

# BLM - SURPRISE FIELD OFFICE Nut Mountain Allotment #01010

## DOCUMENTATION FORM FOR DETERMINATIONS: ACHIEVEMENT OF RANGELAND HEALTH STANDARDS, CONTRIBUTING FACTORS AND APPROPRIATE ACTION PRIORITIES

THIS FORM DOCUMENTS, FOR THE INDICATED AREA: (1) DETERMINATIONS AND SUPPORTING RATIONALE REGARDING IF FUNDAMENTAL RANGELAND HEALTH CONDITIONS CITED IN 43 CFR 4180.1 EXIST IN THESE AREAS; (2) DETERMINATIONS, IN CASES WHERE ONE OR MORE CONDITIONS OF FUNDAMENTAL RANGELAND HEALTH DO NOT EXIST, REGARDING THE STANDARD(S) THAT IS (ARE) NOT ACHIEVED; (3) DETERMINATIONS, IN THOSE CASES WHERE ONE OR MORE STANDARDS ARE NOT ACHIEVED, REGARDING THE CONTRIBUTING FACTOR(S) THAT IS (ARE) PREVENTING STANDARD(S) ACHIEVEMENT OR IS (ARE) PREVENTING SIGNIFICANT PROGRESS TOWARDS ITS (THEIR) ACHIEVEMENT; AND, (4) THE INFORMATION THAT WAS EXAMINED THAT SUPPORT THESE DETERMINATIONS.

Indicate the date(s) or period the information review occurred: **June– July 2008; January-February of 2009**

### PART I - IDENTIFICATION OF RELEVANT AREA

- A. Indicate area where these determinations and rationale apply:
1.  **Site (Specific Geographic Area) within Management Unit (allotment or pasture):**  
 Allotment name/no.: \_\_\_\_\_  
 Place name: \_\_\_\_\_  
 Legal location (if needed to ID site): \_\_\_\_\_  
 Approximate size in acres: \_\_\_\_\_  
 (or linear length if lotic riparian)
  2.  **Management Unit (allotment or pasture - list name / no. / acres):**  
 Nut Mountain #01010 – 66,980 acres public; 4,255 acres private
  3.  **Landscape (identify by groups of management units, or by watershed if cross-cutting MU's and list):**  
 \_\_\_\_\_
  4.  **Other Stratification (identify - e.g., all riparian areas in XYZ Pasture):**  
 \_\_\_\_\_

### PART II - IDENTIFICATION OF INFORMATION REVIEWED

The following information was reviewed in **July of 2008 & January/February 2009** to determine standards attainment in compliance with 43 CFR 4180.2: **Actual use reports, utilization, and field data from 1979 to 2008.**

The following information (e.g. monitoring, literature, personal communication, etc.) was considered to determine standards attainment and, if applicable, contributing factor(s) to their non-achievement and failure to make significant progress towards their achievement.

**Field Data Indicators Observed at five evaluation sites on the Nut Mountain Allotment in June of 2008:**

Rangeland Health Attributes		Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight	Σ
Soils	Soils/Site Stability Indicators 1-9 & 11				3	47	50
Hydrologic	Hydrologic Function Indicators 1-5, 8-11 & 14			3	3	44	50
Biotic	Biotic Integrity Indicators 8-9 & 11-17			6	4	35	45

Discussion of Specific Indicators (as needed):

**Nut Mountain Allotment 2008 Evaluation Sites:**

<u>Pasture / Use Area Name</u>	<u>Site Number</u>	<u>Ecological Site Name</u>	<u>Percent of Allotment (by Soil Mapping Unit)</u>
Hanging Rock	NV 23 - 06	Loamy 8 - 10" P. Z.	15
Massacre Lakes	NV 23 - 06	Loamy 8 - 10" P. Z.	6.9
Mountain	NV 23 - 17	Claypan 14 - 16" P. Z.	12.6
Mountain	NV 23 - 94	Ashy Slope 12 - 14" P.Z.	6.9
Upper Field	NV 23 - 31	Claypan 10 - 14" P.Z.	4.8

**RHA #1 – Hanging Rock Use Area, SMU #1150, NV 23 - 06, Loamy 8 - 10" P. Z.**

The Hanging Rock Use Area is an unfenced area positioned in and generally including the lower 20% of the Mountain Pasture. Livestock use is scheduled separate from that of the Mountain Pasture. Livestock are approved for use in this field during the early spring (April to mid June) on an alternating year basis with the Calvary Seeding. Grazing use in this use area has occurred in five of the last eleven years. This use area was rested in 2006 and 2008, but received heavy use in 2007. Wild horses have not typically been documented in this use area, even though it is part of the Nut Mountain Herd Management Area (HMA).

Three moderate departures for "Plant Community Composition and Distribution Relative to Infiltration", "Functional/Structural Group", and "Annual Production" were observed in the Hanging Rock Use Area in a Loamy 8 - 10" P. Z. (Wyoming big sagebrush – Thurber's needlegrass) ecological site. The moderate departure ratings were based on the amount of Thurber's needlegrass present on this site; Thurber's needlegrass although present on site, should be the dominant perennial grass. Historic overgrazing has decreased the amount of Thurber's needlegrass.

**RHA #2 – Mountain Pasture, SMU #1185, NV 23 - 17, Claypan 14 - 16" P. Z.**

The Mountain Pasture is the high elevation summer use area for the allotment. This pasture is typically scheduled for livestock use during the summer months (mid June to mid August or mid August through mid October) in alternation with the Massacre Lakes and Upper Field Pastures each year. Heavy use was recorded in the Mountain Pasture in 2008. Prior year's utilization mapping has documented moderate use within this write-up area. Wild horses use this pasture during the summer months, moving off the pasture to other areas during the winter. Wild horses in this area have been gathered in 2000 and 2007. Over the past ten years documented wild horse numbers in this pasture have varied from a low of 32 head in 2008 to 181 head in 2007. The number reported for 2008 is from a census and distribution flight that was conducted in March 2008 following the 2007 gather. This flight documented the occurrence of 31 wild horses in this pasture.

Three moderate departures for "Plant Community Composition and Distribution Relative to Infiltration", "Functional/Structural Group", and "Annual Production" were observed in the Mountain Pasture on a Claypan 14 - 16" P. Z. (Low sagebrush – Idaho fescue/bluebunch wheatgrass) ecological site. The moderate departure ratings were based on the amount of Idaho fescue and Thurber's needlegrass present; Idaho fescue and Thurber's needlegrass should be the two dominant perennial grasses for this site.

**RHA #3 Massacre Lakes Pasture, SMU #1245, NV 23 – 06, Loamy 8 - 10" P.Z.**

No departures over slight - moderate.

**RHA #4 Mountain Pasture, SMU #1336, NV 23 – 94, Ashy Slope 12 – 14" P.Z.**

No departures over none - slight.

**RHA #5 Upper Field Pasture, SMU #1165, NV 23 - 31 Claypan 10 - 14" P.Z.**

The Upper Field pasture is used by livestock on an alternating basis either Mid June through Mid August or Mid August through Mid October each year. This pasture has received scheduled livestock use four out of the past eleven years. The pasture was used in 2008. Small numbers of wild horses use this pasture due to the lack of available water. Census/distribution monitoring following the 2008 gather documented the occurrence of less than ten wild horses.

Three moderate departures for "Plant Community Composition and Distribution Relative to Infiltration", "Functional/Structural Group", and "Annual Production" were observed in the Upper Field Pasture on a Claypan 10 - 14" P.Z. (Low sagebrush - bluebunch wheatgrass/Thurber's needlegrass) ecological site. The moderate departure ratings were based on the relative small amounts of bluebunch wheatgrass and Thurber's needlegrass found on site. Because bluebunch wheatgrass and Thurber's needlegrass lacking, annual production was estimated at 40 – 60% of normal. Historic management practices have decreased the amount of bluebunch wheatgrass and Thurber's needlegrass; however, based on observations in 2008, this site is in a slight upward trend.

**Discussion of Specific Indicators (as needed):**

Information relevant to **UPLAND SOILS, STANDARD 1:**

Susanville Resource Advisory Council Standards and Guidelines:

Upland soils exhibit infiltration and permeability rates that are appropriate to soil type, climate and landform, and exhibit functional biological, chemical, and physical characteristics.

**Meaning that:** Precipitation is able to enter the soil surface and move through the soil profile at a rate appropriate to soil type, climate, and landform; the soil is adequately protected against human caused wind or water erosion; and the soil fertility is maintained at, or improved to, the appropriate level.

Indicator(s) Observed      Information Reference (i.e. identify the information source used by type and date)

Comments / Remarks: **The following responses were based on the field data collected on the Nut Mountain Allotment in June of 2008, along with management records and observations on the allotment from 1997 to 2007. Soils and ecological site information were obtained from the 1999 Soil Survey of Washoe County, North Part.**

Criteria

1. IS ground cover (vegetation, litter, and other types of ground cover, such as rock fragments) sufficient to protect sites from accelerated erosion? **Yes, the attribute rating for Soil/Site Stability was stable and Hydrologic Function rated as functioning for all five evaluations sites. All the sites had adequate ground cover of shrubs, forbs and perennial grasses. In June 2008, ocular observations were made on several other sites throughout the allotment. These sites were representative of measured areas with respect to understory of perennial grasses sufficient to protect sites from accelerated erosion.**
2. IS evidence of wind and water erosion, such as rills and gullies, pedestalling, scour, or sheet erosion, and deposition of dunes either absent or, if present, does not exceed what is natural for the site? **The soils in the allotment have sufficient cover (rock and vegetative) to protect the soil from wind and water (raindrop and surface flow) impacts. Transect data and ocular observations during June of 2008 also verified the above ratings for the remainder of the allotment.**
3. IS vegetation vigorous and diverse in species composition and age class, and does it reflect the Potential Natural Community or Desired Plant Community for the site? **Yes, on most sites observed. The claypan soil (low sagebrush) was lacking the dominant perennial grasses such as bluebunch wheatgrass and Thurber's needlegrass. These sites have been heavily impacted by heavy grazing use, and now consist of bluegrasses (Poa's) and bottlebrush squirreltail with a diverse component of perennial forbs. Low sagebrush is the dominate shrub species. Overall, the vegetation in the allotment is vigorous, diverse and reflects the low end of DPC objectives from the allotment management plan.**

B. Information relevant to the **STREAM HEALTH, STANDARD 2:**

Susanville Resource Advisory Council Standards and Guidelines:

Stream channel form and function are characteristic for the soil type, climate, and landform.

**Meaning that:** Channel gradient, pool frequency, width to depth ratio, roughness, sinuosity, and sediment transport are able to function naturally and are characteristic of the soil type, climate, and landform.

Comments / Remarks:

**Hanging Rock Creek is the only perennial flowing creek on the Nut Mountain Allotment. This system consists of a short spring fed stream. The stream originates from a spring at an elevation of approximately 5,800 feet and flows for approximately 1.9 miles terminating at an approximate elevation of 5,580 feet. The stream flows through both public and private lands. Private land segments of the stream as well as some public land segments totaling approximately 1.1 miles (6,000 feet) are completely fenced and grazing use by both cattle and wild horses is limited or restricted. In August 2008, this stream was visited to evaluate conditions. Riparian Functioning Condition was assessed, water temperature data was collected, and physical observations were made. Based on the land status and geography, the stream was divided into three reaches for assessment purposes. Private land segments of the stream reaches comprising approximately 6,300 feet 62% of the overall length of perennial flow were not assessed; however public land stream segments contained within fenced private pastures were evaluated, PFC assessments were completed, stream water temperature was recorded, and observations were recorded. In**

addition, past data from water resource inventories and past assessments and inventories were reviewed.

The Upper reach begins just below the spring source and flows for approximately 650 feet before entering a fenced private land parcel. The stream flows through this private pasture for approximately 300 feet before emerging back on public lands. From this point the stream flows for approximately 650 feet before again entering a fenced private field. The Upper reach has herbaceous and woody riparian vegetation which is being heavily grazed by livestock and wild horses. Aspen occur in pockets within this reach and suckers and young trees are not being recruited due to the heavy use. The stream channel is narrow and downcut up to approximately 4 feet in some places. Water temperature at the top of the reach (spring source) was measured at 61° F on 20 August and at the bottom at 62° F on 19 August.

A Lotic Functional Assessment was completed for this reach. This assessment resulted in a rating of functioning at risk with a downward trend. Of the seventeen factors considered in this rating, seven were rated positive, seven negative; one factor was rated not apparent, and two were not applicable.

The Middle reach is entirely included within a fenced private field and consists of approximately 600 feet of public land stream length situated at the bottom of an approximately 3,800 foot stream segment. This area is not grazed by livestock and the permittee actively works to keep grazing use out of this reach. However, limited wild horse use and unplanned livestock use does take place. This reach terminates at the mouth of Hanging Rock Canyon where a drift fence splits the private lands. Vegetation along this reach is characterized by a narrow riparian zone dominated by herbaceous and woody vegetation. Aspen, choke cherry, *Ribes* sp., and rose are scattered throughout this reach. Pioneering aquatic vegetation is present within the channel and along streambanks. In many instances, due to past downcutting, sagebrush and other upland plant species extend to the water's edge; however this occurrence is frequently associated with the exposed banks where the stream is actively widening the floodplain. This reach of the stream is negatively affected by frequent scouring by seasonal runoff originating from side drainages and the narrowness of the valley bottom. Exposed banks with coarse rocky debris and sand/silt deposits are common in the pools. A small population of brook trout and speckled dace persists throughout this reach but are isolated to scattered pools during base flow conditions in the summer. Water temperature was measured within the approximately 600 foot public segment and recorded at 57° F on 19 August.

A Lotic Functional Assessment was completed for this reach. This assessment resulted in a rating of properly functioning. Of the seventeen factors considered in this rating, fifteen were rated positively and two were not applicable.

The Lower reach is likewise included entirely within a fenced private field and consists of two separate segments totaling approximately 2,000 feet of perennial flow divided by two segments of stream flow occurring on private lands. Like the middle reach, the permittee actively works to prevent unplanned livestock use in this pasture, and wild horse use is limited. However, upland areas within this pasture have been plowed and seeded to increase productivity and the permittee periodically allows livestock into this field for limited periods of time. Vegetation along this reach is dominated by herbaceous wetland plants. The stream channel is confined in the upper public segment and unconfined in the lower public and private segments. The permittee periodically diverts the water in this reach onto the uplands to irrigate the seeding. Stream bottom substrates in this reach are dominated by smaller diameter rock and sand/silt deposits. There is abundant evidence of frequent high flows outside the channel and floodplains are well established or developing.

Only the upper public land segment was rated in 2008 for functionality; however observations confirmed that the lower public segment was in a similar condition. The lotic functional assessment for this reach resulted in a rating of properly functioning. Thirteen of the seventeen indicators were rated positively, two rated not applicable and two not apparent.

Criteria

1. ARE gravel bars and other coarse textured stream deposits successfully colonized and stabilized with woody riparian species? **No. Gravel bars were not noted in the reaches assessed. About 34% of public reaches are receiving negative impacts from heavy livestock utilization. Fenced private lands (see explanation in riparian section below) have abundant aspen and other woody specie components. Unfenced public lands have little or no woody species above browsing height. The result is mature aspen and other woody species with little to no regeneration as result of browsing pressure.**
2. IS streambank vegetation vigorous and diverse, mostly perennial, and holding/protecting banks during high streamflow events? **No. The Upper reach has little vegetation along the streambanks. The Middle and Lower reaches have perennial, vigorous, diverse vegetation composition and capable of protecting streambanks.**
3. DOES the stream water surface have a high degree of shading, resulting in cooler water in summer and reduced icing in winter? **Yes. During the August 2008 field visit, stream temperature was measured at three points on public land along Hanging Rock Creek. Temperatures ranged from 61° F in the upper most reach to 57° F in the middle reach (see riparian section below) where brook trout were found. The total length of the stream between the upper most and lowest temperature reading was about 0.95 miles.**
4. ARE portions of the primary floodplain frequently flooded (inundated every 1 to 5 years)? **Yes. The public lands portions of Hanging Rock (particularly the lower reaches) system show signs of frequent flooding as evidenced by trapped litter along the banks and in riparian vegetation.**

C. Information relevant to the [WATER QUALITY, STANDARD 3:](#)  
[Susanville Resource Advisory Council Standards and Guidelines:](#)

Water will have characteristics suitable for existing or potential beneficial uses. Surface and groundwater complies with objectives of the Clean Water Act and other applicable water quality requirements, including meeting the California and Nevada State standards, excepting approved variances.

Comments / Remarks: **Surface and groundwater are associated with ephemeral drainages, seeps, pit reservoirs and wells. Surface water and groundwater within the allotment have not been listed for exceeding State water quality standards. All springs/seeps, pit reservoirs and groundwater are currently meeting the needs of beneficial uses for watering livestock, wild horses and wildlife. The only perennial creek (Hanging Rock Creek) is under a combination of private and public ownership. A water quality station is located at the spring source at the head of Hanging Rock Creek and the following pertains to the water quality station at this spring source.**

Indications

1. ARE the chemical constituents, water temperature, nutrient loads, fecal coliform, turbidity, suspended sediment, and dissolved oxygen levels within the applicable requirements? **Yes, water quality samples taken from the spring at Hanging Rock Creek in 2002 and 2003 indicate State Numeric and Narrative Standards, Beneficial Use needs and BLM Standards are being met.**
2. ARE the standards for riparian, wetlands, and water bodies achieved? **Yes, at the spring source and on the private portions of Hanging Rock Creek. Approximately 1/3 of the public land portion is not achieving standards.**
3. DO aquatic organisms and plants (e.g., macroinvertebrates, fish, algae, and plants) indicate support for beneficial uses? **Yes, the needs of beneficial uses (aquatic organisms and plants) are currently being met at this spring site.**

ARE there acceptable results from implementation and effectiveness monitoring or changes in management to address deficiencies identified by such monitoring? **Yes, baseline monitoring has been established for water quality and management has not significantly changed in the allotment for the past 10 years.**

D. Information relevant to the [RIPARIAN AND WETLAND SITES, STANDARD 4](#)  
[Susanville Resource Advisory Council Standards and Guidelines:](#)

Riparian and Wetland areas are in properly functioning condition and are meeting regional and local management objectives.

**Meaning that:** The riparian and wetland vegetation is controlling erosion, stabilizing stream banks, shading water areas to reduce water temperature, filtering sediment, aiding in floodplain development, dissipating energy, delaying floodwater and increasing recharge of ground water that is characteristic for these sites. Vegetation surrounding seeps and springs is controlling erosion and reflects the potential natural vegetation for the site.

Comments / Remarks: **Answers to the following were based on the field data collected on the Nut Mountain Allotment from 1985 to 2008, along with management records and observations on the Nut Mountain Allotment.**

**A portion of an intermittent stream in Evans Camp drainage is located within an archeological enclosure in the northern part of the Nut Mountain allotment. The enclosure is closed to livestock grazing; therefore the stream was not assessed for this determination.**

**Public land riparian areas in the allotment consist of Rock Spring, Miller and Lux, and Trough Springs.**

**These sites all have ponds associated with them to provide water for livestock and wild horses. The ponds are livestock developments and therefore exempted from the standards for riparian and wetlands. In 1993, the spring at Miller and Lux was rated as functional at risk (FAR) and the riparian system below Rock Spring was rated as non-functional. There are no previous RFA's for Trough Spring. In 2008 these sites were visited again. The riparian habitats associated with these sites were rated based on the 2008 site visit, aerial photos from 2001, NAIP 2005 digital aerial photos, water source inventory (WSI) data from 1985, 1993 RFA's, and 2006 NCA spring inventory data for Trough Spring.**

**The Miller and Lux Spring (WSI #320) is located at NE ¼ Sec 9 T42N R22E. Miller and Lux consists of approximately ¼ acre of riparian habitat above the development and approximately 1,000 feet of riparian habitat below the development (July 2001 aerial photo). The original 1985 WSI noted only wildlife and cattle use. The original 1993 RFA rated Miller and Lux Spring as FAR with a downward trend. In 2008 it was noted that this site was receiving trampling impacts from wild horses and cattle. The riparian habitat above Miller and Lux Spring was visited in 2008 and rated as non-functional based on the lack of vegetation necessary for the riparian to properly function. Nine of the lentic indicators were rated positive, 8 were negative, and 3 were not applicable.**

**Rock Spring (WSI # 673) is located at SW ¼ NW ¼ Sec 34 T43N R22E. Rock Spring consists of approximately 600 feet of riparian habitat below the pond (July 2001 aerial photo). The spring source is part of the Rock Spring development and was not rated in 2009. The original 1985 WSI noted wildlife and cattle use and that the area was "degraded". In 2008 it was noted that this site was receiving trampling impacts from wild horses and cattle. The original 1993 RFA rated Rock Spring as non-functional with all but one indicator rated as "no" or "n/a". The indicator "Point bars revegetating" was rated as "yes" in 1993. In 2009 the 600 feet below Rock Spring was rated as functional at risk (FAR) with an upward trend. Eleven of the lotic indicators were rated positively, 2 not apparent, 2 were negative and 2 were not applicable.**

**Trough Spring (WSI #985) is located at SW ¼ Sec 9 T42N R22E. Trough Spring consists of approximately 3,600 square feet of riparian habitat above the pond. Additional riparian vegetation exists downstream of the pond on the Massacre Mountain Allotment. The original WSI noted wildlife, cattle, and wild horse use. In 2008 wild horse and cattle impacts were noted. Trough Spring was rated as non-functional in 2009 based on lack of vegetation necessary for the riparian system to properly function. Eleven of the 20 lentic indicators were rated positive, 7 were negative, and 2 were not applicable.**

**Two other un-named seep/springs show up in the WSI database (WSI ID #'s 988 and 368); however, information from the original WSIs and 2001 aerial photos indicate that these do not meet the riparian area classification. Therefore, these sites were not visited in 2008 and were not considered in this determination.**

#### Criteria

1. IS riparian vegetation sufficiently vigorous, mostly perennial, and sufficiently diverse in species composition, age class and life form to stabilize stream banks and shorelines?

**No. The Upper reach of Hanging Rock is currently receiving negative impacts from cattle and wild horses. Unfenced public portions have little vegetative cover, whereas by comparison the adjacent fenced private and public land has abundant grass, instream aquatic vegetation, and woody plants adjacent to the water. Unfenced public portions also have large percentages of bare ground or very short herbaceous vegetation and sheared stream banks that would not withstand high stream flow events. Impacts along the unfenced public portions of Hanging Rock have been occurring for years, as evidenced by the low density and few age classes of woody vegetation when compared to fenced private and public lands along Hanging Rock.**

The remaining publically owned reaches of Hanging Rock Creek are fenced within private lands. Although in some areas, rock is important in stream channel hydrology; these reaches have vigorous and diverse vegetation to sufficiently stabilize streambanks.

Miller and Lux, and Trough Spring are currently being negatively impacted from cattle and wild horses grazing and show no apparent improvement in condition since inventories in the 1980's. Rock Spring has fewer grazing impacts and the riparian area has a diverse composition of vegetative species, and has an upward trend.

2. IS riparian vegetation and large woody debris well anchored and capable of withstanding high streamflow events?

**Yes.** Within the fenced Middle Reach of Hanging Rock Creek, woody vegetation such as willows, aspen, roses, chokecherry, and *Ribes* sp. are abundant, vigorous and well anchored. Farther downstream at the lower end of the middle reach, in-stream rock also plays an important role in protecting streambanks, as well as anchored woody vegetation. Within the middle and lower reaches of Hanging Rock Creek, the riparian zone is generally wider with more vegetation and debris anchoring the banks. In the upper reach, there are few areas of woody vegetation; the woody vegetation that is present has been heavily browsed. In the lower reach in the flats, grasses and grass like plants were found to be vigorous and dense with banks capable of withstanding high water flows.

The potential for woody species at Miller and Lux, and Trough Spring has not been determined. No woody species were noted below Rock Spring; however woody species were observed at the spring source.

IS accelerated erosion (as a result of human related activities) evident?

**Yes.** The Upper reach of Hanging Rock Creek exhibits accelerated erosion from streambank hoof shearing by grazing animals. Riparian herbaceous vegetation near Miller and Lux and Trough Springs show signs of heavy utilization by both cattle and wild horses. Accelerated erosion (soil covered vegetation and/or exposed rock) is evident at both springs.

4. ARE age class and structure of woody riparian and wetland vegetation appropriate for the site?

**No,** in the Upper reach of Hanging Rock Creek; however the vegetation is appropriate for the site in the Middle and Lower reaches of the creek. In the Upper reach of Hanging Rock, only a few younger woody plants were present. Roses were noted to be heavily browsed and only a few young aspen were found which had also been heavily browsed. Riparian grasses and forbs had heavy utilization with areas of bare ground in the plant interspaces.

The Middle and Lower reaches of Hanging Rock Creek have abundant, diverse woody and herbaceous vegetation, and large woody debris that has created several pools. Several age classes of aspen, willows, rose, and other species of woody shrubs were evident along the Middle reach. Dense mats of herbaceous species including Nebraska sedge were found in the Middle and Lower reach.

Age class diversity and plant diversity was rated poor for Miller and Lux and Trough Springs; and adequate for Rock Spring. Plant diversity was low at Rock Spring.

E. Information relevant to the BIODIVERSITY STANDARD 5:  
Susanville Resource Advisory Council Standards and Guidelines:  
Viable, healthy, productive, and diverse populations of native and desired plant and animal species, including special status species, are maintained.

**Meaning that:** Native and other desirable plant and animal populations are diverse, vigorous, able to reproduce, and support nutrient cycles and energy flows.

Comments / Remarks: **Answers to the following were based on the field data collected on the Nut Mountain Allotment in 2008, along with management records and observations dating back to 1979.**

Indicator(s) Observed

Information Reference (i.e. identify the information source used by type and date)

- ☑ plant vigor (production, mortality, decadence) - Observed during the 2008 RHA, bitterbrush transects from 1979 to 2008, RFA 2008.
- ☑ diversity of age classes - Observed during the 2008 RHA, bitterbrush transects from 1979 to 2008, RFA 2008.
- ☑ recruitment - Observed during the 2008 RHA, bitterbrush transects from 1979 to 2008, RFA 2008.
- ☑ community structure (layers) - Observed during the 2008 RHA, bitterbrush transects from 1979 to 2008, RFA 2008.
- ☑ community diversity - Observed during the 2008 RHA bitterbrush transects from 1979 to 2008, RFA 2008.
- ☑ exotic plants (or invaders) - Observed during the 2008 RHA.
- ☑ wildlife life forms present (obligate) - NDOW, GBBO and BLM surveys and species observed during the 2008 RHA.
- ☑ special status species: - NDOW and BLM lek, brood rearing and harvest data from the mid 1950's to present and accessed via GIS and other databases; NDOW's 2003 and 2007 Upland and Migratory Bird, Rabbit and Furbearing Mammal status book. Harvest, brood rearing and lek survey data for sage-grouse.

Species observed or sign found include: pronghorn adults and kids, sage-grouse, various unidentified songbirds, black-tailed jackrabbit, ground squirrel, active ant hills, lizards, active rodent burrows, coyote, raven, and northern harrier. The 2006 Larrucea survey detected two active pygmy rabbit burrows in the allotment, one located within the 1,480 acre cultural resource protection enclosure and the second located in the Mountain Pasture. Although some saltgrass was found in the allotment, the habitat is not suitable for Carson wandering skipper due to the lack of nectar sources. One active sage-grouse lek exists in the allotment and both golden eagles and prairie falcons are also known to nest within the allotment. Data from the Nevada Department of Wildlife (NDOW) indicates that about 9,000 acres of public land in the allotment are occupied by bighorn sheep. Pronghorn antelope can be found throughout the allotment yearlong and are known to kid in the higher elevations of the allotment (office and NDOW data). Mule deer use occurs during the summer at the higher elevations of the allotment.

#### Criteria

1. DO wildlife habitats include seral stages, vegetation structure, and patch size to promote diverse and viable *wildlife populations*?

**Yes.** Upland areas are providing the necessary resources for wildlife, such as hiding or nesting cover; however, important riparian habitat (also hiding and nesting cover) is degraded.

Bitterbrush is an extremely important browse species for deer and to a lesser degree pronghorn antelope. Bitterbrush also provides food and cover for a variety of rodents such as chipmunks and birds. Wild horses generally do not use bitterbrush. Information on bitterbrush leader use, form class (an indicator of trend), and age class has been periodically collected at four sites in the allotment from 1979 through the present. All sites are located in the Mountain Pasture which is grazed in alternate years from 15 June to 15 August or from 16 August to 15 October. The average percent of severely hedged plants (form class) ranged from 4.9 % to 14.1 % per transect over the above time period. The average of plants with little to no hedging was 36.4% to 55.1% for the same time period. Tabular data indicates that over the years, and for all transects, fewer plants fell into the severely hedged (form class 3) category. Bitterbrush use was heavier in the late 1970's and early to mid 1980's (as high as 30% per transect) but has decreased substantially since then to as low as 0% in recent years. Two transects averaged heavier use in the fall than the spring; however, the other two transects averaged heavier use in the spring than in the fall (about a 2% difference). The site with the heaviest use recorded is also the farthest from water. Mature plants averaged between 86% and 93% for all four transect lengths with seedlings averaging between 0.47% and 1.41%. One of the four transects had never had seedlings recorded on it until 2008 and the other three have not had seedlings recorded on them since 1987.

In 2008, line intercept data showed canopy cover of various sagebrush species at each assessment site ranged from 19.3% to 31.7% and forb counts from 3.7% to 13%. Sagebrush obligate species known to use the allotment include sage-grouse and pygmy rabbit. Forbs are important protein sources for many wildlife species including big game, many birds, and small mammals and are important nectar sources for insects. Site 1 had 19.7% Wyoming big sagebrush and 10.3% forbs, site 2 had 31.7% low sagebrush and 9.3% forbs, site 3 had 19.3% Wyoming big sagebrush and 13% forbs, site 4 had 38% Mountain big sagebrush and 5.3 % forbs, and site 5 had 25.3% low sagebrush and 3.7% forbs. These cover values indicate sagebrush species and forbs are intact and appropriate for their respective ecological site.

Functional structural groups were rated as moderate departures at sites 1, 2 and 5; and none to slight departure at sites 3 and 4. The deficiency of deep rooted perennial grasses was the reason for these departures. Based on utilization data, the cause is considered to be from past grazing activities, not current management; except as noted for RHA site 2 where current livestock management is contributing to non-attainment of the standard.

RHA site 1 (about four miles from the inactive Nut Mountain lek) did not have adequate cover (grasses) for nesting sage-grouse, or therefore for rodents or smaller ground nesting birds. The Nut Mountain lek was last thought to be active in the 1960's or 1970's. Within the big sagebrush inclusions at site 2, hiding and nesting cover was low for sage-grouse (should have more grasses) although both pronghorn and some older sage-grouse sign were found. The majority of site 2 is a low sagebrush site with normally lower amounts of cover. Site 3 was noted to have a wide variety of grasses and forbs with coyote, rabbit, and rodent sign found and northern harrier and ravens observed during the assessment. Site 4 also had a wide variety of grasses and forbs with signs of recent rodent use. Areas to the south and west of site 4 were also noted to have abundant forbs suitable to sage-grouse, pronghorn and deer (many arrow leaf balsamroot). Bitterbrush in good form class condition was also found in this area which is occupied by bighorn sheep. Several pronghorn with kids were seen in the vicinity of site 4 in early June of 2008. An active sage-grouse lek occurs within 2 miles of site 5.

Patch sizes are normal for the landscape except within the 1982 Calvary Camp seeding, a patchwork of 4,695 acres of spray and seeding to crested wheatgrass. Current recommendations for sage-steppe habitats are patches of sagebrush greater than 320 acres (Partners in Flight, *Birds in a Sagebrush Sea*). In June 2000, two transects were conducted in the Calvary camp seeding. Big sagebrush (23.5 to 10.8 %) and green rabbit brush (1.8% at both sites) were the only shrub species detected. The main grass species was crested wheatgrass, however some squirreltail (*Elymus elymoides*), needlegrass (*Achnatherum* sp.), bluegrass (*Poa* sp.) and Indian ricegrass (*Achnatherum hymenoides*) were found (grasses were not tallied). Eight forb species including those preferred by sage-grouse were identified between both transects. Other unidentified forb species recorded varied from rare to abundant.

2. ARE a variety of age classes present for most species?

**Yes, for uplands and no for riparian areas.** Reproductive capability of upland plants was considered normal at all sites, therefore, age structure of these plants would be considered sufficient. Bitterbrush transect data indicate the number of seedlings has dropped over the years; however, two transects have either never detected seedlings or had few on them since the first study was conducted. Riparian plant communities have low age class diversity except for the fenced areas of Hanging Rock Creek, previously noted.

3. IS vigor adequate to maintain desirable levels of plant and animal species to ensure reproduction and recruitment of plants and animals when favorable events occur? **Yes, for most sites.** Vigor was adequate in the uplands. All site assessments rated reproductive capability of plants as a "none to slight" departure from normal. Vigor was also adequate in the fenced riparian areas of Hanging Rock and at Rock Spring. At Miller and Lux and Trough springs, vigor was not adequate and no apparent improvement of riparian vegetation or riparian area size when comparing 1980's photos to 2008 observations.

4. DOES the distribution of plant species and their habitats allow for reproduction and recovery from localized catastrophic events? **Yes, there have been no large scale disturbances either natural or manmade within the allotment that would not allow for reproduction, and recovery native plant species or their habitat.** The only manmade vegetation disturbance within the allotment is the 4,700 acre Calvary Camp seeding (established in the 1980's) which has had a considerably increase in Wyoming sagebrush, and native forbs since the treatment was implemented, indicating plant species would recover from future catastrophic events.

5. ARE natural disturbances, such as fire, evident, but not catastrophic?

**Yes, there have not been any catastrophic fires.** According to the field office wildfire database, since 1990, only four fires have burned within the allotment, totaling just over 25 acres.

6. ARE non-native plant and animal species present at acceptable levels? **Yes.** Cheatgrass and Japanese brome were noted in small amounts at three RHA sites and chukar were only found at one site. Invasive plants were rated as "none to slight" at two RHA sites and "slight to moderate" at one RHA site.

7. ARE habitat areas sufficient to support diverse, viable, and desired populations, AND are they adequately connected with other similar habitat areas?

**Currently, upland areas are providing adequate cover and forage for most species that use the allotment.**

However, several upland areas have a lack of forage and hiding cover due to the lack of important grass species. Riparian areas are continuing to receive negative impacts from wild horses and cattle grazing (based on season of use, utilization maps, and observations). The upper reach of Hanging Rock Creek lacked large woody species such as aspen, willow, roses, and *Ribes* sp. and herbaceous cover on riparian areas. Other springs in the Mountain pasture currently are not providing diverse habitats for wildlife and show little to no signs of improving.

The allotment is used by mule deer and pronghorn and as “migration corridors” to and from the Sheldon National Wildlife Refuge for these game species. Pronghorn are known to use higher elevations of the allotment as kidding grounds. Bighorn sheep (state listed) are known to use the area south and east of Nut Mountain proper. Several active and inactive burrow sites for pygmy rabbit (sagebrush obligate) have been found on the allotment. Golden eagles (BLM sensitive) forage over the entire allotment and limited surveys show three nesting areas or territories in the allotment; however, only one nest is known to be active. Twelve bird species were recorded by the Great Basin Bird Observatory (GBBO) surveys in 1999 just outside (0.2 miles) the allotment. Species include various sagebrush obligate bird species (sage thrasher and Brewer’s sparrow). Coyote, black-tailed jack rabbit, and rodent sign were found during the 2008 RHA, while ant hills, lizards, and ground squirrels were seen during assessments along with ravens and chukar which were not on the GBBO list.

Sage-grouse (sagebrush obligate) are found throughout the allotment with at least two strutting areas or “leks” known within BLM lands in the allotment; one active and the second inactive since the 1960’s or 1970’s. High and low population trends are similar annually to the adjacent Sheldon National Wildlife Refuge (NWR). Consistent counts of bird attendance at leks have only occurred since 2002 on the Surprise Field Office and since about 1990 for the Sheldon National Wildlife Refuge. Survey numbers show that sage-grouse populations peaked between 2004-2007 for both the Surprise Field Office and the Sheldon NWR. Some of these increases for the Surprise Field Office were due in part to more recent survey intensity as well as to the discovery of new leks. In 2008, lek count numbers declined considerably on both the Surprise Field Office and the Sheldon NWR.

Harvest data for the allotment indicates fall use (September) by sage-grouse and brood rearing data indicates summer use (June through August) by sage-grouse in the allotment. Data indicates that population numbers within the allotment are currently steady; although statewide they have trended lower since the early 1960’s (based on harvest data from NDOW). At least one lek, the Nut Mountain, located in the Mountain Pasture about 1 mile south of RHA site #4 appears to be inactive. This lek is known from 1974, but apparently no bird numbers were recorded. The lek has been visited several times since 2002 but only 1 bird was recorded each year. Indications are that the Massacre Bench East lek found in 2004 has a steady upward trend of birds. This lek is located approximately 2 mile southeast of RHA site #5.

Brook trout were found in the middle and lower reaches of Hanging Rock Creek. Reportedly, trout have been identified in Hanging Rock since at least the early 1990’s. Prior to fencing off of private lands in Hanging Rock, the lower reach of Hanging Rock Creek was a favorite fishing spot for some local fishermen.

Although some saltgrass was found in the allotment, the habitat is not suitable for Carson wandering skipper due to the lack of nectar sources. In 1980, a separate survey was conducted in the general area to look for a known nectar source (salt heliotrope). That survey did not find the nectar source in the Nut Mountain Allotment but found several hundred acres of salt heliotrope outside the allotment. No Carson wandering skippers were found during that survey; however other species of skippers were observed.

8. IS adequate organic matter (litter and standing dead plant material) present for site protection and decomposition to replenish soil nutrients and maintain soil health?  
Litter amount was rated none to slight departure at all evaluations sites. Adequate litter was present to protect the sites from erosion as well as maintaining soil health.

### **PART III - SUMMARY OF STANDARDS ACHIEVEMENT DETERMINATION AND RATIONALE**

#### **A. DETERMINATION ON STANDARDS ACHIEVEMENT**

As of the date of the completion of this form, an examination of the information listed in Part II and recent field visits, if applicable, indicate the following with regard to standards achievement for the area identified in Part I:

<u>Standard</u>	<u>Determination on Standard Achievement</u> (check appropriate box for each standard)
<b>Upland Soils</b>	<input checked="" type="checkbox"/> Met / <input type="checkbox"/> Not met but progressing towards / <input type="checkbox"/> Not met and not progressing towards / <input type="checkbox"/> N/A
<b>Stream Health</b>	<input type="checkbox"/> Met / <input type="checkbox"/> Not met but progressing towards / <input checked="" type="checkbox"/> Not met and not progressing towards / <input type="checkbox"/> N/A
<b>Water Quality</b>	<input checked="" type="checkbox"/> Met / <input type="checkbox"/> Not met but progressing towards / <input type="checkbox"/> Not met and not progressing towards / <input type="checkbox"/> N/A
<b>Riparian/Wetland</b>	<input type="checkbox"/> Met / <input type="checkbox"/> Not met but progressing towards / <input checked="" type="checkbox"/> Not met and not progressing towards / <input type="checkbox"/> N/A
<b>Biodiversity</b>	<input type="checkbox"/> Met / <input type="checkbox"/> Not met but progressing towards / <input checked="" type="checkbox"/> Not met and not progressing towards / <input type="checkbox"/> N/A

**B. RATIONALE SUPPORTING STANDARDS ACHIEVEMENT DETERMINATION**

The Standard for Upland Soils is currently being met for the Nut Mountain Allotment #01010. The standard achievement determination was based on information/data from the 1999 Washoe County Soil Surveys - North Part, Nut Mountain Upland Health Assessments, Line Point Intercept data, actual use data, composite utilization mapping and photos taken during the assessment process, along with management records, monitoring data and observations on the allotment since 1988. Data from the five Upland Health Assessments rated Soil/Site Stability as stable and Hydrologic Function as functioning for all sites evaluated. Ocular observations made during the upland health assessments in the Nut Mountain Allotment verified the above determination that the allotment has an abundance of total cover to protect the soil from wind and water (raindrop and surface flow) impacts and the Soil Stability ratings are well within the range of variability for the reference sites.

Line Point Intercept data on five of the evaluation sites:

Site Average for the Loamy 8 – 10” ecological site (2 sites).  
39% Canopy Cover, 30% Bare Ground and 31% Litter Cover

Site Average for the Claypan 10 – 14” and Caypan 14 – 16” ecological sites.  
55% Canopy Cover, 11% Bare Ground and 26% Litter Cover

Site Average for the Ashy Slope 12 - 14” ecological site.  
68% Canopy Cover, 13% Bare Ground and 51% Litter Cover

The Standard for Stream Health: the Standard for stream health is met in the two lower reaches and not met in the upper reach of Hanging Rock Creek. Vegetation in the upper reach is receiving negative grazing impacts. Streambanks are either deeply incised or shallow with little or no vegetation and sediments are not being trapped by vegetation. The functioning lower reaches have diverse vegetation that is shading the stream, protecting streambanks from high flows and creating undercuts that further shade the stream and provide hiding cover for fish.

The Standard for Water Quality: One water quality station for the allotment is located at the spring source at the head of Hanging Rock Creek. Baseline water quality was established in 2002 and 2003 and is currently meeting the State Numeric and Narrative Standards, Beneficial Use needs and BLM Standards. Neither surface water nor groundwater within the allotment has been listed for exceeding State water quality standards.

**Spring Source at Hanging Rock Creek 2002-2003**  
Estimated discharge: 0.05 cfs  
Temperature (C°): 12.03 °C average  
DO (mg/l): 7.19 mg/L average  
Phosphate (mg/L): 0.26 average  
pH: 7.9 average  
Fecal coliform: 0

**Nevada standard for Class A**  
Must not exceed 20 °C  
Must not be less than 6.0 mg/L  
Must not exceed 0.30 mg/L in streams  
Range between 6.5 to 8.5  
The fecal coliform concentration, based on a minimum of five samples during any 30-day period, must not exceed a geometric mean of 200 colonies/100mL nor may more than 10 percent of total samples during any 30-day period exceed 400 colonies/100mL

The Standard for Riparian Wetland Areas: **The Standard for Riparian Wetland Areas is not met. Rock Spring was functioning at risk with an upward trend. The middle and lower reaches of Hanging Rock Creek are**

properly functioning. The upper reach of Hanging Rock Creek is functional at risk with a downward trend. Miller and Lux Spring and Trough Spring were non-functional. Riparian areas which were not enclosed by fences within the allotment are showing negative impacts from cattle and wild horse grazing due to heavy use and adjacent water developments

**The Standard for Biodiversity:** The Standard for Biodiversity is not met. Riparian areas outside of exclosures observed in 2008 are being negatively impacted by current livestock and/or wild horses. These sites have not improved since the 1980's and are not providing important food, cover, or nesting substrates for wildlife. Riparian areas make up less than 1% of the allotment but are extremely important for providing diverse wildlife habitat in desert environments. Perennial water at Miller and Lux, Rock Spring, and Trough Spring occur within about 1.25 miles of each other and about 3.5 miles from upper Hanging Rock, all in the Mountain Pasture. These riparian areas are important in terms of providing season-long water and wildlife habitat since stock reservoirs in the general area are not considered reliable.

Upland areas of the allotment generally have good cover and diversity of shrubs and forbs but some sites are lacking native bunchgrasses. This condition is a result of historic grazing not current grazing practices. This conclusion is based on data collected from bitterbrush and upland utilization monitoring and documented actual use records in the Hanging Rock Use area, Upper Field and Mountain Pasture.

**PART IV - FOR THOSE STANDARDS NOT ACHIEVED, SUMMARY OF CONTRIBUTING FACTOR(S) DETERMINATION AND SUPPORTING RATIONALE**

A. DETERMINATION OF CONTRIBUTING FACTORS

As of the date of the completion of this form, an examination of the information listed in Part II and recent field visits, if applicable, indicate that the following are contributing factors for failing to achieve the standards as indicated in Part III for the area identified in Part I:

Non-achieved Standard (s) (from Part III):

<u>FLPMA Principal or Major Uses</u>	<u>Information Reference (what data was reviewed - type and information date)</u>	
<input checked="" type="checkbox"/> Domestic Livestock Grazing	<input checked="" type="checkbox"/> actual grazing use	<u>1997 to present</u>
	<input type="checkbox"/> grazing "licenses"	_____
	<input checked="" type="checkbox"/> utilization records	_____
	<input checked="" type="checkbox"/> field notes / photographs	_____
	<input checked="" type="checkbox"/> other	<u>Riparian Functional Assessment Data</u>
<input type="checkbox"/> Fish and Wildlife Development and Utilization	<input type="checkbox"/> utilization	_____
<input type="checkbox"/> Mineral Exploration and Development	<input type="checkbox"/> road building	_____
<input type="checkbox"/> Rights-of-way	<input type="checkbox"/> _____	_____
<input type="checkbox"/> Outdoor Recreation	<input type="checkbox"/> road building	_____
<input type="checkbox"/> Timber Production	<input type="checkbox"/> _____	_____

Other Events or Circumstances Considered Information Reference (what data was reviewed - type and information date)

<input checked="" type="checkbox"/> Wild horse and Burro use	<input checked="" type="checkbox"/> census / distribution data	_____
	<input type="checkbox"/> other	_____
<input type="checkbox"/> exotic plant presence		_____
<input type="checkbox"/> insect impacts		_____
<input type="checkbox"/> abnormal fire frequency or lack of fire		_____
<input type="checkbox"/> abnormal climatic events		_____
<input type="checkbox"/> other		_____

**CONTRIBUTING FACTOR(S) (LIST):**

B. RATIONALE FOR CONTRIBUTING FACTOR DETERMINATION

Utilization records support the conclusion that livestock and wild horse use is contributing to the non-attainment of the standards.

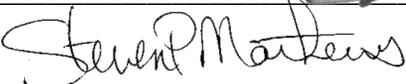
**PART V - BLM STAFF WHO REVIEWED THE INFORMATION AND RECOMMENDED PRIORITY FOR DEVELOPMENT AND IMPLEMENTATION OF APPROPRIATE ACTION TO MAKE SIGNIFICANT PROGRESS TOWARDS ACHIEVING THE STANDARD(S)**

The following staff have participating in examining the information listed in Part II and in making the standard(s) achievement and contributing factor determination(s).

**Elias Flores, Wildlife Biologist**  
**Steve Mathews, Rangeland Management Specialist**  
**Steve Surian, Sup. Natural Resource Specialist/Wild Horse Specialist**

**SIGNATURES:**

**TITLES:**

  
\_\_\_\_\_  
  
\_\_\_\_\_  
  
\_\_\_\_\_

Wildlife Biologist

Rangeland Management Specialist

Sup. Natural Resource Specialist/Wild Horse Specialist

In the cases where the standards are not achieved and after considering all relevant information, we recommend that the priority for developing and implementing appropriate action to achieve standards in the area identified in Part I be (check one):

high  medium  low .

We base our recommendation on the following ratings of the following factors:

Biological / Physical

Severity of resource impacts resulting from non-achievement of the standard -  high  medium  low

Size of affected area -

Ability to arrest further degradation -  easily done  unknown  difficult

Other:

Administrative

Proportion of federal land in the allotment -  high  medium  low

Pending administrative actions (permit lease renewal / transfer, etc.) -  pending  not pending until FY \_\_\_\_\_

Other

Social

Anticipated cooperation of the permittee / lessee -  expected  not expected  unknown

Legal requirements  compelling  not compelling

Other

Economic Considerations

**PART VI - DOCUMENTATION OF THE INVOLVEMENT OF PERMITTEES, STATE AGENCIES AND THE INTERESTED PUBLIC IN MAKING STANDARDS CONFORMANCE DETERMINATION AND CONTRIBUTING FACTORS DETERMINATION**

Indicate the occurrence of public participation (e.g. permittee, interested public, other Federal or State /local agency), or opportunities for public participation that pertains to the review of standards achievement and contributing factors (who, when, and conversation or meeting summary): **The documentation form was completed by a BLM interdisciplinary staff.**

**PART VII - AUTHORIZED OFFICER'S DETERMINATION AND PRIORITY FOR APPROPRIATE ACTION DEVELOPMENT AND IMPLEMENTATION**

- ( ) Existing grazing management practices or levels of grazing use in the Nut Mountain Allotment # 01010 promotes achievement of significant progress towards the Approved Northeastern California and Northwestern Nevada Standards and Guidelines for Livestock Grazing of July, 2000 and conforms with the Guidelines for Livestock Grazing Management.
- (X) Existing grazing management practices or levels of grazing use in the Nut Mountain Allotment # 01010 will require modification or a change prior to the next grazing season to promote achievement of the Approved Northeastern California and Northwestern Nevada Standards and Guidelines for Livestock Grazing of July, 2000 and conforms with the Guidelines for Livestock Grazing Management.

I have reviewed and concur with the determinations and supporting rationale regarding the achievement or lack thereof of rangeland health standards documented herein and, in the cases where standards are not achieved, the determination and rationale regarding the contributing factor(s) for failure to achieve the standards. I have determined that the priority for developing and implementing appropriate action to achieve significant progress to achieve standards for the area identified in Part I is (check one)

Priority:  high  medium  low

Staff is directed to develop appropriate action for my consideration and implementation in accordance with this priority.

  
SURPRISE FIELD MANAGER

3/12/2009  
DATE

**COMMENTS:**