaining walls would be light grey.	N/A	Power poles: Reddish brown, dark value. Retaining walls: light grey.
Texture	Cut slopes rough, retaining walls smooth.	N/A	Power poles and retaining walls: Smooth

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form	x								x			
	Line	x								x			
	Color	x								x			
	Texture		x								x		

Does project design meet visual resource management objectives?

N/A

Additional mitigating measures recommended?

Use of colored concrete and measures to create texture on retaining walls.

Evaluator Name(s): Susan Corser

Date:	March 4, 2014
District/Field Office:	Tucson
Resource Area:	
Activity (program):	Ray Mine TSF

The horizontal line of the road will be generally consistent with overall horizontal mass of ridge, but will contrast with the triangular massing and diagonal lines of the drainages. The regular shape and hard edges of the road will contrast with the undulating line of the ridgeline and softer lines of the drainages. The color of the retaining walls, cut slopes, and fill will be lighter than the existing weathered rock. The retaining wall's texture will be smooth relative to the coarser texture of existing land and vegetation.

The Power line's vertical form and straight lines will contrast with the large horizontal mass of the ridge and the softer lines and form of the diagonal drainages. The color will be similar in hue to the reddish earth, but create a contrast due to its darker value, and contrast with the green vegetation. The texture will be more continuous than the patchy/dotted texture of the land and vegetation.

VISUAL CONTRAST RATING WORKSHEET

Date:	March 4, 2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Ray Mine TSF

Project Name: **Ray Mine Tailings Facility**	Location:	Location Sketch:
Key Observation Point: KOP 4 – Arizona Trail Access	Township: 4S Range: 13E Section:	See Westland Resources worksheets below.
VRM Class: N/A		

Characteristic Landscape Description

	Landform/Water	**Vegetation**	**Structures**
Form	Rolling hills with steeper slopes at top of ridgelines, gentler slopes below, transitioning to flat floodplain. Triangular shapes of highest peak.	Rounded clumps on hillside. Irregular curvilinear shapes in floodplain.	N/A
Line	Strong sloping and curvilinear lines created by horizon. Softer diagonal lines of drainages. Horizontal line of valley floor.	Saguaro creates verticality among horizontal composition. Other vegetation curvilinear.	Horizontal line of trail.
Color	Reddish-brown medium value. Earth has more grey and warm tones in foreground of photo.	Medium value greens on ridge, with muted earthtones of vegetation in floodplain including reds, yellows,ochre, lavender of deciduous shrubs (without leaves). These are contrasted by dark green conifers.	N/A
Texture	Fine	Coarse texture in foreground, transitioning to medium and fine texture as landscape recedes.	N/A

Proposed Activity Description (Facility)

	Landform/Water	**Vegetation**	**Structures**
Form	Horizontal form of road and triangular shapes of cut slopes and retaining walls.		Power poles: Vertical, parallel lines, regular, linear. Retaining walls: geometric, triangular shapes.
Line	Horizontal and diagonal, hard edges, regular.		Power poles: Straight, hard edged, continuous, vertical. Retaining walls: straight horizontal and vertical lines.

Color	Uniform, cut slopes would have lighter color than weathered rock. Retaining walls would be light grey.		Power poles: Reddish brown, dark value. Retaining walls: light grey.
Texture	Cut slopes rough, retaining walls smooth.		Power poles and retaining walls: Smooth

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form	x											
	Line	x											
	Color	x											
	Texture		x										

Does project design meet visual resource management objectives?

N/A

Additional mitigating measures recommended? Use of colored concrete and measures to create texture on retaining walls.

Evaluator Name(s): Susan Corser

Date:	March 4, 2014
District/Field Office:	Tucson
Resource Area:	
Activity (program):	Ray Mine TSF

See KOP 3.

VISUAL CONTRAST RATING WORKSHEET

Date:	March 4, 2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Ray Mine TSF

Project Name: **Ray Mine Tailings Facility**	Location:	Location Sketch:
Key Observation Point: KOP 5 – State Route 177	Township: 4S Range: 14E Section: 16	See Westland Resources worksheets below.
VRM Class: No adopted VRM on BLM lands.		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG: Flat to rolling terrain. Horizontal bands in middleground, with rounded mountain tops. BG: Steeper, jagged peaks in far BG. Horizontal mass of Elder Gulch TSF.	Rounded clumps in foreground. Soft edges.	Horizontal band of TSF
Line	Horizontal hard-edged, curvilinear ridgeline. Zigzag line formed by top of mountains in BG. Horizontal, flat line of top of existing TSF.	Curvilinear, vertical seguaros.	Hard-edged straight horizontal line of top of TSF.
Color	MG: tan, warm colors. Light Red/tan on mountains. Blue in background. Light green of dust control treatment on Elder Gulch TSF. Variegated colors of existing TSF.	Olive green, foreground lighter in value. Some brown color.	N/A
Texture	FG: rough, coarse. BG: smooth, fine.	FG: rough MG: coarse patches	N/A

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Geometric, rectangular mass.	N/A	N/A
Line	Continuous, straight lines of TSF top and side. Horizontal line at top of TSF, diagonal line on face of impoundment.	N/A	N/A
Color	Light grey before reclamation, pink-tan after reclamation with green dust control treatment along the top of TSF.	N/A	N/A

Texture	Uniform. Smooth before reclamation, medium texture after reclamation.	N/A	N/A

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		x										
	Line	x											
	Color			x									
	Texture		x										

Does project design meet visual resource management objectives?

N/A

Additional mitigating measures recommended?

Evaluator Name(s): Susan Corser

Date:	March 4, 2014
District/Field Office:	Tucson
Resource Area:	
Activity (program):	Ray Mine TSF

TSF would appear as a long horizontal mass with a continuous, straight top edge, contrasting with the adjacent mountains with their diagonal lines and pyramidal shapes. The color after reclamation would be similar to the surrounding earth colors, but it would stand out due to the lack of green vegetation. The uniform texture will contrast with the existing landscape with its diversity of textures. The TSF would be similar to the existing Elder Gulch TSF in terms of form, line, color, and texture, a portion of which would be visible behind the Hackberry Gulch TSF.

VISUAL CONTRAST RATING WORKSHEET

Date:	March 4, 2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Ray Mine TSF

Project Name: **Ray Mine Tailings Facility**	Location: Township: 4S Range: 13E Section:	Location Sketch: See Westland Resources worksheets below.
Key Observation Point: KOP 6 – Arizona Trail, Mile 2		
VRM Class: No adopted VRM on BLM lands.		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Flat to rolling terrain in foreground transitioning to steeper, rounded slopes in the middleground. Horizontal mass of Elder Gulch TSF.	Rounded clumps	N/A
Line	Curvilinear forms of background mountains and middleground ridgelines. Diagonal lines of drainages.	Curvilinear, with occasional vertical lines of saguaro.	N/A
Color	Pink-tan	Primarily warm greens¸ interspersed with lighter, blue-greens.	N/A
Texture	Fine to medium.	FG: rough MG: coarse patches.	N/A

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Continuation of existing TSF. Horizontal, geometric form.	N/A	N/A
Line	Straight, horizontal.	N/A	N/A
Color	Light grey before reclamation, pink-tan after.	N/A	N/A
Texture	Fine before reclamation, medium after reclamation.	N/A	N/A

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		x										
	Line	x											
	Color		x										
	Texture	x											

Does project design meet visual resource management objectives?

N/A

Additional mitigating measures recommended?

Evaluator Name(s): Susan Corser

Date:	March 4, 2014
District/Field Office:	Tucson
Resource Area:	
Activity (program):	Ray Mine TSF

TSF would have similar line and form as the existing Elder Gulch TSF, but would contrast with its color and texture. The TSF would contrast with the surrounding landscape due to its geometric, straight form and lines, and its uniform texture and color.

VISUAL CONTRAST RATING WORKSHEET

Date:	3-4-2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Mining

WestLand Resources, Inc.
Engineering and Environmental Consultants

Project Name: Ray Mine Tailings Storage Facility (Ripsey Wash Alternative 3)	**Location:**	**Location Sketch:**
Key Observation Point #1a: View from Florence-Kelvin Highway to Ripsey Wash Alternative 3 (State Trust).	Township: 4S Range: 13E Section: 21	See attached.
VRM Class: Class III within BLM-administered lands.		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Undulating ridge tops in FG transitioning into steeper ridges that provide bold background skyline. Horizontal tops of tailings can be seen in MG.	Indistinct massing.	Vertical structures & diagonal lines associated with utility corridor that parallel road.
Line	Bold, curving existing unpaved roads in FG and FG-MG. Unpaved roads behind existing tailings are more visually prominent than tailings.	NA	Vertical & diagonal.
Color	Exposed slopes vary from 10R 8/4 (pink) to 2.5R 4/6 (red) to 2.5YR 8/3 (pink) per Munsell soil color chart. Slopes associated with tailings are within this range of colors. Pale blue cap on tailings is visible.	Dark & light greens.	Dark brown.
Texture	Fine to medium	Medium.	NA

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rectangular forms resulting from faces of tailings.	NA	All utility poles visible from this point will remain in same location.
Line	Strong horizontal & diagonal lines formed by tailings	NA	NA
Color	Color of tailings	NA	NA
Texture	Fine.	NA	NA

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast x Long Term

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form	x							x				x
	Line	x							x				x
	Color	x							x				x
	Texture	x							x				x

Does project design meet visual resource management objectives? NA

Additional mitigating measures recommended? NA

Evaluator Name(s): John Anderson 03-17-2014

Date:	
District/Field Office:	
Resource Area:	
Activity (program):	

View to northeast.

The most visible manmade features are existing unpaved roads.

VISUAL CONTRAST RATING WORKSHEET

Date:	3-4-2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Mining

WestLand Resources, Inc.
Engineering and Environmental Consultants

Project Name: Ray Mine Tailings Storage Facility (Hackberry Gulch Alternative 2)	**Location:**	**Location Sketch:**
Key Observation Point #1b: View from Florence-Kelvin Highway looking northeast to Hackberry Gulch Alternative 2 (BLM & private land).	Township: 4S Range: 13E Section: 21	See attached.
VRM Class: Class III within BLM-administered lands.		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Undulating ridge tops in FG transitioning into steeper ridges that provide bold background skyline. Horizontal tops of tailings can be seen in MG.	Indistinct massing.	Vertical structures & diagonal lines associated with utility corridor that parallel road.
Line	Bold, curving existing unpaved roads in FG and FG-MG. Unpaved roads behind existing tailings are more visually prominent than tailings.	NA	Vertical & diagonal.
Color	Exposed slopes vary from 10R 8/4 (pink) to 2.5R 4/6 (red) to 2.5YR 8/3 (pink) per Munsell soil color chart. Slopes associated with tailings are within this range of colors. Pale blue cap on tailings is visible.	Dark & light greens.	Dark brown.
Texture	Fine to medium	Medium.	NA

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	MG: Rectangular forms resulting from faces of tailings piles, similar to existing Elder Gulch tailings.	NA	NA
Line	Strong horizontal & diagonal lines formed by tailings, similar to existing Elder Gulch tailings.	NA	NA
Color	Similar to that of existing tailings.	NA	NA
Texture	Fine.	NA	NA

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast x Long Term

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				x				x				x
	Line				x				x				x
	Color				x				x				x
	Texture				x				x				x

Does project design meet visual resource management objectives? Yes

Additional mitigating measures recommended? No

Evaluator Name(s): John Anderson 03-17-2014

Date:	
District/Field Office:	
Resource Area:	
Activity (program):	

View looking northeast.

The most visible manmade features are existing unpaved roads.

VISUAL CONTRAST RATING WORKSHEET

Date:	2-5-2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Mining

WestLand Resources, Inc.
Engineering and Environmental Consultants

Project Name: Ray Mine Tailings Storage Facility (Ripsey Wash Alternative 3)	**Location:**	**Location Sketch:**
Key Observation Point #2: View from Arizona Trail (BLM) across Gila River to Ripsey Wash Alternative 3 (State Trust).	Township: 4S Range: 13E Section: 3	See attached.
VRM Class: Class III within BLM-administered lands.		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Natural ridgeline & drainages.	FG: Irregular form resulting from dense xeroriparian vegetation punctuated by strongly vertical saguaros.	Natural ridgeline & drainages.
Line	FG-MG: Sinuous curve of unpaved public road MG: Undulating ridgeline of Pinal Mountains silhouetted against sky.	Indistinct	NA
Color	FG: 10R 6/6 (light red) to 7.5YR 8/4 (pink) associated with roads.	FG: Mix of dark and light greens. FG-MG: Darker greens	NA
Texture	Fine to medium.	FG: Medium	Fine to medium.

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	FG-MG: Rectilinear forms generated by top and slopes of new tailings. Realigned Florence-Kelvin highway will also be visible.	Absence of vegetation at limits of tailings will reinforce forms associate d with tailings.	Power line that follows realigned highway will be visible, but will be much smaller than scale of tailings.
Line	FG-MG: Horizontal lines resulting from top of tailings. Possibly silhouetted against sky.	Same	Vertical power poles.
Color	Color of tailings slopes.	NA	Power poles.
Texture	Fine.	NA	NA

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form	x						x				x	
	Line	x						x			x		
	Color		x					x					x
	Texture	x						x					x

Does project design meet visual resource management objectives? NA

Additional mitigating measures recommended? NA

Evaluator Name(s): John Anderson 02-14-14

Date:	
District/Field Office:	
Resource Area:	
Activity (program):	

View looking to southeast toward Ripsey Wash.

VISUAL CONTRAST RATING WORKSHEET

Date:	2-5-2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Mining

WestLand Resources, Inc.
Engineering and Environmental Consultants

Project Name: Ray Mine Tailings Storage Facility (Hackberry Gulch Alternative 2)	**Location:**	**Location Sketch:**
Key Observation Point #3a (Jake's Overlook): View from AZ Trail (State Trust) southeast to Hackberry Gulch Alternative 2 (BLM and private).	Township: 4S Range: 13E Section: 2	See attached.
VRM Class: Class III within BLM-administered lands.		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG-MG: Natural ridgeline & drainages.	Irregular forms punctuated by vertical saguaro cacti.	FG-MG: Rectilinear residences in valley floor.
Line	FG: Horizontal line of AZ Trail. FG-MG: Unpaved public road MG: Undulating ridgeline of Pinals silhouetted against sky.	Sinuous curve of deciduous riparian veg that follows river.	NA
Color	10R 7/4 (pale red) to 10R 5/6 (red).	Dark & light greens associated with upland vegetation on slopes. Small amount of grey deciduous veg associated with river.	Light greys.
Texture	Fine to medium.	FG: Coarse due to regularly-spaced individual plants. FG-MB: Vegetation blends into medium texture.	Fine.

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	FG-MG: Rectilinear forms generated by top and slopes of proposed tailings, similar to existing tailings.	Absence of vegetation at limits of tailings will reinforce forms associate d with tailings.	Portions of new pipeline may be visible, but will probably be visually insignificant compared to scale of tailings.

Line	FG-MG: Horizontal lines resulting from top of proposed tailings, similar to existing tailings.	Same	NA
Color	Similar to color of tailings slopes.	NA	NA
Texture	Fine, similar to existing tailings.	NA	NA

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				x				x				x
	Line				x				x				x
	Color				x				x				x
	Texture				x				x				x

Does project design meet visual resource management objectives? Yes

Additional mitigating measures recommended? No

Evaluator Name(s): John Anderson 02-14-14

Date:	
District/Field Office:	
Resource Area:	
Activity (program):	

View looking southeast.

VISUAL CONTRAST RATING WORKSHEET

Date:	2-5-2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Mining

WestLand Resources, Inc.
Engineering and Environmental Consultants

Project Name: Ray Mine Tailings Storage Facility (Ripsey Wash Alternative 3)	**Location:**	**Location Sketch:**
Key Observation Point #3b (Jake's Overlook): View from AZ Trail (State Trust) to up- and downstream reaches of Gila River (State Trust & Bureau of Reclamation withdrawal).	Township: 4S Range: 13E Section: 2	See attached.
VRM Class: Class III within BLM-administered lands.		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG-MG: Steep slopes dropping into Gila River bottom.	Dense, undulating tree tops in river bottom (winter deciduous). Regularly spaced vegetation on slopes that repeat land form.	FG-MG: Rectilinear residences & roadways in valley floor.
Line	FG: Undulating ridgeline.	Sinuous curve of deciduous riparian veg that follows river.	NA
Color	Exposed slopes vary from 10R 4/ (weak red) to 10YR 7/2 (light grey) per Munsell soil color chart.	Dark & light greens associated with upland vegetation on slopes. Grey deciduous veg associated with river.	Light greys.
Texture	Fine to medium.	FG: Coarse due to regularly-spaced individual plants. FG-MB: Vegetation blends into medium texture.	Fine.

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Realigned Florence-Kelvin highway will cross face of slope in foreground. Subgrades associated with tops of cuts & bottoms of fills and faces retaining walls will be visible. Rock armoring (where necessary) associated with drainage structures will also be visible.	Absence of vegetation at limits of tailings will reinforce forms associate d with tailings.	Power line that follows realigned highway. Shiny guardrail steel may be visible. New pipeline bridge & pipelines over Gila will possibly be visible. If visible, form will be consistent with new highway bridge.

Line	Irregular horizontal lines formed by tops of cuts & bottom of fills and retaining walls across face of slope. Horizontal line created by roadbed.	Same	Power lines & poles will be visible. Guardrails will form horizontal line. If new pipeline bridge is visible, line will be consistent with new highway bridge.
Color	Cut and fill slopes & retaining walls will form dominant colors. Portions of roadbed will also be visible.	NA	Determined by colors of poles & roadway structures. If new pipeline bridge is visible, color will be consistent with new highway bridge.
Texture	Depending on soil types, cut slopes may be rocky and rough or smooth. Retaining walls can be fine to rough textured, depending on construction. Roadbed will be smooth.	NA	Fine.

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		x						x		x		
	Line		x						x		x		
	Color		x						x		x		
	Texture		x						x				x

Does project design meet visual resource management objectives? NA

Additional mitigating measures recommended? NA

Evaluator Name(s): John Anderson 02-14-14

Date:	
District/Field Office:	
Resource Area:	
Activity (program):	

View looking southwest toward western portion of ridgeline.

View west into downstream reach of Gila River.

VISUAL CONTRAST RATING WORKSHEET

Date:	2-5-2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Mining

WestLand Resources, Inc.
Engineering and Environmental Consultants

Project Name: Ray Mine Tailings Storage Facility (Ripsey Wash Alternative 3)	**Location:**	**Location Sketch:**
Key Observation Point #4: View from AZ Trail trailhead (Bureau of Reclamation withdrawal) across Gila River to face of nearby slope (State Trust).	Township: 4S Range: 13E Section: 1	See attached.
VRM Class: Class III within BLM-administered lands.		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	FG: Gentle to more steep slopes dropping into flat Gila River bottom. View of river hidden from view by vegetation & foreground slopes. Fill slopes associated with decommissioned road on opposite side of river are visible.	Dense, undulating tree tops in river bottom (winter deciduous). Regularly spaced vegetation on slopes that repeat land form.	NA
Line	FG: Undulating ridgelines sloping toward river. Diagonal line resulting from old road.	Sinuous curve of deciduous riparian veg that follows river.	NA
Color	Exposed slopes vary from 10R 4/ (weak red) to 10YR 7/2 (light grey) per Munsell soil color chart. Slopes associated with the reclaimed road vary from Gley1 8/10Y (light greenish grey) to 7.5R 7/2 (pinkish grey).	Dark & light greens associated with upland vegetation on slopes. Grey and very light greens associated with deciduous riparian vegetation.	NA
Texture	Fine. Fill slopes associated with old road are finely textured.	Fine to medium.	NA

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Realigned Florence-Kelvin highway will cross face of slope in foreground. Subgrades associated with tops of cuts & bottoms of fills and faces of retaining walls will be visible. Rock armoring (where necessary) associated with drainage structures will also be visible.	Absence of vegetation at limits of cut and fill slopes will reflect road design.	Power line that follows realigned highway. Shiny guardrail steel may be visible.
Line	Irregular horizontal lines formed by tops of cuts & bottom of fills and retaining walls across face of slope. Horizontal line created by roadbed.	NA	Power lines & poles may or may not be visible depending on time of day and if silhouetted against sky.

Color	Roadbed itself will probably not be visible, since it will be above view point. Cut and fill slopes and retaining walls will form dominant colors.	NA	Determined by color of poles.
Texture	Depending on soil types, cut slopes may be rocky and rough or smooth. Retaining walls can be fine to rough textured, depending on construction.	NA	Fine (smooth poles) in FG.

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form		x						x		x		
	Line		x						x		x		
	Color		x						x		x		
	Texture		x						x				x

Does project design meet visual resource management objectives? NA

Additional mitigating measures recommended? NA

Evaluator Name(s): John Anderson 02-06-14

Date:	
District/Field Office:	
Resource Area:	
Activity (program):	

View looking southwest across Gila River.

VISUAL CONTRAST RATING WORKSHEET

Date:	3-4-2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Mining

WestLand Resources, Inc.
Engineering and Environmental Consultants

Project Name: Ray Mine Tailings Expansion	**Location:**	**Location Sketch:**
Key Observation Point #5: View from SR 177 ROW north of Kearny to Hackberry Gulch Alternative 2 (BLM & private land).	Township: 4S Range: 14E Section: 16	See attached.
VRM Class: Class III within BLM-administered lands.		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Gentle bajada slopes in FG transitioning into steeper ridges that provide bold background skyline. Existing triangular tailings can be seen in MG.	Larger shrubs & trees associated with drainages give way to smaller shrubs on ridges.	Vertical structures & diagonal lines associated with utility corridor that parallel SR 177. Diagonal lines of guardrails on both sides of roadway.
Line	Diagonal lines of SR 177. Gentle bajada slopes. Horizontal top of tailings in FG-MG. Undulating and jagged ridges form background skyline.	Numerous upright saguaros against complex backdrop.	Vertical & horizontal.
Color	Exposed slopes vary from 10R 8/4 (pink) to 2.5R 4/6 (red) per Munsell soil color chart. Slopes associated with tailings vary from 10R 7/3 (pale red) to 2 5Y 7/3 (pale yellow). Light turquoise cap.	Dark & light greens.	Dark brown, steel grey.
Texture	Fine to medium	Medium.	NA

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rectangular forms resulting from faces of tailings piles, similar to existing Elder Gulch tailings.	NA	Visible?
Line	Strong horizontal & diagonal lines formed by tailings, similar to existing Elder Gulch tailings.	NA	NA
Color	Similar to that of existing tailings.	NA	NA
Texture	Fine, similar to existing Elder Gulch tailings.	NA	NA

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast x Long Term

		Features											
		Landform/ Water Body				Vegetation				Structures			
Degree of Contrast		Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				x				x				x
	Line				x				x				x
	Color				x				x				x
	Texture				x				x				x

Does project design meet visual resource management objectives? Yes

Additional mitigating measures recommended? No

Evaluator Name(s): John Anderson 03-17-2014

Date:	
District/Field Office:	
Resource Area:	
Activity (program):	

View to northwest.

VISUAL CONTRAST RATING WORKSHEET

Date:	2-5-2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Mining

WestLand Resources, Inc.
Engineering and Environmental Consultants

Project Name: Ray Mine Tailings Storage Facility (Hackberry Gulch Alternative 2)	**Location:**	**Location Sketch:**
Key Observation Point #6: View from AZ Trail (Bureau of Reclamation withdrawal) to Hackberry Gulch Alternative 2 (BLM & private land).	Township: 4S Range: 13E Section: 2	See attached.
VRM Class: Class III within BLM-administered lands.		

Characteristic Landscape Description

	Landform/Water	**Vegetation**	**Structures**
Form	FG: Rectilinear forms generated by slopes associated w/ tailings. FG-MG: Natural ridgeline & drainages.	Irregular forms punctuated by strongly vertical saguaro cacti.	FG-MG: Rectilinear residences in valley floor.
Line	FG: Diagonal lines of AZ Trail. Diagonal & horizontal lines resulting from tailings. MG: Undulating ridgeline of Pinals silhouetted against sky. Small curvilinear segment of San Fran River visible.	Diagonal lines formed by absence of vegetation at AZ Trail & tailings.	NA
Color	FG slopes (reclaimed road & bare slopes) vary between 5YR 6/3 (light reddish brown) to Gley 2 7/5B (light bluish grey). FG-MG slopes associated with tailings vary from 10R 5/4 (weak read) to 5YR 6/1 (gray). Bue-turquoise cap on top.	Dark & light greens associated with upland vegetation on slopes. Small amount of grey deciduous veg associated with river.	Light greys.
Texture	Finely textured slopes associated with tailings. Fine to medium texture on undisturbed slopes.	FG: Coarse due to regularly-spaced individual plants. FG-MB: Vegetation blends into medium texture.	Fine.

Proposed Activity Description (Facility)

	Landform/Water	**Vegetation**	**Structures**
Form	FG-MG: Rectilinear forms generated by top and slopes of proposed tailings, similar to existing tailings.	Absence of vegetation at limits of tailings will reinforce forms associate d with tailings.	NA
Line	FG-MG: Horizontal lines resulting from top of proposed tailings, similar to existing tailings.	Same	NA

Color	Similar to color of existing tailings slopes.	NA	NA
Texture	Fine, similar to existing tailings.	NA	NA

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				x				x				x
	Line				x				x				x
	Color				x				x				x
	Texture				x				x				x

Does project design meet visual resource management objectives? Yes

Additional mitigating measures recommended? No

Evaluator Name(s): John Anderson 02-14-14

Date:	
District/Field Office:	
Resource Area:	
Activity (program):	

View looking east.

VISUAL CONTRAST RATING WORKSHEET

Date:	3-4-2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Mining

WestLand Resources, Inc.
Engineering and Environmental Consultants

Project Name: Ray Mine Tailings Storage Facility (Hackberry Gulch Alternative 2)	**Location:**	**Location Sketch:**
Key Observation Point #7: View from Kearny Community Park to Hackberry Gulch Alternative 2 (BLM & private land).	Township: 4S Range: 14E Section: 27	See attached.
VRM Class: Class III within BLM-administered lands.		

Characteristic Landscape Description

	Landform/Water	Vegetation	Structures
Form	Gentle bajada slopes in FG transitioning into steeper ridges that provide bold background skyline. Existing triangular tailings can be seen in MG.	Solid vegetative cover across bajada in FG-MG. Less solid cover across background ridges.	Vertical structures & diagonal lines associated with utility corridor that parallel SR 177. Vertical light poles associated with park. Horizontal planter walls. Flat underlying concrete sidewalk.
Line	Diagonal line of SR 177. Gentle bajada slopes. Horizontal top of tailings in MG. Undulating and jagged ridges form background skyline.	Gentle diagonal that follows bajada slope.	Vertical & horizontal.
Color	Exposed slopes vary from 10R 8/4 (pink) to 2.5R 4/6 (red) per Munsell soil color chart. Slopes associated with tailings vary from 10R 8/4 (pink) to Gley2 5/5B (bluish grey).	Dark green.	Dark brown, steel grey, red stone wall, grey concrete sidewalk.
Texture	Fine to medium	Medium.	NA

Proposed Activity Description (Facility)

	Landform/Water	Vegetation	Structures
Form	Rectangular forms resulting from faces of tailings, similar to existing Elder Gulch tailings.	NA	NA
Line	Strong horizontal & diagonal lines formed by tailings, similar to existing Elder Gulch tailings.	NA	NA
Color	Similar to that of existing tailings.	NA	NA

Texture	Fine, similar to existing Elder Gulch tailings.	NA	NA

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast x Long Term

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				x				x				x
	Line				x				x				x
	Color				x				x				x
	Texture				x				x				x

Does project design meet visual resource management objectives? Yes

Additional mitigating measures recommended? No

Evaluator Name(s): John Anderson 03-17-14

Date:	
District/Field Office:	
Resource Area:	
Activity (program):	

View looking northwest toward existing Elder Gulch facility.

The park is located behind the town's commercial center. We saw two users. The park was modest in size and amenities, but appears to be maintained. It is immediately west of SR 177. Commercial truck traffic was evident throughout the site visit.

VISUAL CONTRAST RATING WORKSHEET

Date:	3-4-2014
District/Field Office:	Tucson
Resource Area:	NA
Activity (program):	Mining

WestLand Resources, Inc.
Engineering and Environmental Consultants

Project Name: Ray Mine Tailings Storage Facility (Ripsey Wash Alternative 3)	**Location:**	**Location Sketch:**
Key Observation Point #8: View from proposed trailhead (private) to proposed pipeline bridge (Bureau of Reclamation withdrawal).	Township: 4S Range: 13E Section: 12	See attached.
VRM Class: Class III within BLM-administered lands.		

Characteristic Landscape Description

	Landform/Water	**Vegetation**	**Structures**
Form	Horizontal roadway in FG backed by roadway berm. Bold angular slopes from existing tailings. Jagged & undulating ridgeline.	Rolling cottonwood canopies follow Gila in FG.	Steel bridge railing. Geometric roadway signs. Houses & structures can be seen through trees and in MG.
Line	Horizontal edge of roadway pavement. Horizontal layers of colored soils associated with faces of tailings. Bold horizontal tops of tailings contrast against ridgelines. Irregular tops of ridgelines.	Undulating crowns against dark green background.	Horizontal bridge structure & vertical bridge columns.
Color	Exposed slopes 2.5YR 7/4 (lightly reddish brown) per Munsell soil color chart. Slopes associated with tailings highly variable from Gley 1 8/10GY (light greenish grey) to 10R 5/8 (red). Thin pale blue cap on nearest tailings.	Dark & light greens.	Highly variable.
Texture	Fine.	Fine to medium.	NA

Proposed Activity Description (Facility)

	Landform/Water	**Vegetation**	**Structures**
Form	NA	NA	Horizontal bridge platform & vertical bridge columns.
Line	NA	NA	NA
Color	NA	NA	NA
Texture	NA	NA	NA

Distance Zones – FG: Foreground; MG – Middleground; BG: Background

Degree of Contrast x Long Term

		Features											
		Landform/ Water Body				Vegetation				Structures			
	Degree of Contrast	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None	Strong	Moderate	Weak	None
Elements	Form				x				x				x
	Line				x				x				x
	Color				x				x				x
	Texture				x				x				x

Does project design meet visual resource management objectives? Yes

Additional mitigating measures recommended? No

Evaluator Name(s): John Anderson 03-17-2014

Date:	
District/Field Office:	
Resource Area:	
Activity (program):	

Looking northwest across existing local road.

7.0 FIGURES

Figure 1, Scenic Quality Ratings

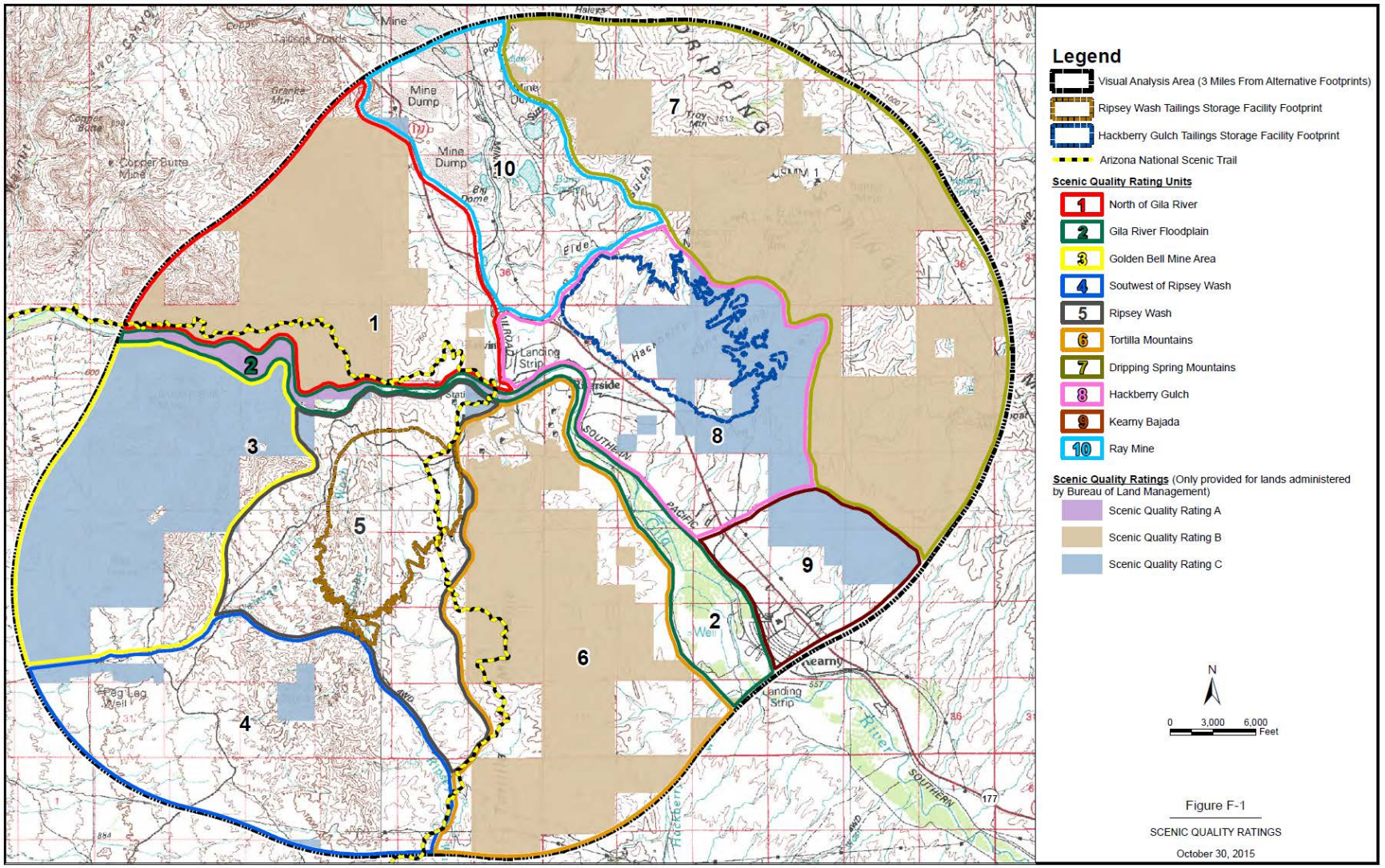

Figure 2, Visibility from Arizona National Scenic Trail

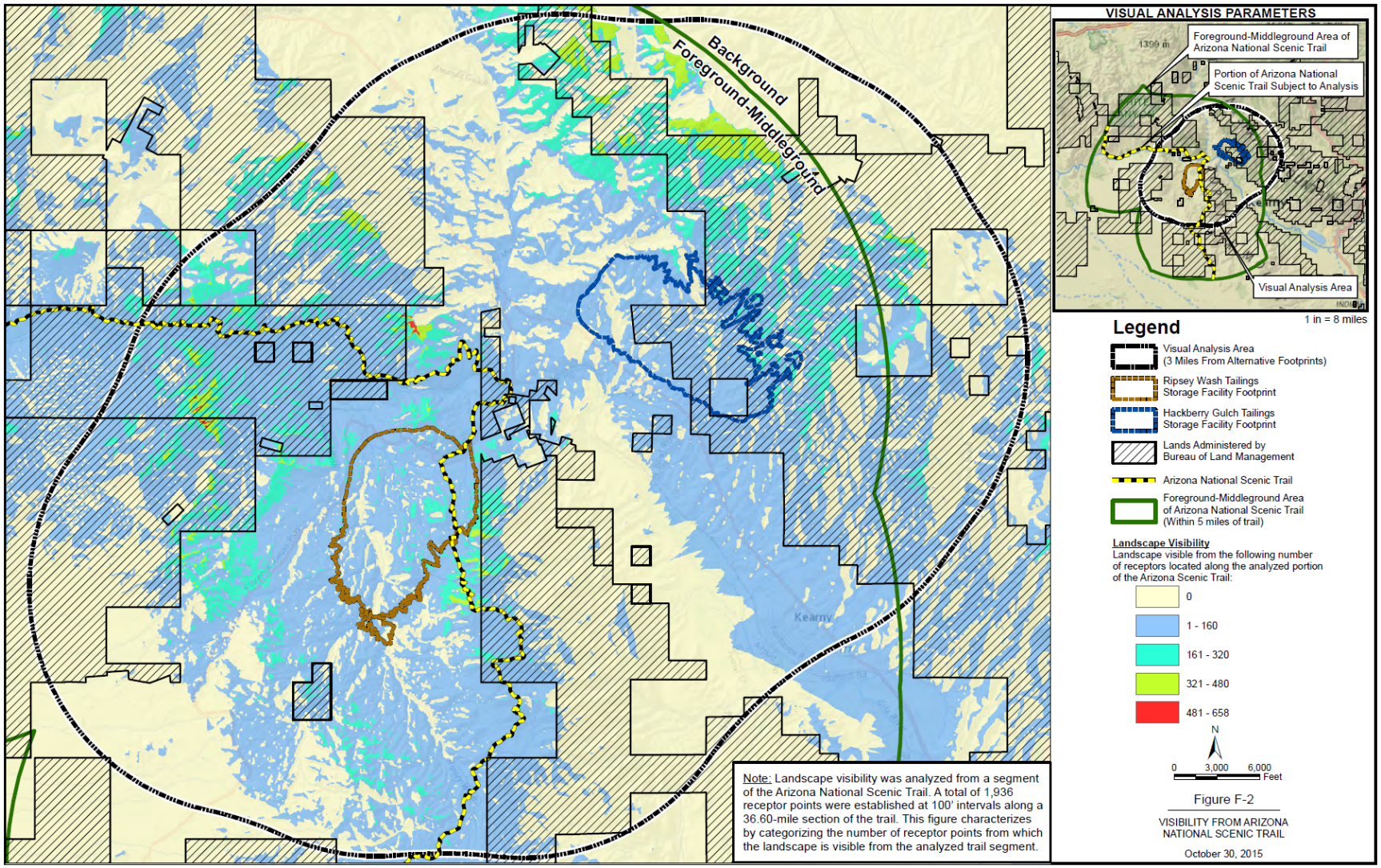

Figure 3, Arizona National Scenic Trail Distance Zones

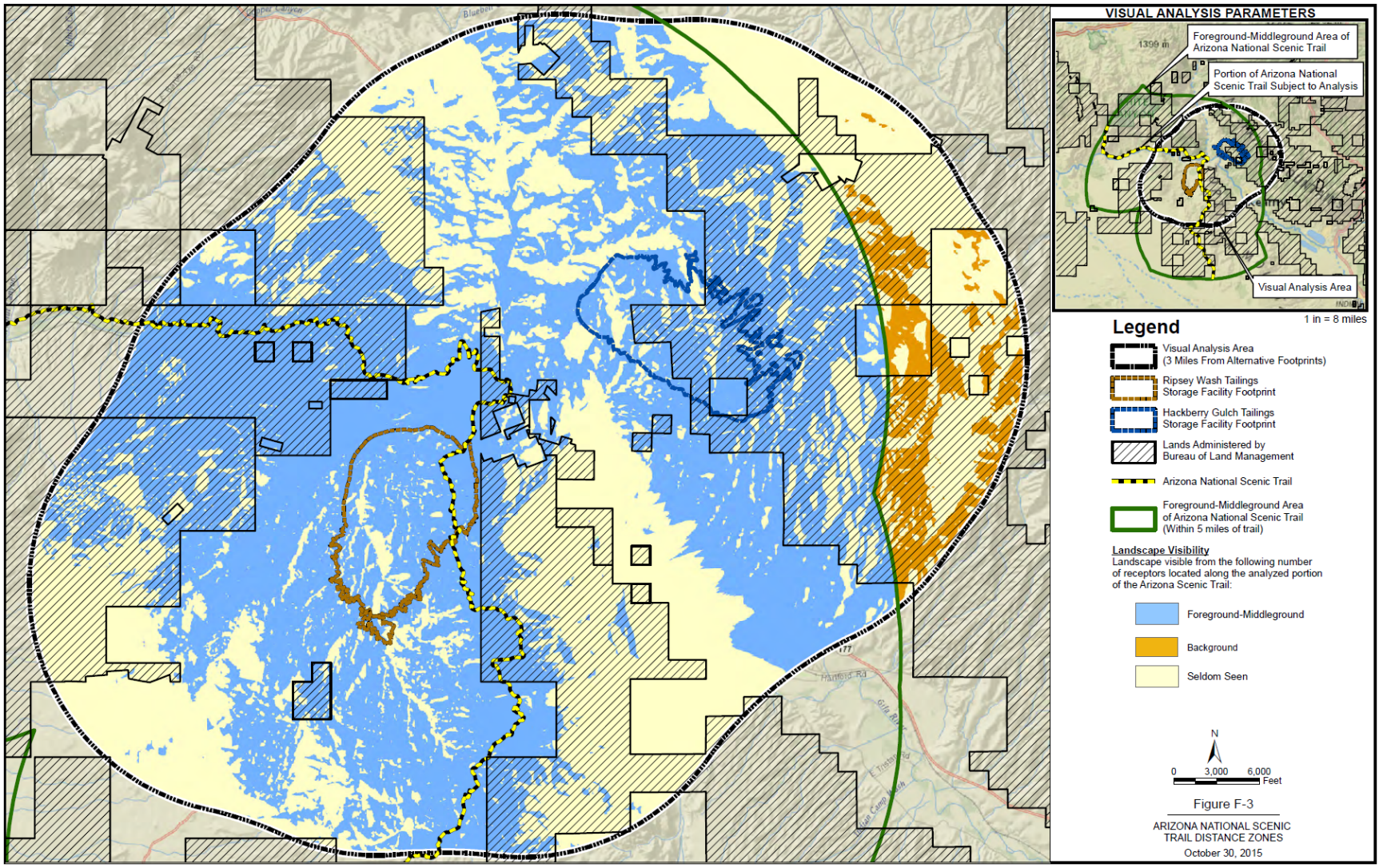

Figure 4, Visual Resource Inventory (VRI) Classes