



United States Department of the Interior



BUREAU OF LAND MANAGEMENT

Mother Lode Field Office

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Yankee Hill Road fuel break construction (CA-180-11-13) Finding of No Significant Impact February 2011

It is my determination that this decision will not result in significant impacts to the quality of the human environment. Anticipated impacts are within the range of impacts addressed in the Sierra Resource Management Plan (RMP)/Final Environmental Impact Statement. The proposed action does not constitute a major federal action having a significant effect on the human environment; therefore, an environmental impact statement is not necessary and will not be prepared. This conclusion is based on my consideration of CEQ's following criteria for significance (40 CFR §1508.27), regarding the context and intensity of the impacts described in the EA, and based on my understanding of the project:

- 1) *Impacts can be both beneficial and adverse and a significant effect may exist regardless of the perceived balance of effects.* The primary issue is occurrence of two BLM sensitive plant species Tuolumne iris (*Iris hartwegii columbiana*) and Red Hills soaproot (*Chlorogalum grandiflorum*) within the project area. Negative impacts to these species would be either avoided or, in some cases, minimized through strategic routing of the fuel break and by various project design features which will be enforced by a BLM botanist/monitor who will be present during project implementation and future maintenance. The impacts would, therefore, not be significant at the local or regional scale (cumulatively) due to the project design and due to the relatively small scale of the proposed action.
- 2) *The degree of the impact on public health or safety.* No aspects of the proposed action have been identified as having the potential to significantly and adversely impact public health or safety. In fact, the project is designed to help firefighters fight wildfire; therefore protecting public health and safety, especially for local residents.
- 3) *Unique characteristics of the geographic area.* The area affected by the proposed action does not generally have any unique characteristics. Soils, vegetation (with the exception of the two sensitive species), wildlife, cultural resources, etc. are all typical of the elevation and terrain in the central Sierra Nevada foothills.
- 4) *The degree to which the effects on the quality of the human environment are likely to be highly controversial effects.* No anticipated effects have been identified that are scientifically controversial. As a factor for determining within the meaning of 40 CFR 1508.27(b)(4) whether or not to prepare a detailed environmental impact statement, "controversy" is not equated with "the existence of opposition to a use." *Northwest Environmental Defense Center v. Bonneville Power Administration*, 117 F.3d 1520, 1536 (9th Cir. 1997). "The term 'highly controversial' refers to instances in which 'a substantial dispute exists as to the size, nature, or effect of the major federal action rather than the mere existence of opposition to a use.'" *Hells Canyon Preservation Council v. Jacoby*, 9 F.Supp.2d 1216, 1242 (D. Or. 1998).

5) *The degree to which the possible effects on the human environment are likely to be highly uncertain or involve unique or unknown risks.* The analysis does not show that the proposed action would involve any unique or unknown risks.

6) *The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.* Fuel break maintenance using hand crews, a rubber-tracked chipper, and pile burning is not precedent setting. BLM undertakes these types of projects on a regular basis.

7) *Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.* No significant cumulative impacts have been identified. The proposed action is consistent with the actions and impacts anticipated in the Sierra RMP.

8) *The degree to which the action may adversely affect National Historic Register listed or eligible to be listed sites or may cause loss or destruction of significant scientific, cultural or historical resources.* The proposed action would not affect cultural resources listed on or eligible for the National Register of Historic Places.

9) *The degree to which the action may adversely affect ESA listed species or critical habitat.* No ESA listed species (or their habitat) would be affected by the proposed action.

10) *Whether the action threatens a violation of environmental protection law or requirements.* There is no indication that this decision would result in actions that would threaten such a violation.

William S. Haigh
Field Manager, Mother Lode Field Office

Date



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EA Number: CA-180-11-13

Project Name: Yankee Hill Road fuel break construction

Location: MDM, T 2 N S, R 15 E, Section 6
Tuolumne County, CA (see attached map)

1.0 Purpose of and Need for Action

1.1 Need for Action

The Bureau of Land Management's Mother Lode Field Office (BLM) manages scattered public lands in the central Sierra Nevada foothills, especially in the chaparral belt and ponderosa pine belt. Due to decades of fire suppression, much of this area has not experienced wildfire in decades. Chaparral and other fuels have become decadent in some locales, increasing the possibility of a high-severity wildfire. At the same time, foothills communities such as Columbia and Yankee Hill have grown. There are now numerous private residences in the area, including adjacent to BLM-administered parcels containing dense fuels. Columbia Historic State Park is also located in the area. Local residents are concerned about wildfire. The public lands around these communities are considered to be within the wild land-urban interface (WUI) and the communities are considered "at risk." Some residents are anxious to see public land managers like the BLM take action to reduce fuels on public lands. Fuel breaks are needed to help give firefighters places to hold wildfire or launch suppression efforts.

In the past, BLM worked with local fire safe organizations to build a shaded fuel breaks on prominent ridges on public and private lands in the Yankee Hill area. The proposed action analyzed in this EA is to build a fuel break along Yankee Hill Road near the community of Yankee Hill, linking to other past and current fuel break projects sponsored by the local fire safe council, the Forest Service, and Cal Fire. This system of fuel breaks would be constructed to serve as a strategic holding point in the event of a wildfire. Because the fuel break proposed in this EA is important strategically to manage wildfire and protect local communities, BLM would like to maintain them over the next 10 years. This document only analyzes the portion of the project that takes place on BLM-administered public land.

1.2 Conformance with Applicable Land Use Plans

The proposed action—to build and maintain a shaded fuel break on public land near Yankee Hill—is consistent with the Sierra Resource Management Plan, approved in February 2008. The Sierra Resource Management Plan's Record of Decision (pages 15-16) gives BLM the goal of establishing a cost-efficient fire management program commensurate with threats to life, property, public safety, and environmental resources. BLM's objectives for meeting these goals are to 1) reduce the risk of wildfire in WUI communities; 2) reduce the risk of catastrophic wildfire through fuels management; 3) use prescribed fire, mechanical, and biological treatments to reduce fuels, promote ecosystem diversity and resilience, control invasive species, reduce fuel hazard, improve wildlife habitat, increase water yield, and enhance watersheds. The Mother Lode Field Office Fire Management Plan, approved in March 2008 gives BLM various fire and fuels treatment objectives and strategies for specific lands under

BLM's administration. Specific objectives and strategies for the fire management unit, in which the project area is located, are laid out in the plan. The proposed action is consistent with these objectives and strategies.

2.0 Proposed Action and Alternatives

2.1 Proposed Action

The proposed action is to construct a shaded fuel break on BLM-administered land along Yankee Hill Road near the community of Yankee Hill. The proposed fuel break would join the Cattle Drive Trail fuel break to the west with Highway 108 Fire Safe Council and Forest Service fuel reduction work to the east.

The fuel break would generally follow Yankee Hill Road.

- For the section of Yankee Hill Road east of the point where the active water ditch crosses the road at the top of the ridge: the fuel break would extend 150 ft south of the road pavement.
- For the section of Yankee Hill Road west of the point where the active water ditch crosses the road at the top of the ridge west to a point just past the spur road intersection near BM 3135 on USGS 7.5' map: the fuel break would extend 150 ft south of the road pavement.
- For the section of Yankee Hill Road west of the point near BM 3135 on the USGS 7.5' map west and south to the Cattle Drive Trail intersection: the fuel break would extend up to 200 ft on either side of Yankee Hill Road pavement. The fuel break would stay south of the active water ditch, until the ditch drops south toward Cattle Drive Trail.
- For the section of Yankee Hill Road south of the Cattle Drive Trail intersection: the fuel break would extend 100 ft from either side of the road pavement.

This route was designed to avoid as much as possible negative impacts to two rare plants found within the project area. These plants are Tuolumne iris (*Iris hartwegii columbiana*) and Red Hills soaproot (*Chlorogalum grandiflorum*). Refer to the attached map. Since it is not possible to route the proposed fuel break in a way that entirely avoids negative impacts, project design features in 2.2 would be followed to help prevent, or minimize, negative impacts to the rare plants.

A hand crew from the Highway 108 Fire Safe Council, the California Department of Forestry (Cal Fire), or the BLM Mother Lode Field Office would implement the project. The crews would use one or both of the following methods to build the fuel break.

- Hand crews would cut brush and trees (less than 6 inches DBH). The crews would feed cut vegetation into a rubber-tracked brush chipper staged on existing roads and road shoulders. The chipped vegetation would be broadcast over the project area.
- Hand crews would pile and prep vegetation in 6 x 6 ft piles for burning at a later date in accordance with a BLM-approved burn plan and other BLM policy.

Once completed the fuel break would continue to be maintained by a BLM-supervised hand crew at any time over the following 10 years. At the end of this 10-year period, fuel break maintenance would need to be reauthorized, perhaps with a "fresh" NEPA document. This document would need to be reviewed by the relevant staff to determine whether it is adequate to use to reauthorize maintenance.

During the 10-year period, maintenance would be done by a crew under BLM supervision. The fuel break would be maintained using any or all of the methods described above.

Any fuels treatment work (i.e., mechanical mastication or broadcast prescribed burn) that BLM may propose in the future affecting land outside the scope of the proposed action described above and/or outside of the area analyzed in this EA would be subject to BLM's full environmental review/decision-making process. In other words, a new NEPA document may be needed. Certainly, new cultural and biological recommendations would be needed.

2.2 Project Design Features

1. No French broom or Spanish broom should be moved outside of the boundary of the broom infestation. Do not move plants across a gap of broom of more than 20 ft wide. Broom can be piled and burned on site, or piled and left to decompose on site.
2. Two rare plant species have been found within the project area. These plants are Tuolumne Iris (*Iris hartwegii columbiana*) and Red Hills soaproot (*Chlorogalum grandiflorum*). The following project design features have been created to avoid negative impacts to these plants.
 - a. BLM personnel familiar with the rare plant issues should be on site when the project is started, and remain with the crews while they are working in the areas with the rare plant species. The BLM supervisor should stay on site until he/she feels fully confident that overhead and crews understand restrictions and will continue to observe them.
 - b. Where Tuolumne iris plants have been found and flagged, no cutting of overstory vegetation should occur within 20 ft of plants, or clumps of plants.
 - c. Where Tuolumne iris plants have been found and flagged, no burn piles should be created, and no chips deposited.
 - d. Where Tuolumne iris plants have been found and flagged, no equipment or vehicles should be used in the vicinity of the plants.
 - e. Where the Red Hills soaproot occurs, no equipment or vehicles should be used in the vicinity of the plants.
 - f. Where the Red Hills soaproot occurs, no burn piles should be created, and no chips should be deposited.

2.6 No Action

Under the no action alternative, BLM would not maintain the fuel breaks.

2.7 Alternatives Considered but Eliminated from Detailed Analysis

BLM did not consider any other alternatives in detailed analysis.

3.0 Affected Environment

The project area is located on a BLM-administered parcel in the central Sierra Nevada foothills. Elevations within the project area range from 2800 to 3200 ft above sea level, on the ridge/divide south of the Stanislaus River canyon. Specifically, the project area is the tops of prominent ridges and side slopes along Yankee Hill Road. The project area is near Blewetts Point near the headwaters of Woods

Creek, a tributary of the Stanislaus River. Soils within the project area are mapped at the 1:750,000 scale as paleozoic metasedimentary rocks, argillite, and quartzite.

Vegetation within the project area (and the general vicinity) varies depending on elevation, soils, aspect, soil moisture, microclimates, and other factors. The project area is generally dominated by west side ponderosa pine forest with incense cedar, sugar pine, gray pine, black oak, interior live oak, canyon live oak, California buckeye, deerbrush, toyon, white leaf manzanita, chamise, California coffeeberry, holly leaf redberry, western mountain mahogany, keckiella, golden fleece, poison oak, buckbrush, yerba santa, and mountain misery. The French broom and Spanish broom, both noxious invasive weeds, occur along Yankee Hill Road within the project area. This forested lower mountain environment provides habitat for a variety of wildlife including black bear, coyote, bobcat, grey fox, California quail, Steller's jay, raven, hawks, and eagles.

The project area is near the boundary of the Stanislaus National Forest. There is very little recreation within the project area. An area of trash dumping—locally known as Bear Can Corner—is located on BLM-administered land within the project area along Yankee Hill Road, near Blewetts Point, north of the Cattle Drive Trail intersection. There are mining claims and mining features (i.e., adits) within the project area.

The area is not known for its visual resources. BLM manages this area in accordance with class III visual resource management (VRM) standards. BLM's objective for class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat basic elements found in the predominant natural features of the characteristic landscape.

Present within the project area is the rare plant Tuolumne Iris or *Iris hartwegii* ssp. *columbiana*. As currently understood, this taxon has a very limited distribution, with all occurrences in the vicinity of Columbia, California. The habitat for the taxon given by Munz in a *California Flora* is "Dry slopes on borderline between Foothill Wd. [woodland] and Yellow Pine F. [ponderosa pine forest]" (1973:1681). The other subspecies of *Iris hartwegii* are all associated with low elevation forest. Clearly, this is a species that commonly occurs with tree overstory. Nevertheless, many descriptions of the species habitat mention open forest. The occurrence at the project site fits this description, with most plants exposed to partial shade, and many plants receiving direct sun some portion of the day.

A literature search found no ecological studies of the taxon, much less any that examined whether the removal of a portion of overstory vegetation would impact the taxon positively or negatively therefore we looked at studies involving other taxa for relevant information.

Three studies were found where *Iris hartwegii* (but not Tuolumne Iris) was exposed to forestry treatments and impacts were observed. The first study examined the recovery of vegetation in an eight acre clearcut at Challenge Experimental Forest (McDonald 1999). Apparently no data were taken before the tree harvest occurred. There was no apparent trend in density of plants. For instance, the highest number of *Iris* plants per acre was observed in the first and fourth years. However, cover of *I. hartwegii* increased from a trace (observed in each of the first three years after the clearcut) to 17 sq ft/acre five years after the clearcut. The author proposes that as the clearcut ages, shade tolerant perennials likely increase in density and reside in both sun and shade environments.

A second study, at Blodgett Forest Research Station (Battles *et al.* 2000), looked at areas that experienced four different timber harvest/silvicultural treatments and compared them with controls where no harvest had occurred in almost 100 years. In an interesting result, stands that experienced the

most intensive silvicultural treatment (clearcut, site preparation, and planting) and the control stands that were not treated both had *Iris hartwegii* among their five species of highest density. Shelterwood treatments and single tree selection treatments, which are intermediate in terms of impact (harvest effects but no site preparation and planting), did not have *Iris hartwegii* among their top five species in terms of density.

In a study of various fuel reduction treatments at Blodgett Forest Research Station (Collins *et al.* 2006), the authors present a table of treatment effects to thirteen understory species including *Iris hartwegii*. Mechanical treatment in this study involved thinning from below plus mastication; a greater reduction of canopy cover than what is being proposed in this fuel break construction project. Both control plots and those that were mechanically treated remained unchanged in terms of frequency of *Iris hartwegii* (i.e., the percentage of plots containing at least one *Iris hartwegii*). They found that mechanically treated plots that were subsequently burned, and plots that were only burned, both saw decreases in the frequency of the species.

These three studies taken together do not present enough information to judge the impacts of canopy removal. The McDonald (1999) study suggests that there are increases in *Iris* foliar cover after clear cutting and slash disposal. But which factors reduced *Iris* cover to trace levels, for instance (1) tractor work to pile and burn slash, or (2) canopy removal, is not addressed, because there is not pretreatment data.

The Battles *et al* (2001) study shows that *Iris hartwegii* can reach high densities in plantations. This suggests that if *I. hartwegii* is negatively impacted by harvest, site preparation and planting, it can recover its numbers over time. But the plantation data in McDonald show very little correlation between density and cover for the species. The first year after the clearcut in that study, the density of *Iris hartwegii* was nearly at the maximum achieved over the five year period. But cover was so sparse that year the researchers chose not to even measure it, calling it a trace. Comparing numbers of individuals among treatments may not be sufficient without knowing the age, size, and reproductive status of the plants.

The Collins (2006) study indicates that frequency of finding *Iris hartwegii* in plots is little affected by mechanical treatment alone (two years post-thinning and one year post-mastication). But frequency of finding a species again has little correlation with age, size, and reproductive status. For instance, one year after treatment, if there was a flush of seedlings, even seedlings with little likelihood of reaching maturity, they would still produce high frequency and density numbers.

Research on other species clearly indicates that the sudden exposure of shade-grown plants to greater light intensities can be damaging. In a study of tropical plants (Lovelock *et al.* 1994), the authors found photoinhibition (loss of efficiency of light utilization in photosynthesis) occurred for all four species tested when they were suddenly exposed to higher light levels. The species chosen for the experiment represented a full spectrum of light level habitats (e.g., two understory species commonly found in full shade, and two species commonly found in full sun, either growing in rain forest gaps or in open coastal environments). The most shade-tolerant species showed the greatest photoinhibition. All species showed leaf senescence and bleaching, but leaf damage and loss was highest for the species commonly growing in the understory. The authors note that rainforest disturbances are often followed by a mass mortality of seedlings. They suggest that photoinhibition may be one of several factors leading to these deaths—desiccation being another obvious possibility.

Given the lack of definitive information about the potential impacts to *Iris hartwegii columbiana* from the overstory removal involved in fuelbreak construction, and the known negative impacts to other plant species when overstory layers are removed, the conservative course of action is to avoid

removing canopy where the *Iris* occurs. This can best be accomplished by routing the fuelbreak to avoid the species. Where this is not practical, creating a 20 ft buffer (where shrubs and trees will not be cut) around individuals or clumps of *Iris* plants will accomplish much the same ends.

4.0 Environmental Effects

The following critical elements have been considered in this environmental assessment, and unless specifically mentioned later in this EA, have been determined to be unaffected by the proposal: areas of critical environmental concern, prime/unique farmlands, floodplains, wetlands and riparian zones, wild and scenic rivers, wilderness, and environmental justice.

4.1 Impacts under the Proposed Action

The proposed action would have negligible impacts on atmospheric, water, and soil resources. There are small seasonal streams in the area. The project area is not located on a major stream. The area that would be treated is relatively small in size. Use of a rubber tracked chipper would be staged on the existing paved and gravel roads and is expected to cause little soil disturbance. Erosion of sediments into local streams should not occur. Chipped brush and other fuels would be dispersed throughout the project area or piled for burning, except for areas where Red Hills soaproot occurs and not within the 20 ft buffer for the Tuolumne iris. This layer of mulch would help prevent erosion. Cutting and chipping of fuels, as proposed, would create some dust, but not enough to affect air quality. The effects would be negligible and short term. Smoke from burning piles of cut vegetation would also have a negligible short-term affect on atmospheric resources.

BLM botanists studied the area potentially impacted by the proposed action to determine whether the fuels work would negatively affect special status botanical resources. Their analysis was designed to help BLM meet its obligations under the Endangered Species Act and other authorities. The inventory was led by BLM botanist Al Franklin (now retired). The botanists identified two special status plants within and near the project area: Tuolumne iris (*Iris hartwegii columbiana*) and Red Hills soaproot (*Chlorogalum grandiflorum*). Red Hills soaproot is a BLM sensitive species. Tuolumne iris is listed by the California Native Plant Society as a category 1B rare plant, meaning that it is “rare, threatened, or endangered in California and elsewhere”. Under California BLM policy, 1B category plants are to be treated the same as BLM sensitive species.

Red Hills soaproot has been encountered on other projects and its management needs are well known. Occurrences of Red Hills soaproot would be avoided. Per the project design features in section 2.2 of this EA, pile burning or dispersing chipped vegetation on these plants would not be allowed. The Tuolumne iris is subspecies of *Iris hartwegii* and has a limited distribution (near Columbia, California in Tuolumne County); less is known about its management needs. It has not been previously found on BLM-administered lands. Al Franklin, with help from other BLM botanists, studied the Columbia iris and similar plants in the same genus and species (*Iris hartwegii*). The study involved botanical study and consultation with the taxon expert as well as a literature review. The results of the study are summarized in the section 3.0 (Affected Environment) of this EA. The main finding is that while the effects of fuels-related projects on Tuolumne iris are unknown, it is likely that it prefers a shady, cooler microclimate within the project area. Tuolumne iris is found mainly under oak and toyon near the active water ditch on the ridge top or along a road cut on the shady north side of the ridge (north of Yankee Hill Road).

Removing small trees and brush, as proposed, would likely have a negative effect on the Tuolumne iris population. Therefore, to minimize potential negative effects, BLM has taken the recommendations of Al Franklin into account (refer to his attached report) and has routed the fuel break in a way that avoids many of the Tuolumne iris (especially occurrences on the north side of the Yankee Hill Road) but still

allows for the construction of an effective ridge top fuel break. Where the fuel break cannot be routed to avoid iris occurrences (especially on the ridge top on the south side of Yankee Hill Road near the east end of the project area), a 20 ft vegetation buffer including oaks and shrubs would be left around individual irises and clusters of irises. This approach is a project design feature found in section 2.2 of this EA. A BLM botanist/monitor would be onsite during project implementation to enforce all project design features.

The BLM wildlife biologist analyzed the impacts of the project on wildlife, especially on special status wildlife. Her analysis was designed to help BLM meet its obligations under the Endangered Species Act and other policies. The biologist recommended that the proposed action would not affect threatened and endangered wildlife or other BLM special status wildlife.

The BLM archaeologist conducted a cultural resource study of the project area. The study included background records search and a field inventory. The study was designed to help BLM meet its obligations under Section 106 of the Historic Preservation Act. Historic-era cultural resources including mining-related features, an old trail, and abandoned and active ditch segments were identified within the project area. These resources would either not be affected by the proposed action or would be avoided. The BLM archaeologist recommends that no significant cultural resources would be affected by the proposed action. This includes places of Native American religious and/or cultural significance (refer to the Section 106 compliance study attached).

The project area sees some recreational use. The proposed action could have negligible short-term impacts on recreational use. Walkers, joggers, bicyclists, and motorists might be inconvenienced temporarily during project implementation due to the noise and dust caused by cutting and masticating fuels. Recreationists would continue to use the project area after the proposed action is implemented.

The proposed project would have a negligible impact on visual resources. It would not, for example, mar the scenic beauty of a Class I or II stretch of Sierran river canyon. The proposed action is consistent with BLM's VRM class III management objective which is to partially retain the existing character of the landscape.

4.2 Impacts of the No Action Alternative

There would be no serious impacts to sensitive environmental resources, such as the two rare plants found within the project area. The impacts to these species would be either avoided or minimized through the routing of the fuel break and the project design features. There could, however, be impacts to firefighting efforts if the proposed action does not move forward. If a wildfire occurred, firefighters would not have this strategic fuel break to stop the advance of the fire and attack the fire. The result could be a larger wildfire that impacts environmental resources well beyond the project area. There may also be impacts to private property.

4.3 Cumulative Impacts

The proposed action is expected to have beneficial cumulative impact on wildfire suppression in the area as long as BLM maintains the fuel break. Negative cumulative impacts are not anticipated. The proposed action would not impact significant biological and cultural resources. The proposed action would not impact water and soil resources.

5.0 Agencies and Persons Consulted

No outside agencies were consulted.

5.1 Authors

James Barnes, BLM NEPA coordinator/Archaeologist
Al Franklin, BLM Botanist
Lauren Fety, BLM Biology Technician
Brian Mulhollen, BLM Fuels Management Specialist

5.2 BLM Interdisciplinary Team/Reviewers:

<i>/s/ James Barnes</i>	<i>2/17/11</i>
NEPA coordinator/Archaeologist	Date
<i>/s/ Brian Mulhollen</i>	<i>2/16/11</i>
Fuels specialist	Date
<i>/s/ Jeff Horn</i>	<i>2/8/11</i>
Recreation specialist	Date
<i>/s/ Lauren Fety</i>	<i>2/8/11</i>
Botanist	Date
<i>/s/ Peggy Cranston</i>	<i>2/10/11</i>
Wildlife specialist	Date

5.3 Availability of Document and Comment Procedures

This EA will be posted on Mother Lode Field Office's website (www.blm.gov/ca/motherlode) under NEPA and will be available for a 15-day public review period. The EA is also available by mail upon request during this 15-day public review period. Comments should be sent to James Barnes at Bureau of Land Management, Mother Lode Field Office, 5152 Hillside Circle, El Dorado Hills, California 95762 or emailed to jjbarnes@blm.gov.

5.4 References Cited

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