SAMPLING AND ANALYSIS PLAN

Section 4.0

Vegetation

OCTOBER 2009

Submitted To:

New Mexico Mining and Minerals Division
&
U.S. Forest Service (Cibola National Forest)

Prepared by:

Roca Honda Resources, LLC
4001 Office Court, Suite 102, Santa Fe, NM 87507

Contents

Figures

Tables

Appendices

4.0 Vegetation

4.1 Introduction and Background

Surveys for sensitive, threatened, or endangered plant species in the Roca Honda permit area were conducted in 2006 (Wood 2006a, 2006b). Complete lists of all the species found at the site are tabulated and a general account of the plant communities in Sections 9, 10, and 16 are given in this section. A map showing the three main vegetation classifications in the permit area is provided in Figure 4-1.

The Roca Honda permit area was surveyed from July 31 through August 8, 2006 (Sections 9, 10, and 16) and from September 11 through October 19, 2006 (Sections 9 and 10). The survey was accomplished by walking parallel transects through the area spaced at 50-ft to 75-ft intervals, depending on the habitat and terrain. The 2006 surveys did not attempt to measure cover, density, or productivity as those tasks were beyond the scope of the surveys at that time. Surveys to measure these parameters were initiated in spring 2008.

4.2 Sampling Objectives

This SAP describes the sampling and analysis activities to be performed in order to meet the following sampling objectives:

- Complete a plant species inventory.
- Provide descriptions of the existing vegetation types within the permit area. Include quantitative measurements of:
    - Vegetation and ground cover.
    - Shrub and tree density.
    - Herbaceous productivity.
- Develop a map which delineates existing vegetation types.

4.3 List of Data to be Collected

Four additional data needs for vegetation were identified and are summarized in Table 4–1. The proposed investigation to address the data needs is also identified in the table.

Table 4-1. Data Needs Identified for Vegetation Type Analysis

Data Needs	Plan to Address Data Needs
Vegetation map	A vegetation map will be prepared using a combination of aerial photographs, topographic maps and field surveys. The field assessments will involve surveying transect lines to collect quantitative measurements of vegetation cover.
Vegetation productivity measurements	Enclosures will be established and plant samples weighed after the growing season to determine productivity of the herbaceous cover.
A complete plant species inventory	A partial plant species inventory has been made. Additional surveys for spring- and fall-flowering species will be performed.
Assessment of the potential impacts of high water volume discharge in an unnamed arroyo draining to San Mateo Creek	A survey of the vegetation in the drainage running from Section 16 to Section 21 and into San Mateo Creek will be performed.

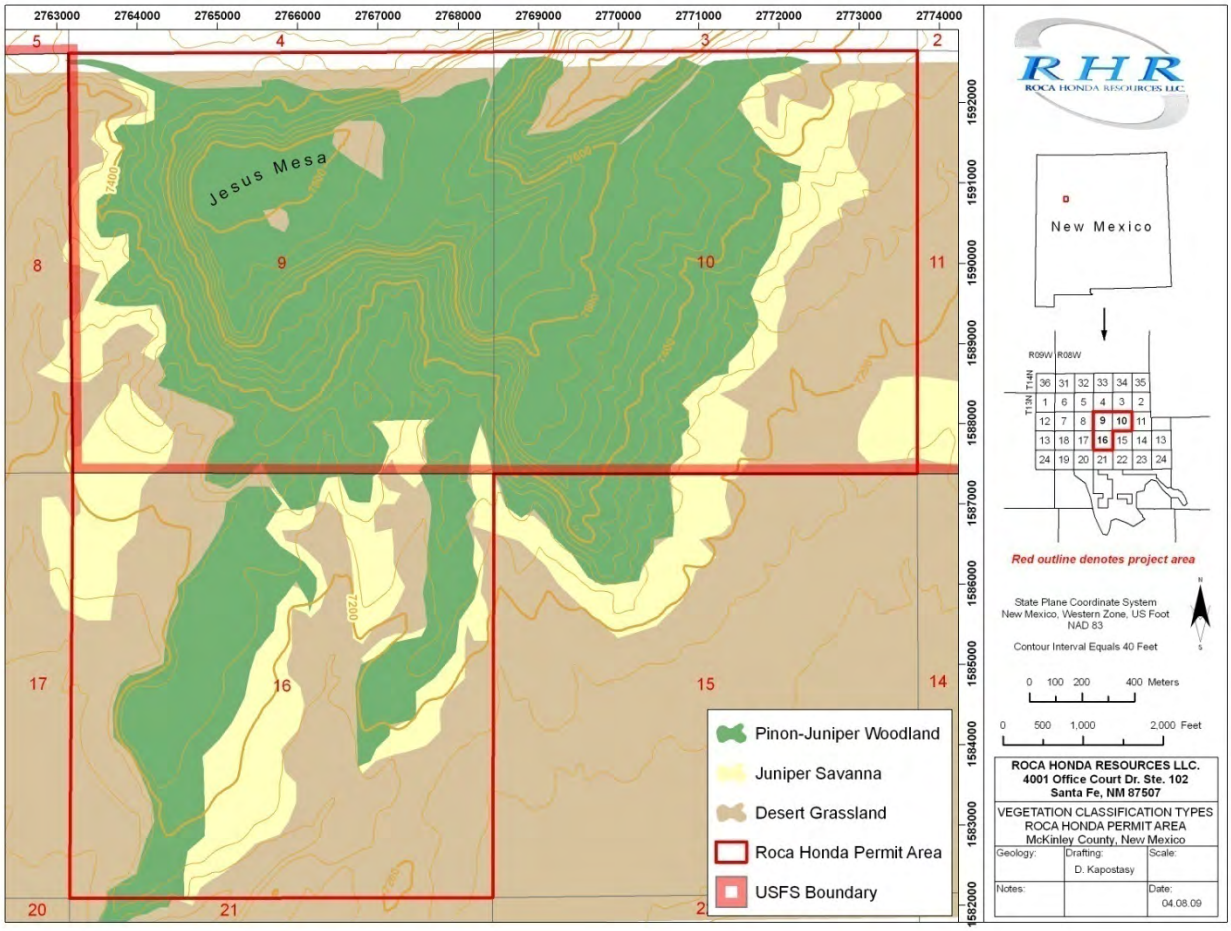

Figure 4-1. Vegetation Classification in the Roca Honda Permit Area

Figure 4-2 shows the locations of vegetative survey areas (i.e., exclosures, transects) established to gather baseline vegetation data. A total of ninety-eight (98) vegetative transects were distributed throughout the project site, but were more numerous in those areas that were indicated to be potentially impacted by the mining activities. A grid was placed over a topographic map of the project site and the grids numbered. The sample locations (exclosure and transect line) were determined by randomly choosing points within each USGS quad with some restrictions: specific vegetation types for analysis were targeted and the random point was discarded if it was found to fall outside of the type targeted. For example, if the potential location of a transect line or exclosure destined to describe the juniper savanna fell on an historic drill hole, the point was discarded and the next random location was used. Another restriction was that the grid system and random number generator were set up so that transects would be distributed approximately evenly throughout the site. An additional restriction was placement of exclosures. Exclosures were placed so that they were only located in vegetation types with appreciable grass cover. For example, no exclosures were placed on bedrock. One or more transect lines were surveyed at each exclosure site.

The general vegetation types encountered at the Roca Honda permit area are described in Section 4.4. Detailed descriptions, including quantitative measurements of cover, density, and productivity of the various plant communities will be made and a vegetation map will be prepared. Additional surveys for spring- and fall-flowering species will be performed to complete the plant species inventory. To evaluate rangeland health for a given location, i.e., pre-mining livestock grazing conditions, NCRS guidelines use 17 indicators to assess three ecosystem attributes: soil and site stability, hydrologic function, and biotic integrity (National Research Council 1994, Pyke et al. 2002, Pellans et al. 2005). These indicators include rills, water flow patterns, pedestals and terracettes, bare ground, gullies, wind scour and depositional areas, litter movement, soil resistance to erosion, soil surface loss or degradation, plant composition relative to infiltration, soil compaction, plant functional/structural groups, plant mortality, litter amount, annual production, invasive plants, and reproductive capability. Quantitative measures of bare ground, microbiotic crust, litter and plant cover will be made using the point intercept method. Plant functional/structural groups will be described by considering the species observed along each transect line. Qualitative observations will be made and recorded in the field notes on plant mortality, evidence of plant reproduction, the extent of pedestals, livestock trails, and evidence of disturbance. The survey results will be reported in the updated Baseline Data Report to be submitted with the Permit Application.

4.4 Methods of Collection

4.4.1 Plant Species Inventory

4.4.1.1 Plant Species Compilation

Surveys for plant species in the Roca Honda permit area within Sections 9 and 10 were made from July 31 through August 8, 2006, and from September 11 through October 19, 2006 (Wood 2006a). Surveys for plant species in the project area within Section 16 were made from July 31 through August 8, 2006 (Wood 2006b). These surveys generated an excellent inventory which will be further supplemented by surveys conducted to capture blooming species. Specimens will be collected for:

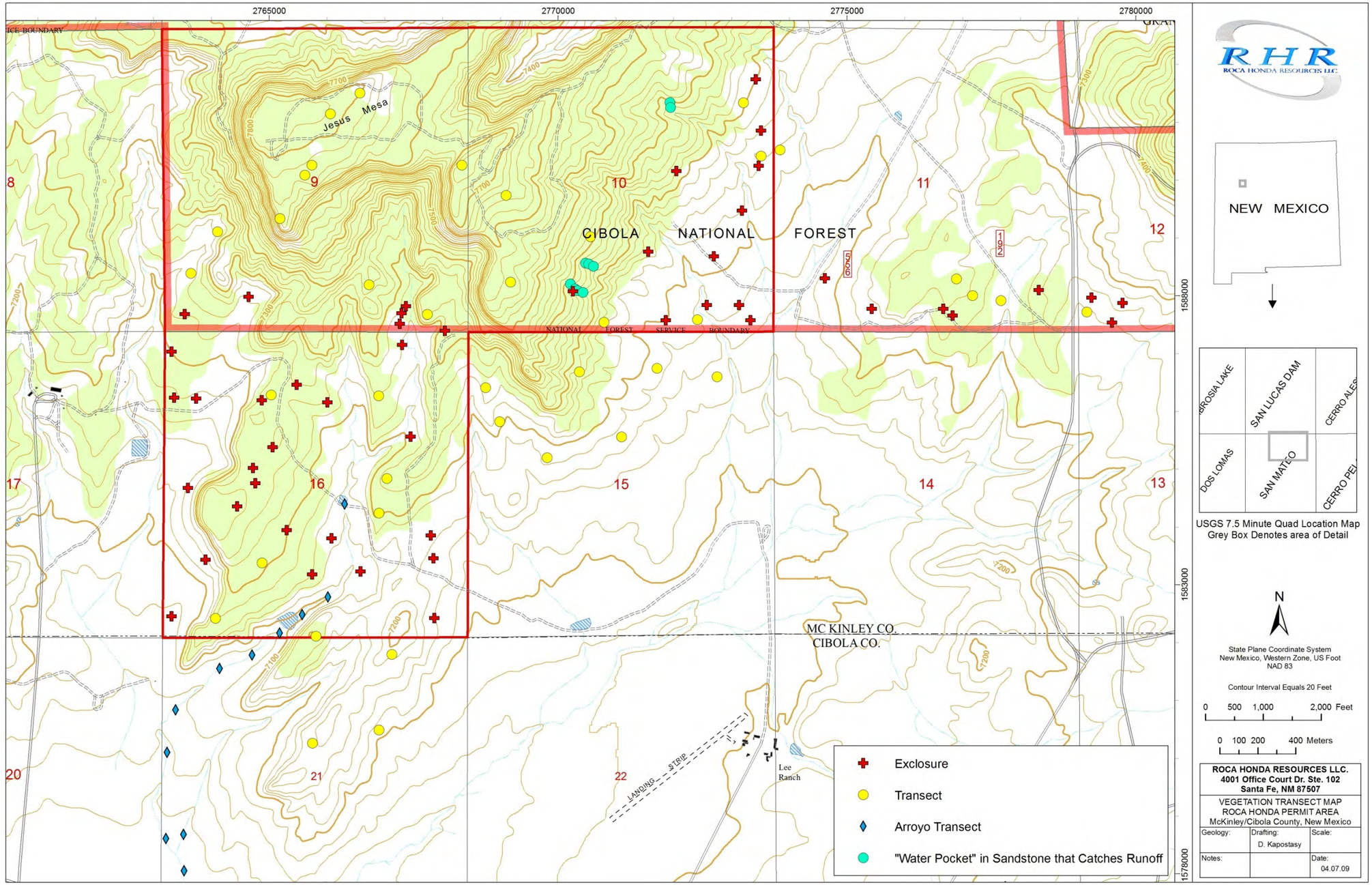

Figure 4-2. Vegetation Transect Line and Exclosure Locations in the Vicinity

- Any species of special concern.
- Any species that is similar to a plant of special concern.
- Any species not previously recorded in New Mexico.
- Any species out of its known range.

However, no specimens will be collected if the plant species is listed as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS). In such cases, the location of the plant(s) will be recorded and photographs taken so that their presence can be confirmed in the future by appropriately permitted botanists.

This inventory of plant species will provide a measure of the diversity encountered at the site. Particular attention will be made to find sensitive species, and noxious non-native species. In addition, potential impacts on USFS-designated Management Indicator Species (MIS) will also be evaluated during the surveys. Currently, no plant MIS are known to be present within the project area.

4.4.1.2 Plant Species of Special Concern

All plant species encountered during the inventory surveys will be identified so there is the opportunity to locate sensitive species that are not otherwise expected to occur at the site. If identification of a plant species is not possible in the field, a specimen will be collected and pressed for examination and identification later. Plants of special concern located on or adjacent to the project site will be specifically noted and their location (Universal Transverse Mercator [UTM] coordinates) recorded.

The combination of geology, hydrology, habitat types, soils, aspect, and elevation in Sections 9 and 10 do not provide potential habitat for the sensitive plant species considered threatened, endangered, or species of concern that are likely to occur in McKinley and Cibola Counties (Wood 2006a). There are limited areas of potential habitat for two species of concern, naturita milkvetch (*Astragalus naturitensis*) and laguna fameflower (*Talinum brachypodium*), within the project area in Section 16 (Wood 2006b). Also, selenium accumulator species may exist in the permit area. They will be noted if they exist and their location (UTM coordinates) recorded.

Typically, plant species are most definitively identified if they are in flower and/or in fruit depending upon the species. A plant inventory survey in the spring will be performed to search for naturita milkvetch (flowers late April to May). A similar survey will be performed in the summer, i.e., late June for laguna fameflower (flowers June to August).

4.4.1.3 Invasive Non-Native Species (Weeds)

All non-native plant species encountered at the project site will be identified in the plant species inventory list. Any non-native species considered noxious by the state of New Mexico (Gonzales 2009) will be recorded, and their abundance and area of cover estimated. If noxious non-native plant species comprise more than 25 percent of the vegetation cover on two or more contiguous acres, these areas will be mapped as distinct vegetation types. If there are areas that are not as

large as 2 acres, but the stand of noxious weeds is particularly dense, then coordinates of those locations will also be recorded and mapped as a point on the vegetation map.

4.4.2 Vegetation Descriptions

Vegetation cover, total ground cover, individual species and their respective cover, and tree and shrub densities will be documented for each vegetation type. Productivity will be measured.

4.4.2.1 Vegetation Cover

Each plant community type description will include the vegetation composition, the dominant plant species, characteristic topography, soil types, average slope, aspect, and interspersion with, or relationship to, other community types. Therefore, the "vegetation type" concept used in this report may be likened to USFS "ecological types" (FSH 2090.11).

4.4.2.2 Data Collection and Analysis of Cover

Vegetation cover will be measured using the point intercept method along a 165 ft-long transect line (Elzinga et al., 2001). The cover that intercepts the line at 3 ft intervals along the 165 ft transect will be recorded. Using this method, the total cover can be calculated as the percentage of interceptions ("hits"), relative to the total number of points sampled (e.g. see Forest and Range.org at http://www.forestandrange.org/modules/vegmonitor/mod9/mod9-14.shtml). Overlapping hits on the line intercept transects will be recorded and interpreted in the following manner. When the canopy of multiple species overlap or the canopy overhangs bare ground, litter, or gravel/coarse sand, all the cover-types will be recorded. Only one hit will be recorded if the laser sampling light hits the same species multiple times.

The heights and circumferences at breast height of piñon and ponderosa pine trees within 10 meter belt transects will be measured. The heights and circumferences of additional piñon and ponderosa pines will also be measured (six of each species in Sections 9, 10, 15, 16 and 21). UTM coordinates will be recorded for each of these additional trees. Extrapolations will be made using the heights of the trees and their dimensions on the aerial photographs. The cover of individual plant species will also be estimated by recording the plant species name when intercepted by a point.

Wildlife habitat survey information, such as canopy cover, will be recorded at medium-large mammal sampling stations in Sections 9, 10, 11, 15, 16, and 27 during wildlife surveys. Additional bat surveys, to include acoustical monitoring and associated habitat measurements, will be performed.

The point intercept method is objective and fairly rapid. Floyd and Anderson (1987) found that the point intercept method achieved the same level of precision as the line-intercept method while taking one third of the time (Elzinga et al., 2001). In some cases, this method can tend to overestimate cover (Korb et al., 2003). A disadvantage of the method is that species with low cover values are often not effectively sampled because points so rarely intersect them (Korb et al., 2003). However, this shortcoming will be mitigated by making visual estimates of relative abundance of each species in 30 ft squares at 0 ft, 80 ft, and 165 ft along the transect lines when describing each community.

The vegetation types will be characterized by species composition but may also be subdivided by topographic features and soils. With the information currently available, there appear to be at least six (6) basic vegetation types:

- Desert grassland.
- Piñon-juniper woodland.
- Drainage bottom.
- Piñon-juniper and juniper savanna.
- Rimrock vegetation.
- Steep slopes vegetation.

The desert grasslands at the permit site may be subdivided into two types according to composition: (1) dominant grass *Bouteloua hirsuta* (hairy grama), with galleta (*Pleuraphis jamesii*), sand dropseed (*Sporobolus cryptandrus*), little bluestem (*Schizachyrium scoparium var. scoparium*) (Wood 2006a); and (2) dominant grass hairy grama with ring muhly (*Muhlenbergia torreyi*) (Wood 2006b). The desert grasslands are heavily grazed, which suggests high heterogeneity. Because of the variable soils and topography at the site, after closer examination in the field, the desert grassland vegetation type may be divided into multiple vegetation types.

Using the point-intercept and/or belt intercept methods, it is anticipated that a minimum of 15 transects per vegetation type will be utilized. The exception is on the steep slopes, where surveying transect lines is unlikely to be feasible. These areas will be described and ocular estimates of cover reported.

Shrubs will be counted within 3 ft of the 165 ft transect lines (belt transects) that are used to estimate ground cover. All trees will be counted and their heights measured (using a clinometer) within 30 ft each side of the transect line. Data will be recorded by species and then analyzed to formulate tree, full shrub (woody species), and sub-shrub (suffrutescent species) density values for each community type. Tree density will also be assessed using the aerial photographs and images on Google Earth (http://earth.google.com/tour/thanks-win4.html).

4.4.2.3 Transect Line Sampling Locations

A grid will be placed over the entire project site on a topographic map on which the various vegetation types have been mapped using information from aerial photographs. Within each vegetation type, sampling location coordinates will be randomly generated so that the data can be analyzed using parametric statistics. Random numbers between 1 and 360 will be generated to orient each transect. A compass will then be used to orient the transect line in the field. If a transect length exceeds the individual vegetation-type boundary, the transect line will be re-oriented to fit within the vegetation type. If re-orientations are necessary, then more details of the process will be provided in the field report.

4.4.2.4 Cover Parameters

Data will be collected for the following categories (Appendix A: Field Data Collection Forms):

- Percent cover for each plant species.
- Percent total vegetation cover (= sum of all species).
- Percent total ground cover (= vegetation + litter + rock + gravel).
- Percent bare ground.

Percent total vegetation cover will also be broken down by total forb, total grass, and total shrub cover. These parameters will aid in estimating the potential to provide wildlife habitat and forage for livestock grazing. Litter is any plant part found lying on the ground surface whose structural integrity remains recognizable.

4.4.2.5 Vegetation Cover Other Than That Directly Recorded along Transects

The following parameters will be tabulated in the report:

- Total acreage of each vegetation type potentially affected by mining and associated activities.
- Percent of each vegetation type potentially affected by mining and associated activities.
- Total acreage of all other mapping units (e.g., existing disturbed areas).

4.4.2.6 Herbaceous Productivity Measurements

There are various methods used to obtain a measure of plant productivity; for example, leaf area index measures of above ground biomass, and remote sensing imaging technologies have all been used to measure productivity (Breckenridge et al., 1995, Hunt et al., 2003). The current standard for an accurate measurement of herbaceous plant productivity is to measure above ground biomass by clipping, weighing, oven drying, and re-weighing vegetation that has been growing in an area (exclosure) that has been protected from grazing.

Herbaceous productivity measurements will be made in the two principal vegetation types: desert grassland and piñon juniper savanna. Exclosures will be erected in representative areas through each of the vegetation types. The number will take into account a potential loss of three exclosures per vegetation type due to environmental or ungulate disturbance. Arithmetic mean, standard deviation, mode, and median productivity measurements will be tabulated and compared with published productivity measurements in those vegetation types. The exclosures were set out in March 2008. All herbaceous plant material within the designated sample area will be clipped as close to the ground as possible in August 2008. The material will be weighed, placed in an oven for a designated time period, removed, and re-weighed.

4.4.2.7 Photo Points

Photo points will be recorded using UTM coordinates. Permanent markers, such as rebars, will not be used because they could be lost during subsequent mining activity. A 3.5-inch × 5-inch photograph showing the general features of each community type will be provided in the vegetation section. The location of the photo points will be noted on the vegetation map.

4.4.3 Vegetation Mapping

This vegetation mapping effort will document the state of pre-mining vegetation. Initially, aerial photographs will be used to delineate the vegetation communities within the project area.

The accuracy of the delineation of the vegetation cover mosaic within the project area will be confirmed by field (ground-truth) surveys. The whole area will be surveyed (walked) by the botanist who is developing the vegetation map. Sampling specific sites to ground-truth plant communities will be randomly chosen prior to fieldwork using the aerial photographs. In addition, areas that appear to be in any way ambiguous will also be checked and may be revisited

several times during the growing season to confirm the vegetation structure. Transects sampled for vegetation descriptions and ground-truth purposes will be marked on a map.

All man-made landmarks (e.g., stock tanks, power lines, fences, roads, drill pads) will be recorded on the map. These features will also be documented on the vegetation map. Areas with surface water (e.g., springs, seeps, or ponds) will be surveyed and mapped because of the importance of aquatic/wetland features to the ecological functioning of the landscape.

Additional features of biological/ecological interest will also be mapped. These may include stands of invasive non-native plant species that are smaller than a defined community type, particularly large trees or sizable patches of well-developed microbiotic crusts. The scale of the vegetation map will match the requirement of the USFS or the State. It is anticipated that the vegetation map will be created in ArcGIS 9.2.

4.5 Parameters to be Analyzed

Data will be collected for the following categories:

- Percent cover for each plant species.
- Percent total vegetation cover (= sum of all species).
- Percent total ground cover (= vegetation + litter + rock + gravel).
- Percent bare ground.

Percent total vegetation cover will also be broken down by total forb, total grass, and total shrub cover. These parameters will aid in estimating the potential to provide wildlife habitat and forage for livestock grazing.

4.6 Maps Providing Sampling Locations

See Figure 4-2 identifying the vegetation sampling locations.

4.7 Sampling Frequency

Data will be collected along transect lines in the summer. The plant species inventory activities will occur monthly from spring through the fall.

Herbaceous productivity measurements were initiated in March 2008, and sampling will occur later in the summer. This time period has been selected in order to coincide with the potential growing season (April through August) of the dominant grass species hairy grama. This species is a warm-season, short-lived, perennial shortgrass. Biomass production of hairy grama positively correlates with precipitation during the growing season (Zlatnik 1999). If there is no precipitation by August, sampling will be postponed until September.

4.8 Laboratory and Field Quality Assurance Plan

4.8.1 Personnel

Following the most currently accepted survey protocols, as determined by federal and state agencies, will ensure that utilized methods are standardized. Customary regulations require that surveys and data collection be conducted by a qualified person. The Field Leader will have a

combination of education and field experience of a qualified field botanist. Members of the field crew will have at least a Bachelor's of Science degree in a relevant field or be enrolled in a program where there has been sufficient course work to qualify as field experience. Names and qualifications of individuals involved in project surveying and data collection will be included in annual reports and survey reports.

4.8.2 Sampling Plan

Program parameters must remain relatively constant over time in order to avoid bias and encourage continuity. Maintaining program integrity will create a more accurate overview and analysis of vegetation present and a more through representation of project impacts.
To evaluate the plan for sources of error, the sampling design and monitoring protocols will be reviewed by an experienced independent biologist before implementation. In order to avoid type I (missing important changes) or type II (falsely concluding that changes have taken place) errors, the same independent professional will make a critical review of the methods and conclusions by assessing the logic used and the validity of procedures.

4.8.3 Field and Laboratory QC

The sampling exclosures will not be erected in shaded areas. Samples will be collected in the afternoon. Samples will not be collected within 24 hours of rainfall. Plastic gloves will be worn to prevent moisture and oil from the hands contaminating the samples. All samples will be placed in zip-lock plastic bags, double bagged with as much air removed as practical, and labeled to identify the sample and date collected. Extra debris (e.g., dirt, rocks, and pellets) will be removed. The samples will be cooled below the condensation temperature by placing them in an ice chest with ice packs for transportation to the laboratory. Samples will be stored in a refrigerator until processing. Samples will be weighed, cut prior to drying and spread out uniformly on the drying tray to make sure the drying process is even, and then reweighed. The laboratory will ensure that the balance has a current calibration and will zero check the balance several times during the process to ensure the accuracy of the balance. The data will be recorded for each sample number. The Field Leader will check the laboratory data and compare it to standard published information for the species to look for suspect results. The data will be mapped and reported as baseline results.

4.9 Brief Discussion Supporting Proposal

The plans outlined will provide an accurate description of the existing vegetation at the Roca Honda permit area. Surveying the site monthly will capture both short-lived annuals and perennials for the plant species inventory. Surveys in April and June are appropriate to observe and identify the two sensitive species most likely to occur at the permit area.

Surveying transect lines using the point intercept method accurately quantifies cover (Elzinga et al., 2001). A disadvantage of the method is that species with low cover values are often not effectively sampled because points so rarely intersect them (Korb et al., 2003). However, this shortcoming will be mitigated by making ocular estimates of relative abundance of each species that occur in 30 ft squares at 0 ft, 80 ft, and 165 ft along the transect lines. In this way, low cover and/or species occurring at low frequency will be included in the quantitative vegetation type descriptions. Making ocular estimates of cover of each species that occur in relatively large areas along the transect lines is more likely to pick up species that occur

infrequently or contribute a very small proportion of canopy cover. That is, species that may have a canopy cover far less than one percent (1%) will be recorded.

Measuring aboveground biomass, which involves clipping, weighing, oven drying, and re-weighing vegetation growing in an exclosure will be performed to provide an accurate measurement of herbaceous plant productivity. The time selected for this study was chosen to coincide with the growing season (late March through August) of the dominant grass species hairy grama. Biomass production of hairy grama is positively correlated with precipitation during the growing season (Zlatnik 1999). Therefore, a relatively long period (5 months) between setting up the exclosures and harvest has been selected to ensure the greatest likelihood that precipitation will occur during the potential growing period.

4.10 References

Breckenridge, R.P., W.G. Kepner, and D.A. Mouat, 1995. "A Process for Selecting Indicators for Monitoring Conditions of Rangeland Health," *Environmental Monitoring and Assessment*, 36: 45–60.

Elzinga, C., D. Salzer, J. Willoughby, and J. Gibbs, 2001. *Monitoring Plant and Animal Populations*, Blackwell Scientific Publishing, Boston, Massachusetts.

Floyd, D.A., and J.E. Anderson, 1987. "A Comparison of Three Methods for Estimating Plant Cover," *The Journal of Ecology*, 751 (1): 221–228.

FSH (Forest Service Handbook) 2090.11. "Ecological Classification and Inventory Handbook," *Forest Service Handbook*, WO Amendment 2090.11-91-1, U.S. Forest Service, Effective 4/26/91.

Gonzales, I. Miley. 2009. New Mexico Noxious Weed List Update April 2009, Available online at: http://www.nmda,nmsu.edu/animal-and-plant-protection/noxious-weeds/weed_memo_list.pdf

Hunt, Jr., E.R., J.H. Everitt, J.C. Ritchie, M.S. Moran, D.T. Booth, G.L. Anderson, P.E. Clark, and M.S. Seyfried, 2003. "Applications and Research Using Remote Sensing for Rangeland Management," *Photogrammetric Engineering & Remote Sensing*, 69(6): 675–693.
Korb, J.E., W.W. Covington, and P.Z. Fulé, 2003. "Sampling Techniques Influence Understory Plant Trajectories After Restoration: An Example from Ponderosa Pine Restoration," *Restoration Ecology*, 11(4): 504–515.

National Research Council 1994. Rangeland Health: New Methods to Classify, Inventory, and Monitor Rangelands. National Research Council Board on Agriculture Committee on Rangeland Classification. National Academy Press, Washington DC. Available online: http://www.nap.edu/openbook.php?record_id=2212&page=R1

Pellant, M., Shaver, P., Pyke, D.A., Herrick, J.E., 2005, Interpreting Indicators of Rangeland Health-Version 4. Bureau of Land Management, Nationsl Science and Technology Center Technical Reference 1734-6, pp. 122.

Pyke, D.A., Herrick, J.E., Shaver, P. and Pellant, M. 2002. Rangeland Health Attributes and Indicators for Qualitative Assessment. Journal of Range Management 55 (6): 584-597.

Wood, B., 2006a. Strathmore Minerals Corp., Roca Honda Sections 9 & 10, Botanical Report, December 26, 2006.

———, 2006b. Strathmore Minerals Corp., Roca Honda State Section, Botanical Report, October 7, 2006.

Zlatnik, E., 1999. "Bouteloua hirsute," in: *Fire Effects Information System*, U.S. Department of Agriculture Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer), available online at http://www.fs.fed.us/database/feis/ [accessed February 7, 2008].

Appendix A

Field Data Collection Forms

Table A–1, Overview of Plant Community Form, includes general vegetation composition, the dominant plant species, characteristic topography, soil types, average slope, aspect, and interspersion with, or relationship to, other community types.

Table A–1. Overview of Plant Community Form

Map Site #	**UTM Northing**	**UTM Easting**	**Date**
Project name:			
Surveyor name(s)			
Community type:			
Erosion:			
Disturbance:			
Topography:			
Average slope(s):	**%**	**%**	
Soil types:			
Aspect:			
Interspersion with or relationship to other community types:			
General vegetation composition:			

Square Plot 1

To determine relative abundance (dominance):					
Plant species	**%**	**Plant species**	**%**	**Plant species**	**%**
..					
..					
..					
..					
..					
..					
..					
..					

Table A–1. Overview of Plant Community Form (continued)

Square Plot 2

To determine relative abundance (dominance):					
Plant species	**%**	**Plant species**	**%**	**Plant species**	**%**
..					
..					
..					
..					
..					
..					
..					
..					
..					
..					

Square Plot 3

To determine relative abundance (dominance):					
Plant species	**%**	**Plant species**	**%**	**Plant species**	**%**
..					
..					
..					
..					
..					
..					
..					
..					
..					
..					

Trees and Shrubs

Tree species	**Number in 20-m × 50-m belt**
Shrub, sub-shrub, succulent species	**Number in 1-m × 50-m belt**

Table A–2. Transect Data Collection Form Using Point-intercept Method

Site #:		**Date:**	**Surveyors**	
Site location:				
Community:				
Notes:				
Transect orientation:				
Transect coordinates:	**Northing:**	**Easting:**	**Northing:**	**Easting:**

Cover/ Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Bare Ground																																																		
Rock																																																		
Litter																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		
..																																																		