

1019

"Richard T.
Petrus"
<rpetrus@atwell-group.com>
02/12/2010 09:02 AM
To
<lane_cowger@blm.gov>
cc
Subject
Potential Site

Lane; Enjoyed our discussions last night. Attached is an ADEQ flyer that describes the property and shows the location. Hope this helps and it could be a jointly funded project with ADEQ and EPA, Rich

Rich Petrus
Atwell, LLC
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Mesa, AZ 85206

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(See attached file: Chaparral Gulch Flyer.pdf)

1019



Iron King Mine & Humboldt Smelter Site

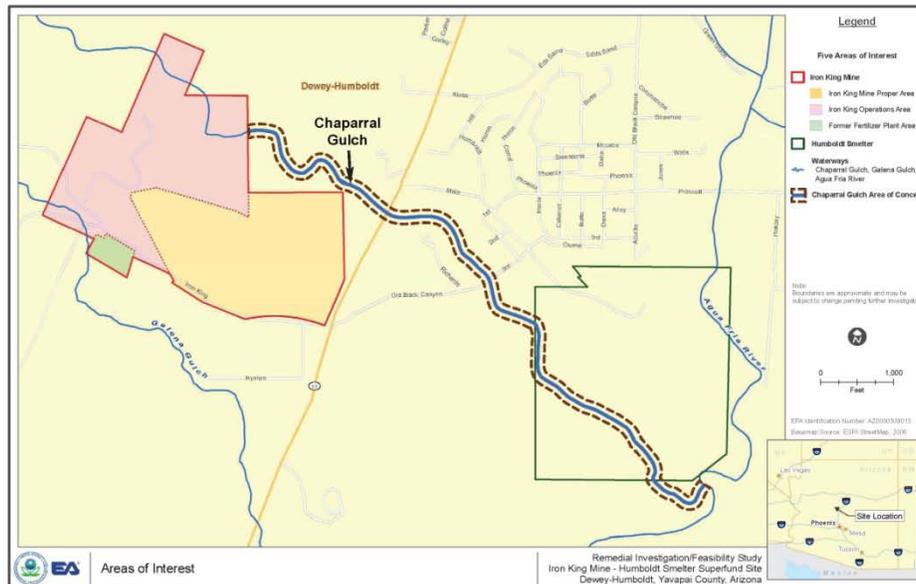
U.S. Environmental Protection Agency • Region 9 • San Francisco, CA • May 2009

Chaparral Gulch Shows Elevated Arsenic

EPA is conducting an investigation at the Iron King Mine – Humboldt Smelter Superfund Site in Dewey-Humboldt, Arizona. EPA completed most of the sample collection during summer and fall 2008. We are currently compiling the results which will be included and described in the forthcoming Remedial Investigation Report.

The Remedial Investigation Report will include a risk evaluation that estimates the current and future potential health risks from the Site. Preliminary sampling results indicate the presence of elevated levels of arsenic in the Chaparral Gulch that could present a health risk if a person is exposed to the arsenic over a long period of time. Arsenic is naturally occurring in soils in Arizona; however, the amount of arsenic in the soil in Chaparral Gulch has increased through mining and smelting activities in the area.

Arsenic can enter the body through breathing and/or ingesting contaminated soil. EPA recommends that residents limit or avoid contact with soils and any water in the Chaparral Gulch. Chaparral Gulch is easily accessible to the public as no fences or gates prohibit access. However, EPA advises residents, especially young children, to stay out of this area.



Chaparral Gulch Sampling

EPA collected surface and subsurface soil samples in the Chaparral Gulch. These samples were analyzed for metals, nitrates, nitrites, and sulfates, and perchlorate.

Surface water and sediment samples were collected approximately every 400 to 500 feet along the Chaparral Gulch when water was present (during or shortly after a rain event). Surface water was analyzed for metals, nitrates, nitrites, sulfates, perchlorate, and total dissolved solids.

Sampling Results

Results indicated elevated levels of arsenic in soil, sediment, and surface water in the Chaparral Gulch. The Chaparral Gulch contains tailings from both the Iron King Mine and the Humboldt Smelter. Additionally, a dam located on the smelter property within the Chaparral Gulch has collected tailings from the Humboldt Smelter that were deposited when an uphill settling pond was breached. EPA is still evaluating the nature and extent of this contamination. The results will be part of the Remedial Investigation Report.

Questions and Answers

How does arsenic affect my health?

The levels of arsenic found in the soil samples are low enough not to pose an immediate health problem. EPA is concerned about extended exposure to arsenic since it can cause long-term health effects.

The health effects of arsenic are determined by how much dust and soil is routinely ingested or inhaled. Swallowing or inhaling soil or dust laced with arsenic is the primary path for entering the body. Touching soil does not pose a threat.

Arsenic exposure may be linked to cardiovascular and vascular disease, diabetes, nausea or upset stomach, diarrhea, headaches and a variety of cancers: skin (non-melanoma type), kidney, prostate, lung, bladder and liver.

Why are young children more at risk?

EPA is concerned about young children as they can inhale and eat dirt while playing. This behavior is a concern for children who live in areas with elevated arsenic levels in the soil.

If I am in contact with the soils in Chaparral Gulch, does the contamination pose an immediate health risk?

In general, short-term exposure to contamination in the Chaparral Gulch will not cause an immediate health risk. EPA is most concerned about long-term exposure which could potentially cause health effects.

Iron King Mine & Humboldt Smelter Site

Chaparral Gulch Shows Elevated Arsenic

Advisory

EPA recommends that people, especially small children, stay out of the Chaparral Gulch. This precautionary advice is meant to reduce human exposure to arsenic contamination in the Chaparral Gulch.

Contact Information

Individuals who would like more information should contact:

Leah Butler
(415) 972-3199
butler.leah@epa.gov

EPA's toll free message number is
(800) 231-3075



For site documents, please visit the information repository at:

Humboldt Town Library
2735 S. Corral Street
Dewey-Humboldt, AZ



Please visit the Iron King Mine and Humboldt Smelter Site website at:
<http://www.epa.gov/region09/ironkingmine>

United States Environmental Protection Agency
Region 9
75 Hawthorne Street (SFD-6-3)
San Francisco, CA 94105
Attn: David Cooper (IKHS 5/09)

FIRST-CLASS MAIL
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Official Business
Penalty for Private Use, \$300
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1020

From: Kevin Davidson [mailto:Kevin.Davidson@co.mohave.az.us]
Sent: Tuesday, February 02, 2010 10:58 AM
To: az_arra_rdep@blm.gov
Cc: Geeslin, Jennifer; MohaveDownwinders@Yahoo.com
Subject: BLM Arizona Scoping for the Restoration Design Energy Project in Kingman on February 24th

Teri:

Thank you for the notification! Do you have any restoration lands in mind when referring to Mohave County? During WWII, large swaths of Mohave County were used by the Army Air Corps as a gunnery range. Other lands, I have heard, still have some background radiation from atmospheric nuclear testing dating from 1950s. These lands are probably better suited for energy production than human settlement.

Kevin Davidson
Planner II
Mohave County Development Services Department

1021

April Laliberte
<ALaliberte@flagstaffaz.gov>

03/04/2010 10:37
AM

"'az_arra_rdep@blm.gov'"
<az_arra_rdep@blm.gov>

To

cc

Subject

FW: Application for Restoration
Design Energy Project

Please see attached application materials. I also have a map of existing transmission lines if you would like it. It's a large file (map).

Thank you,

April Laliberte

April Laliberte
Brownfield Specialist
Economic Vitality
alaliberte@flagstaffaz.gov
928-913-3217

(See attached file: External-Call-for-submissions_Wildcat.pdf)(See attached file: Map of Wildcat Sludge area.mht)

1021



NATIONAL SYSTEM OF PUBLIC LANDS
RESTORATION DESIGN ENERGY PROJECT

The National System of Public Lands Restoration Design Energy Project, funded under the Department of Interior's American Recovery and Reinvestment Act (ARRA) of 2009, will support President Obama and Secretary Salazar's goals to build America's new energy future and to protect and restore treasured landscapes. Implementation of this initiative will result in the identification of disturbed or previously developed sites within the National System of Public Lands in Arizona that, after remediation or site preparation, can be made available for renewable energy development or generation. This will be accomplished through a public process including the completion of an environmental analysis that will evaluate alternative land use allocations and the suitability of sites for the development of renewable energy.

Criteria:

The criteria for submission of potential sites include; parcels of public land that may require remediation or do not have higher resource values and may be suitable for renewable energy development. Following is a list of the types of sites that may be considered for analysis and as potential sites for renewable energy rights-of-way. This is not intended to be an all inclusive list. There may be other type of sites which would be equally important to submit for consideration.

- Hazardous material sites or brownfields
- Abandoned Mine Lands sites
- Former land fill sites
- Inactive or exhausted mineral material sites or gravel pits
- Sites damaged or disturbed to the extent that restoration potential is limited
- Sites with very limited productivity due to a disruption of natural processes (i.e. isolation from hydrological processes).

Evaluation:

In addition to restoration potential, sites will also be evaluated on their technical suitability for alternative energy development (e.g. ability to connect to transmission, relationship to a source of demand, reliance on additional water allocation).

Submit a proposal:

To submit a site to be considered for inclusion in the environmental analysis, please send the attached form by August 14, 2009 to az_arra_rdep@blm.gov or BLM Arizona State Office, One North Central Avenue, Suite 800, Phoenix, AZ 85004-4427, Attention: Restoration Design Energy Project.

For more information, please contact Teri Raml at 602-417-9388 or teri_raml@blm.gov.

6/30/2009

1021



**NATIONAL SYSTEM OF PUBLIC LANDS
RESTORATION DESIGN ENERGY PROJECT
BLM AZ SITE SUBMITTAL FORM**

Criteria: Parcels of public land that may require remediation or do not have higher resource values and may be suitable for renewable energy development. Examples include; hazardous material sites or brownfields, Abandoned Mine Lands sites, former land fill sites, inactive or exhausted mineral material sites or gravel pits, sites damaged or disturbed to the extent that restoration potential is limited, or sites with very limited productivity due to a disruption of natural processes (i.e. isolation from hydrological processes).

Submit a proposal: To submit a site to be considered for inclusion in the environmental analysis, please complete and send this form to az_arra_rdep@blm.gov or BLM Arizona State Office, One North Central Avenue, Suite 800, Phoenix, AZ 85004-4427, Attention: Restoration Design Energy Project.

Please submit proposal by August 14, 2009.

Name of Site:

Wildcat Hill Wastewater Treatment Facility

Legal Description:

S2NW4NW4, SW4NE4NW4, W2SW4NW4, SE4NW4 EXC ANY PT LYING IN ATSF RR. & I-40 & EXC COUNTY RD 240-44 SEC 9 21N-8E 78.023 AC

Political Boundaries (Congressional District, County, Municipality):

City of Flagstaff

Estimate of acreage available for development:

40

Brief Description of Disturbance or Previous Development:

Wildcat Hill Wastewater Treatment Facility is owned by the City of Flagstaff. Currently, 40 acres are used for processing wastewater biosolids, a practice the City would like to replace with a more environmentally conscious method. The City's Sustainability Program has been researching options for biosolid-to-energy technology at the facility. There is significant support at all levels of leadership for a renewable energy project and/or reuse of this brownfield property.

The property is considered a brownfield because of the potential contamination that exists. The use and past use of the land will severely limit how the property can be used in the future.

Timeline for this project is 2-5 years.

Point of Contact (include phone number and e-mail address):

April Laliberte, alaliberte@flagstaffaz.gov, 928-699-8708

For more information, please contact Teri Raml at 602-417-9388 or teri_raml@blm.gov.

6/30/2009

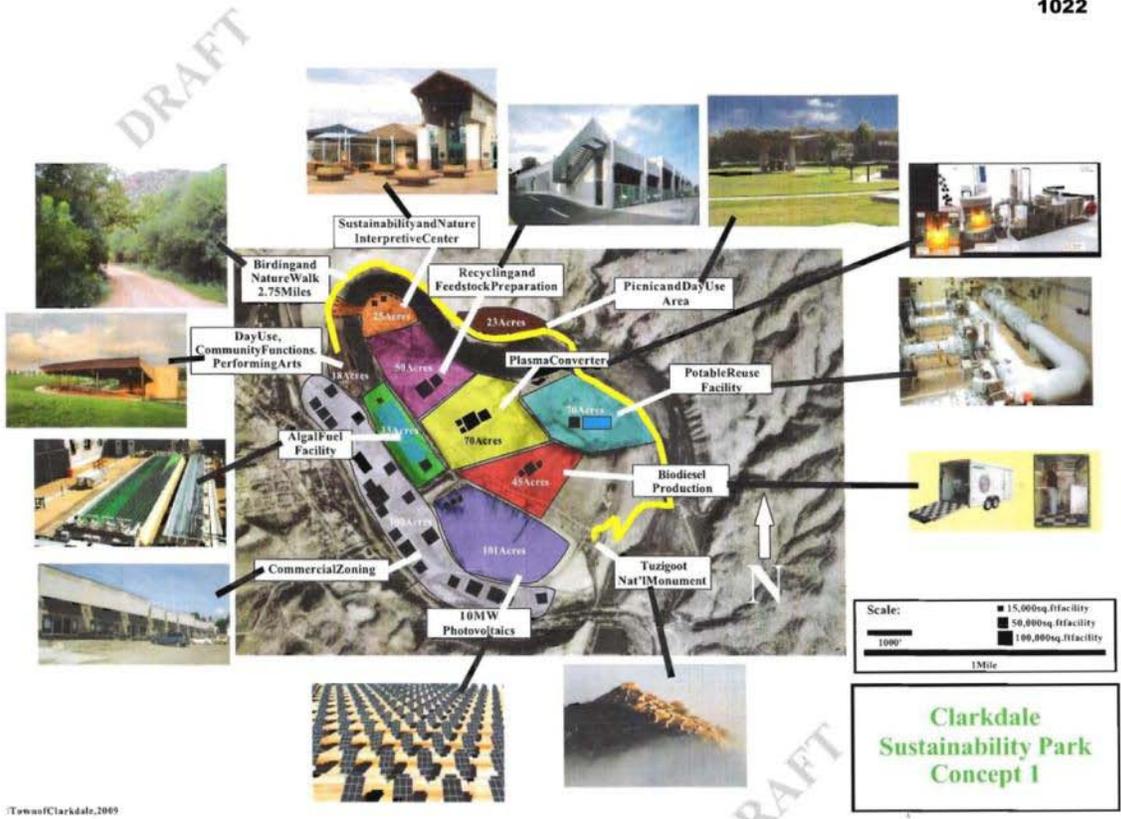
Coconino County, AZ - 3/2/2010



Disclaimer: Map information is believed to be accurate but accuracy is not guaranteed. No portion of the information should be considered to be, or used as, a legal document. The information is provided subject to the express condition that the user knowingly waives any and all claims for damages against Coconino County that may arise from the use of this data.

Map scale 1:12717

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Town of Clarkdale, 2009

**Clarkdale Sustainability Park
White Paper**

Last Update: 8/17/09

PROLOGUE

The Clarkdale Sustainability Park is a concept that is new and exciting, and the rewards for success are massive. This concept will fundamentally change the way we see our cities and towns, and the way our municipalities are financed, the services they provide their citizens and how they are delivered. This project will forever change the dominant paradigm of municipal governance and become a model for communities throughout the country. Clarkdale began life as a model community, built and nurtured by a spirit of determination to succeed and a drive to create new economic opportunities. Clarkdale once again has an opportunity to realize new horizons. It is fortuitous that the company that founded Clarkdale is once again in a position to help move our Town into that new economic reality. But the possibilities exceed economic development. They will extend to new sustainable practices in energy generation, water use and reuse, and even political stability gained by a robust and growing economic base. This plan provides all that and so much more, and the potential benefits to Clarkdale, the Verde Valley and the State of Arizona, are vast. In this concept we have the opportunity to do something great - to change our world for the better.

THE CONCEPT

The concept, at first glance, is a traditional master-planned industrial and commercial park. What makes this plan unique is the component facilities' interdependence and synergy. The impact and benefits of the Park's individual components will be greater than the sum of their parts. This Park will be occupied by a mix of private and public interdependent enterprises all of which have one overarching principal: a dedication to environmental, energy, economic and social independence and sustainability. The Park will become the economic and social engine of the Town of Clarkdale. It will provide enough electrical power to supply the entire Town and then some. It will become a major enterprise fund for the citizens of Clarkdale. It will change the way we dispose of municipal wastes, hazardous wastes, and industrial pollutants. Rather than burying our trash, thereby polluting our land, air, and aquifers, we will turn it into profitable products, not the least of which is energy. The Clarkdale Sustainability Park will also be an educational opportunity for the other governments interested in sustainability for their citizens.

In keeping with today's accepted definition of sustainability, which is "practices which meet the needs of the present without compromising the ability of future generations to meet their own needs," this Park will be a shining example of how one town might meet that ideal.

PREFERRED PROPERTY LOCATION

The Clarkdale Sustainability Park (called the “Park” hereafter) would fit well in the area in the middle of the Peck’s Lake oxbow, including the area of tailings recently remediated by Freeport McMoRan Copper and Gold. Freeport McMoRan is also the current property owner. The total area, including the lake, covers approximately 520 acres. A map of the area and preliminary layout of the components of the Park is in Attachment A.

This area is currently subject to a development agreement originally written between the Town of Clarkdale and Phelps Dodge Mining Corp. Under that agreement Phelps Dodge and its successor, Freeport McMoRan, could place roughly 900 homes on the 977 acres of land as well as commercial properties. Originally the area included a golf course, but that has been removed from the plan.

As a condition of the agreement, Phelps Dodge consented to install a new wastewater treatment plant for Clarkdale on the property. The plant’s initial improvements were put in place, but the plant was never completed. Part of that installation included a wastewater pipeline under the Verde River, terminating on the northeast part of the property near the site of the future wastewater facility. To our knowledge, that pipeline is still a usable conveyance for wastewater or potable water.

The eastern edge of the property is adjacent to Tavasci Marsh, which is now owned by the National Park Service and administered by Tuzigoot National Monument.

Peck’s Lake, the dominant feature of this property is a shallow man-made lake which receives the bulk of its water from the Verde River through Brewer’s tunnel at the northwest corner of the property. The diversion for that water can be seen just downstream from the Clarkdale Metals slag pile. Currently more water is flowing from the river through the lake than is needed to replace loss due to percolation and evapo-transpiration. The excess flow continues through a weir at the east end of Peck’s Lake, thence through Tavasci Marsh. The National Park Service is exploring ways to divert or stop this excess flow, as it is considered to be highly detrimental to the natural health and diversity of the marsh. The lake is shallow, generally less than 10 feet deep, and thus, is choked with various invasive and noxious aquatic vegetation, most notably Eurasian Milfoil and two species of water lilies. Peck’s lake is in the process of eutrophication, which is a biological and chemical process that inevitably produces a wet meadow instead of a lake. In order to stop and reverse this eutrophication, the lake would need to be dredged or otherwise deepened and the noxious weeds removed. The lake is also home to many non-native fish, including Northern Pike, Yellow Perch, Smallmouth Bass and several species of sunfish, such as Bluegill, Pumpkinseed, Green Sunfish and others. There are no known native fish breeding in Peck’s Lake.

The lake area was originally built as a source of process water for the smelter and as a recreational facility for the people of Clarkdale. In addition to the lake, the area included a 9-hole golf course, lake, dance hall, clubhouse, and picnic areas. Until 2003 the lake

and surrounding property were leased to the Town of Clarkdale and continuously used for recreation, nature watching, fishing, etc. In 2003 the Town's lease expired and was not renewed, and in December of that year, Phelps Dodge closed the property to the public and it has remained closed since then. The lake has continued to degrade over the years to the point that diversity of waterfowl and other birds is now less than half of what it was only 10 years ago.

The area identified in Exhibit A has several advantageous attributes that make it a very good candidate for the Park project. The old remediated tailings cannot be used for commercial or residential property without extensive additional remediation, but they may be suitable for such things as a photovoltaic array with its minimal traffic. The area adjacent to Tavasci Marsh was used as a borrow, or topsoil source, to cap the tailings, and that area is now practically unusable for anything but industrial applications. The south end of the lake is a dead appendix, since the inflow to the lake is near the midpoint of the oxbow, and could easily be cut off from the rest of the lake to be filled in or used as it is for an algal fuel operation or other sustainable energy project. Since there is already a pipeline running from the current Clarkdale Wastewater Facility to the borrow area, that area could conceivably serve as a center for water purification and potable or non-potable reuse facilities. The land between the arms of the oxbow would be well suited to house the heart of the Park, the Plasma Converter and associated activities.

PARK COMPONENT FACILITIES

Plasma Converter/Recycling Center

The heart of the Park will be a Plasma Converter, also known as a Plasma Gasifier. This technology is a relatively new and uses a very high temperature plasma stream (similar to the plasma torches commonly used to cut metals) to literally vaporize almost any material that is introduced into it. The equipment is manufactured by such companies as Westinghouse (<http://www.westinghouse-plasma.com/>), Startech Environmental (<http://www.startech.net/>), Plasco Energy Group (<http://www.plascoenergygroup.com/>) and others. In essence, the Plasma Converter will break down municipal solid waste (MSW), hazardous wastes, medical wastes, and practically anything else into their elemental components. The bulk of the product from this treatment comes off as "Syngas" or synthetic gas. Syngas is very high in hydrogen, and is normally burned in generators which will power the converter itself. Additionally, the generators produce an average of about 30% excess electrical energy that can be used by other facilities on the property, or fed back to the electrical grid. The converter also produces heat which can be used as energy for various other operations in the Park, such as the water purification facility. These converters normally run 24 hours a day, 7 days a week, and can easily be maintained and parts changed while the units are operating.

In addition to heat and electricity, Plasma Converters can be configured to produce valuable metals from the waste, as well as nanocarbons that are in very high demand for use in new battery technologies and other high-tech applications. The Plasma Converter facility would include a modern recycling operation stationed at the front end of the

process. In this operation, easily recyclable materials would be sorted out of the waste stream for recycling and the remaining waste shredded and fed into the Converter.

The Plasma Converter will primarily be fed municipal solid waste as “feedstock,” but any other waste material, such as construction waste, hazardous materials, medical waste, and industrial wastes can also be used. The Verde Valley generates about 130 tons of solid waste per day, enough to feed a moderately-sized plasma converter.

While Appendix A shows a 70-acre tract reserved for the Plasma Converter and an additional 50 acres for feedstock preparation and recycling center. The actual area used will likely be less than half this.

Algal Fuel Facility

The emerging field of algal fuel holds great promise as a way to help wean us from fossil fuels by creating a biodiesel from algae. Typically, the algae are grown in highly efficient, closed systems (systems not open to the environment). Algae grown in the facility will produce oils that can be converted easily to fuel oil. Typical yields are around 30,000-50,000 gallons of fuel per acre, per year, but recent advances may take yields to over 150,000 gallons per acre. The Algal Fuel operation could occupy the area that was the south end of Peck’s Lake, the area adjacent to the tailings and slurry dam. This area covers around 33 acres.

Photovoltaic Array

A photovoltaic array would occupy the area that has been reclaimed from the old tailings fields west of Tuzigoot National Monument. The array could hold approximately 100 acres of solar panels, and could yield approximately 10 megawatts (MW) of electricity. Ten megawatts is enough to power about 1,800 homes, or a town of around 4,000-5,000 people, which is slightly larger than Clarkdale’s current population of 4,000. Photovoltaic cells do not require water as a heat conveyance, so will not deplete an already-stressed groundwater supply.

Biodiesel Facility

The Park would have ample space for a Biodiesel production facility. Biodiesel is normally made from cooking oil and other vegetable oils. This facility could be a perfect adjunct to the Algal Fuel operation, converting not only waste cooking oil, but also the oils produced in the algae facility. Appendix A shows about 45 acres reserved for biodiesel, but this is likely very generous, and 5-10 acres may be sufficient.

Potable Reuse Facility

The Potable Reuse Facility will be a state of the art water treatment facility which will ultimately produce pure, potable water from wastewater. The Plasma Converter could supply necessary electrical power to this facility and possibly also supply heat that could be used in a distillation process. The treatment facility could receive treated effluent from the Clarkdale wastewater treatment plant across the river through the existing pipeline, or wastewater could be piped directly to the facility for primary, secondary and tertiary treatment, the product of which would be drinkable water. A potable reuse facility could increase Clarkdale's water portfolio enough to avoid or forestall expensive new water resource acquisition for many years. The potable reuse facility in Appendix A sits on 70 acres, but actually only about 25 acres will probably be needed.

Nature and Sustainability Interpretive Center/Day Use/Nature Trails

The land to the north and west of the lake could be a premier natural area, hosting a nature observation trail, picnic areas, interpretive center, and other civic and art facilities. A trail system through that area would be one of the finest birding trails in the Verde Valley, and it is actually inside the first Audubon Society "Important Bird Area" (IBA) in the state, the Tuzigoot IBA. This IBA lists more than 200 species of birds and untold other diversity within its boundaries, which stretch from Dead Horse Ranch State Park to Tapco, just upstream from the lake. It may be possible to remediate the lake from the Brewer's Tunnel inlet to the east end sufficiently to return it to an excellent habitat for waterfowl and other birds and native fish.

A modern interpretive and educational center would provide the public with learning opportunities centered on sustainability as well as local nature and history. The facility could house a small conference area and learning facility, as well as a traditional interpretive center, or museum. This facility could be a wonderful adjunct to the Tuzigoot museum, and could host seminars on sustainable energy, economies, etc. The facility might occupy the end of the peninsula between the arms of the oxbow, as well as the areas on the other side of the lake, to the west, north and east of the lake. Not only could this facility provide public learning and recreational opportunities, but also enhance the local tourist economy.

About 75 acres have been identified for these various uses.

Commercially Zoned Areas

The Park plan provides for approximately 100 acres of commercially zoned property. This commercial area might house businesses that are complimentary to the other facilities in the Park, such as supply and equipment houses, motel, restaurants, and various retail operations.

Other Possible Occupancies

We are certainly not limited to the components described in this paper. There will be unforeseen opportunities that we cannot imagine at this juncture and we will need to keep our minds open to these new possibilities. A Park like this can add other community and sustainability-related projects, such as a biomass-to-energy plant, community garden, hydroponic and vertical hydroponic agriculture, dog park, outdoor event venue, and various demonstration or proof-of-concept operations.

Of the 977 acres included in the original development agreement, the Park covers only about 520, leaving another 450 acres available for other types of development. Much of this property is high and overlooks the property from north of the lake.

Future Expandability

Appendix A shows most of the land used by the above Park component facilities; however, the areas reserved for most of these are extremely generous. The actual space used may actually be less than half of the area assigned in Appendix A. There should be around 250 acres available for additional projects and for expansion of existing facilities.

Alternate Locations

While the Peck's Lake area seems optimal for this project, there are several other locations in or adjacent to Clarkdale that could be suitable. The area to the south and west of Yavapai College, part of which is owned by the Yavapai College Foundation, part by Verde Exploration and the US Forest Service might serve well, as might the land currently owned by Verde Exploration to the west of town (southwest of the Phoenix Cement plant). Depending upon several factors, the land currently owned by Clarkdale Metals in the industrial area north of Town Hall may also be suitable.

BENEFITS TO THE TOWN OF CLARKDALE

Depending upon exactly how the ownership of the land and the various components is realized, the Town of Clarkdale stands to gain tremendous benefits from this project. The Town would probably be the owner of the Park, and therefore the landlord. Rents would be charged on the various private enterprises operating in the Park. Franchise fees on electrical generation and sales could bring in additional revenue. Assuming the Town retains ownership and operation of the Plasma Converter, tipping fees and other waste disposal fees would be a revenue source, as would sale of the syngas or hydrogen, nanocarbons, precious metals, and other by-products of plasma conversion. Facility rental fees would provide a small amount of revenue. Sales and use taxes on new commercial businesses associated with the Park would be substantial. In total, estimates are that the Park could net approximately \$500,000-\$1 million per year. Add to this the additional effects of increased employment and synergies created with other industrial and tourist

operations in the Town, such as Clarkdale Metals and the Verde Canyon Railroad, and the benefits to Clarkdale's citizens become huge.

The Clarkdale Sustainability Park will change the way the Town of Clarkdale is financed, where it gets its electricity, how its water and wastewater are supplied and treated, and will help ensure economic and environmental sustainability for our Town. It will, to a great extent, insulate the Town's economy from drastic economic cycles in Arizona, thus allowing a stable, continuous path of economic and cultural growth and prosperity.

CHALLENGES

The challenges to success of the Park concept are significant, but manageable. Perhaps the most basic necessity for success will be gaining and maintaining the political will on the part of the Clarkdale Town Council and the citizens of Clarkdale to see that the project reaches fruition. It was persistent and unanimous agreement on the part of the Council that allowed the Town to purchase the water utility several years ago, and the same commitment will be necessary to complete this project.

Another significant challenge will be acquisition of the land needed for the Park. The Peck's Lake land is currently owned by Freeport McMoRan Copper and Gold, an international mining corporation with headquarters in Phoenix. Freeport acquired this property when they purchased the Phelps Dodge Mining Corporation several years ago. There is a significant possibility that the Town of Clarkdale and Freeport can reach agreement on a sales price for the necessary property that may include zoning changes beneficial to Freeport and other in kind contributions. The remaining costs of the land acquisition may be provided by Industrial Development Bonds, public-private partnerships (PPP), or other traditional financing.

Permitting presents some unique and interesting challenges. These will be handled as all permitting is, with both the permitting agency and the Town recognizing that there will be new considerations and situations that may require creative thought. There will be vast benefits to that creativity.

Changes in the dominant paradigm are always challenging, but will be required for success. Close coordination with waste haulers in the area will be necessary to meet their requirements, and to convert them to using the Plasma Converter facility rather than traditional landfills. The benefits of tipping in Clarkdale, rather than at the Gray Wolf facility near Cherry, should be obvious. There may be a possibility of reclaiming and remediating the Gray Wolf facility and bringing the waste located there to the Clarkdale processing plant, thereby freeing up private land for future development by the owners. Changes in how the residents of the Verde Valley see their place in the environment will be a necessary and natural consequence to the Park.

Transportation into and out of the Park area, especially in the Peck's Lake tract, are problematic. Currently there is only a single entrance and exit from the area, over the 2-lane Tuzigoot Bridge off Broadway. Additional industrial traffic, including municipal

solid waste deliveries and additional commercial traffic may require changes to Clarkdale's circulation plan. It is notable that during the Phelps Dodge tailings remediation, traffic was well managed and had minimal impact on the rest of the Town.

A project of this size and potential impact will have numerous unforeseen roadblocks to success. The Town Council and the Town's management team will need to remain completely committed to the goals of sustainability and economic independence in order to meet and solve each of these new challenges as they arise. Creativity and a willingness to turn apparent problems into opportunities will be essential. With that in mind, it will be absolutely imperative that the Town place the right people in the right positions to guide this process to completion. Staff, Council, and Clarkdale's citizens will be presented with many difficult decisions throughout the creation of the Park, and they must have the enthusiasm and drive to make these decisions in thoughtful and productive ways.

Education of the residents of Clarkdale, the Verde Valley and the political leaders in State and Federal government will be a major component of the project's success. Citizens and leaders must be given all the facts and must fully understand both the challenges and benefits to this Park, as their support and approval will be essential. Each of the components of this Park is relatively new technology, so education about each of these will be an urgent and time-consuming job for our staff and Council. The public and political leaders must be engaged in the process for the project to succeed. The Council will be called upon to work even harder than it did during the acquisition of the Water Utility.

CONCLUSION

The core concept of the Sustainability Park is to produce energy, water and economies with as little environmental impact as is possible today. The Plasma Converter actually cleans up landfills, reduces atmospheric carbon, and eliminates hazardous environmental pollutants. The other facilities in the Park will all be chosen to fulfill sustainability principals. The result will be that a major industrial center in Clarkdale can produce energy, municipal revenue, and local economic development, as well as a world-class nature center, all with a carbon footprint as low as possible. Each facility in the Park should have a relationship, either synergistic, dependent, or as a supplier to one of more of the other facilities in the Park. The Clarkdale Sustainability Park will be a model for municipal operations that will teach sustainability and enhance America's energy and economic independence.

It will be absolutely critical to the success of this project that we keep our minds open to new possibilities to enhance the way Clarkdale, and indeed all American cities and towns operate. The plan outlined above is preliminary and conceptual, and must be expected and allowed to adapt to changing conditions and unforeseen opportunities. This process will be as evolutionary as it is revolutionary. The rewards for hard work and adaptive management of the project cannot be overstated.

Stakeholders

The list of stakeholders below is certainly not complete. Every citizen of Clarkdale, and indeed the Verde Valley, is a stakeholder in this major, cutting edge project.

The Town of Clarkdale
 Freeport McMoRan Copper and Gold
 Yavapai College
 The City of Cottonwood
 Yavapai County
 Waste Haulers in the Verde Valley
 Verde Exploration
 Arizona State Parks
 National Park Service (Tuzigoot NM)
 Verde Valley Medical Center (medical waste)
 Arizona Public Service
 Clarkdale Metals
 Salt River Materials Group
 The Yavapai-Apache Nation
 U.S. Fish and Wildlife Service
 U.S. Bureau of Reclamation
 U.S. Forest Service
 Arizona Dept. of Environmental Quality
 Arizona Game & Fish Department
 Northern Arizona Audubon Society
 Verde Watershed Association
 Adjacent Homeowners
 The Nature Conservancy
 Salt River Project
 Yavapai College Foundation

References/Resources

Plasma Conversion

Westinghouse Plasma Corporation : <http://www.westinghouse-plasma.com/>
 Startech Environmental: <http://www.startech.net/>
 Plasco Energy Group: <http://www.plascoenergygroup.com/>
 St. Lucie County, Florida's Plasma Converter:
<http://www.tcpalm.com/news/2007/nov/10/30trash-zapper-gets-shot-in-arm-from-crist/>
 Scientific American's article on Plasma Conversion:
http://www.scientificamerican.com/article.cfm?id=plasma-turns-garbage-into-gas&ec=su_garbagegas
 Recovered Energy's web site on Plasma Conversion:
<http://www.recoveredenergy.com/index.html>
Plasma Conversion (Cont'd)

Advanced Plasma Power's web site: <http://www.advancedplasmapower.com/>
Biomass Magazine's article on Plasma Conversion:
http://www.biomassmagazine.com/article.jsp?article_id=1294&q=landfill
Wikipedia article on Plasma Arc Waste Disposal:
http://en.wikipedia.org/wiki/Plasma_arc_waste_disposal
Gasification Technology Council web site: <http://www.gasification.org/>

Photovoltaics

Wikipedia's article: <http://en.wikipedia.org/wiki/Photovoltaics>
The National Renewable Energy Laboratory's web site: <http://www.nrel.gov/dv/>

Algal Fuel

Wikipedia's article: http://en.wikipedia.org/wiki/Algae_fuel
The Oilgae site: <http://www.oilgae.com/>
East Valley Tribune article: <http://www.eastvalleytribune.com/story/134878>
Bill Gates invests in Algal Fuel: http://news.cnet.com/8301-11128_3-10043996-54.html

Biodiesel

Verde Biotrailors: <http://www.verdebiotrailers.com/index.html>
Wikipedia's article: <http://en.wikipedia.org/wiki/Biodiesel>
National Biodiesel Board's web site: <http://www.biodiesel.org/>

Important Bird Areas

Audubon IBA web site: <http://www.audubon.org/bird/IBA/>

Sustainability

EPA web site on sustainability: <http://www.epa.gov/Sustainability/>
Wikipedia's article: <http://en.wikipedia.org/wiki/Sustainability>

CONTACTS

For a more detailed discussion of the project, please contact any of the following:

Town Manager, Gayle Mabery :Gayle.Mabery@clarkdale.az.gov, (928) 639-2400

Community Development Director Sherry Bailey: Sherrv.Bailey@clarkdale.az.gov
(928) 639-2500

Mayor Doug Von Gausig: dougvg@commspeed.net (928) 639-2400

Town of Clarkdale, P.O. Box 308, 39 North 9th Street, Clarkdale, AZ 86324 (928) 639-2400

1023



NATIONAL SYSTEM OF PUBLIC LANDS
RESTORATION DESIGN ENERGY PROJECT

The National System of Public Lands Restoration Design Energy Project, funded under the Department of Interior's American Recovery and Reinvestment Act (ARRA) of 2009, will support President Obama and Secretary Salazar's goals to build America's new energy future and to protect and restore treasured landscapes. Implementation of this initiative will result in the identification of disturbed or previously developed sites within the National System of Public Lands in Arizona that, after remediation or site preparation, can be made available for renewable energy development or generation. This will be accomplished through a public process including the completion of an environmental analysis that will evaluate alternative land use allocations and the suitability of sites for the development of renewable energy.

Criteria:

The criteria for submission of potential sites include; parcels of public land that may require remediation or do not have higher resource values and may be suitable for renewable energy development. Following is a list of the types of sites that may be considered for analysis and as potential sites for renewable energy rights-of-way. This is not intended to be an all inclusive list. There may be other type of sites which would be equally important to submit for consideration.

- Hazardous material sites or brownfields
- Abandoned Mine Lands sites
- Former land fill sites
- Inactive or exhausted mineral material sites or gravel pits
- Sites damaged or disturbed to the extent that restoration potential is limited
- Sites with very limited productivity due to a disruption of natural processes (i.e. isolation from hydrological processes).

Evaluation:

In addition to restoration potential, sites will also be evaluated on their technical suitability for alternative energy development (e.g. ability to connect to transmission, relationship to a source of demand, reliance on additional water allocation).

Submit a proposal:

To submit a site to be considered for inclusion in the environmental analysis, please send the attached form by August 14, 2009 to az_arra_rdep@blm.gov or BLM Arizona State Office, One North Central Avenue, Suite 800, Phoenix, AZ 85004-4427, Attention: Restoration Design Energy Project.

For more information, please contact Teri Raml at 602-417-9388 or teri_raml@blm.gov.

6/30/2009



**NATIONAL SYSTEM OF PUBLIC LANDS
RESTORATION DESIGN ENERGY PROJECT
BLM AZ SITE SUBMITTAL FORM**

Criteria: Parcels of public land that may require remediation or do not have higher resource values and may be suitable for renewable energy development. Examples include; hazardous material sites or brownfields, Abandoned Mine Lands sites, former land fill sites, inactive or exhausted mineral material sites or gravel pits, sites damaged or disturbed to the extent that restoration potential is limited, or sites with very limited productivity due to a disruption of natural processes (i.e. isolation from hydrological processes).

Submit a proposal: To submit a site to be considered for inclusion in the environmental analysis, please complete and send this form to az_arra_rdep@blm.gov or BLM Arizona State Office, One North Central Avenue, Suite 800, Phoenix, AZ 85004-4427, Attention: Restoration Design Energy Project.

Please submit proposal by August 14, 2009.

Name of Site:

Red Gap Ranch

Legal Description:

See attached map, too much to list in the space allowed.

Political Boundaries (Congressional District, County, Municipality):

Coconino County

Estimate of acreage available for development:

8500

Brief Description of Disturbance or Previous Development:

Red Gap Ranch is owned by the City of Flagstaff. The City purchased this property because of the abundance of water on the property. The property is located in Coconino County and ownership is "checkered." (please see attached map.) A preliminary study has been completed at this site to determine how much energy and renewable energy infrastructure would be need to power the future water infrastructure. If there is sufficient solar or wind to power well pumps and lift stations, the regional water supply system would be self-sustaining. It will take approximately 11M KW to power the facility. The City has even higher hopes for this land to potentially generate power for surrounding communities with APS permission and support.

The property is currently underutilized. Future development will be limited due to the water-related infrastructure underground. There is much support for renewables at this site.

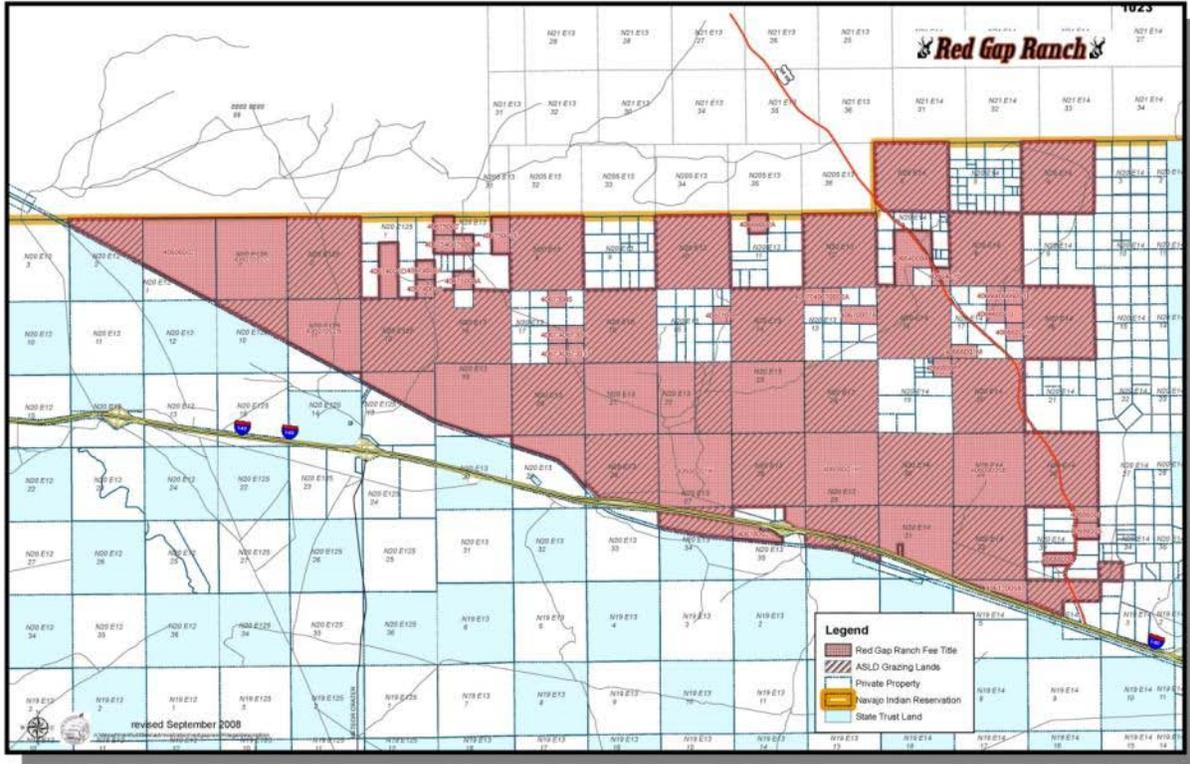
Timeline for this project is 8-10 years.

Point of Contact (include phone number and e-mail address):

April Laliberte, alaliberte@flagstaffaz.gov, 928-699-8708

For more information, please contact Teri Raml at 602-417-9388 or teri_raml@blm.gov.

6/30/2009



Candace Owens - RECORDER
OFFICIAL RECORDS OF COCONINO COUNTY
FIRST AMERICAN TITLE INS CO D 20.00

1023
3361109
12/21/2005 03:20P



3361109
Page: 1 of 11
D

NCS-198018
When recorded return to:
City of Flagstaff
211 West Aspen
Flagstaff, Arizona 86001
Attention: City Clerk

SPECIAL WARRANTY DEED
[Exempt from Affidavit of Value Pursuant to A.R.S. 11-1134(A)(3)]

Red Gap Ranch, LLC, an Arizona limited liability company ("Grantor"), for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, hereby grants and conveys to the City of Flagstaff, an Arizona municipal corporation, its successors and assigns ("Grantee"), that certain real property located in the County of Coconino, State of Arizona, and more particularly described on Exhibit "A" attached hereto and by this reference made a part hereof, together with all waters and water rights, wells, improvements thereon and appurtenances and fixtures thereto.

Subject to all current taxes and assessments, reservations in patents, easements, rights-of-way, streets, covenants, conditions, restrictions, declarations, obligations and liabilities of record and matters that may be disclosed by an accurate survey, Grantor hereby warrants title to the Property as against all acts of Grantor and no other.

IN WITNESS WHEREOF, Grantor has executed this instrument this 19th day of December, 2005.

Red Gap Ranch, LLC,
an Arizona limited liability company

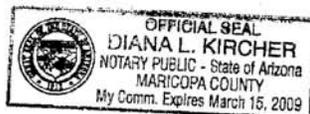
By: [Signature]
David A. Leyvas
Its Manager

STATE of Arizona)
County of Maricopa) ss.

The foregoing instrument was acknowledged before me this 19th day of December, 2005, by David A. Leyvas, the Manager of Red Gap Ranch, LLC, an Arizona limited liability company, on behalf of such company.

[Signature]
Diana L. Kircher
Notary Public

My Commission Expires:



1024

Written Comment Sheet

Public Scoping Meeting for the Bureau of Land Management Restoration Design Energy Project

Thank you for your input!

Please hand this form in or mail before **MARCH 11, 2010** to:

Restoration Design Energy Project
ATTN: Teri Raml, Project Manager
BLM Arizona State Office
One North Central Avenue, Suite 800
Phoenix, AZ 85004
E-mail: az_arra_rdep@blm.gov

For More Information, Contact:
Restoration Design Energy Project
Teri Raml, Project Manager
(602) 417-9388

NAME:	Nick Schmidt
ORGANIZATION:	
ADDRESS:	540 El Dorado St
CITY/STATE/ZIP:	Kingman, AZ 86401

Please note that all submissions will be made available for public inspection in their entirety. Your name and address will become part of the public record. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law.

PLEASE PRINT _____ **DATE:** 1 March 2010

Mylady,

BLM land was set aside from any kind of commercial use, if I'm not wrong. "To sustain the health and productivity of the public lands for the use and enjoyment of present and future generations" interferes with leases to ranchers and commercial interests like power companies.

Remediation, restoration, sanitation should be paid by those who caused the maltreatment of nature. Landfill (Orwell speak) = garbage dump site ? Must be inspected over decades for poison leakage. Open pit mines are "re-naturalized" to recreational lakes, elsewhere.

How does BLM land compete with ranchland for "green" power plant sites ? Why should BLM land be offered for cheaper terms than private land ? Why should global players like GE enjoy tax incentives like GE enjoys in southern Spain ? How could solar power be regulated so that most of the profit stays right where it's produced, and then taxed to the benefit of the sunny states ?

With thermal solar, groundwater consumption seems unavoidable.

To be replenished in AZ after 30.000 years ?

Elsewhere, PV power is promoted within the low voltage grid, to be consumed nearby.

Comments can also be sent to: az_arra_rdep@blm.gov

For more information visit: <http://www.blm.gov/az/st/en.html>

- 2 -

The incentive to start installation and production of PV solar was layed out without burdening the taxpayer by tax credits. (Diminishes the tax collected).

The power companies were legally bound to pay 48 cts /KW/h for excess power not consumed by PV producers, be it pig farmers with a huge roof over the stable, or in-town-companies with a flat roof over commercial buildings or PV on the roof of City Hall.

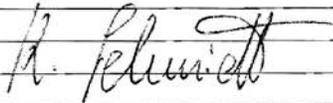
The per kilowatthour guaranteed price is lowered over a period of years.

For power companies, the burden is spread over all customers. It raises the price for power only by a frañction. Not more than 1.5 to 2% is PV power.

Under this scheme, the poor investor gets the same return as the wealthy one - inside the low voltage grid. The current meter runs backward. The economical and political power of the quasi monopolies is reduced.

The problem of storage during sunshine hours for dark/night time consumption still is a challenge.

Sincerely,



1025

Solar_Bob Hall
<solar_bob@msn.com>

03/08/2010 07:37
PM

To
Teri Raml <azarra_rdep@blm.gov>
cc
Subject
Comments on Restoration Design
Energy Project

Teri,

The attached document contains my comments relating to the Public Scoping Meeting for the BLM Restoration Design Project session that was held at the Hotel Arizona in Tucson on Tuesday afternoon, February 9, 2010.

Respectfully Submitted,

Robert B. Hall

4809 Pier Mountain Place
Marana, AZ 85658(See attached file: 100209_BLM Written Comment.doc)

Written Comment – March 8, 2010

RE: Public Scoping for Bureau of Land Management Restoration Design Energy Project

First, accolades to the BLM for their creativity in identifying an opportunity to combine the need to remediate certain of their lands with the nation's goal to make renewable energies an integral part of the nation's energy future.

Arizona's renewable resources include opportunities to capture the energy content from the sun, wind, geothermal and biomass. Of these four sources, energy from the sun is by far the most abundant opportunity.

As a point of interest and calibration, if the area of all the lands (27,600 acres) presently designated in the Restoration Design Energy Project in Arizona were employed to make electricity using solar power, 552 billion kilowatt-hours per year would be generated. This is about 8% of the annual electricity consumption in Arizona.

There are two "products" that utilization of the energy from the sun can provide: heat and electricity. The heat can be used to create hot water for domestic use, or for space heating. Generally, speaking this is always cost-effective.

There are two routes to convert solar energy into electricity. First, by using a method to concentrate sunlight (mirrors or lenses), it is possible to focus the energy from the sun to heat a fluid to temperatures that are elevated enough to drive conventional steam turbines and generate electricity. This route is referred to as Concentrated Solar Power [CSP]. The other route uses the photovoltaic effect to directly convert the energy from the sun into electricity. This route is referred to as Photovoltaics [PV].

Concentrated Solar Power [CSP]

CSP has been establishing its place in the mix of renewable energy-driven production of electricity. A potential advantage is that it allows for the storage of the solar heated fluid to be used to later produce electricity "on demand". In principle this stored thermal energy can be used to generate electricity for up to four hours after sundown; in practice this capability is still in the process of being demonstrated, and will add to the overall initial system cost. Given the magnitude of the equipment required to cost-effectively run a CSP facility, system sizes of 1000 kW [same as 1 MW] (see, for example, the 1 MW demonstration Saguaro Power Plant in Red Rock, AZ) or more (most projects now on-board are 150 MW or more) are required. These plants require water to operate (typically 0.5 gallon per kilowatt-hour produced). To the extent that water is not a plentiful renewable resource in Arizona, this must be factored in any plans for these systems.

There is one exception to the above discussion of CSP; that is by using concentrated sunlight in combination with a Stirling Engine, it is possible to significantly reduce the water requirement, and cost effective system sizes are on the order of 25 kW. Given the size of this building block (25-kW) it is possible to modularly build up an array system to be whatever size is desired (to fit demand and/or available space). It is not clear that these Stirling Engine systems can have the capability to store heat for subsequent electricity production.

Photovoltaics [PV]

PV has established its place in the mix of renewable energy-driven production of electricity. It has the advantages of extensive field experience, no water requirements and its modularity means that it can be employed in systems and arrays of any size (100 watts up to 50,000,000 watts [50-MW] and beyond) thus being capable of meeting a broad range of specific project demands. At this point in time there are no cost effective means to store the solar-PV generated electricity.

The table below summarizes the significant attributes of the various methods for generating electricity using the energy from the sun.

Comparison of Attributes for Methods of Generating Electricity from Sunlight					
Method	Minimum System Size	Modular Capable	Water Usage	Storage Capability	Field Experience
CSP	100 MW	no	0.5 gal/kWh	maybe	25 years
Sterling Engine	0.025 MW	yes	very little	no	very little
PV	0.0001 MW	yes	none	no	35 years

Levelized Cost of Electricity Produced.

The levelized cost of the electricity (over the life of the system) can be estimated from the following components

1. Initial capital costs of system
2. Cost of money
3. Cost of Site to locate system
4. Maintenance of system.

To simplify the estimate it can be assumed that the cost of money (#2) will likely be the same for each of the methods. Further, since each method operates with approximately the same conversion efficiency (solar energy to electricity) the land area required for each method of equivalent system size [in kW] will presumably have the same site cost (#3). Regarding maintenance costs (#4), it is anticipated that these will be lower for PV (no water, no moving parts...it is an electronic device) than CSP (moving water and heat transfer fluids, maintaining moving parts associated with the need to track the sun's location in the sky, etc). It is likely that the maintenance cost for running the Sterling Engine system will be between those for PV and CSP.

The effect of the initial capital system cost (#4) of each method on the levelized cost of electricity is determined by the following three factors:

- [S] Initial installed system cost (installed system is "priced" on a \$ per kilowatt basis).
- [P] Annual Production of Energy per Nameplate Power of the installed system (measured in kilowatt-hours per kilowatt per year).
- [T] Expected life of the system (measured in years).

The initial capital cost component of the levelized cost of electricity over the lifetime of the system is: [S] divided by the product of [P] times [T]. For example, for a 25 kilowatt PV system the installed cost per kilowatt is \$5500/kW. The system is expected to produce 1800 kilowatt-hours per kW per year, and to conservatively last for 25 years; thus $5500 / (1800 * 25)$ equals 0.122 \$/kilowatt-hour. It is important to appreciate the fact that to get to the capital cost component of the levelized cost of electricity produced over the lifetime of the system one must be sure to assess all three factors (initial system cost, output per year and expected lifetime of system). Thus, for example, it would *not* be advisable to buy the above system if the quote for the initial system was for \$4000 per kilowatt installed (i.e. a \$1500/kW "savings") if the system was expected to last for only 10 years (i.e. the levelized cost of electricity over the ten-year system lifetime would be \$0.222/kilowatt-hour).

Respectfully Submitted,

Robert B. Hall
 4809 Pier Mountain Place
 Marana, AZ 85658

1026

Name of Site: Private property

Legal Description: NW4 SEC 16 24 22

Political Boundaries (Congressional District, County, Municipality): Cochise County

Estimate of acreage available for development: 160 acres

Brief Description of Disturbance or Previous Development: Previously overgrazed grasslands. Environmentally sensitive area boarding BLM land along the San Pedro River. Desire to preserve this area from housing development or farming in order to not increase the water draw from the river.

Point of Contact:
Kathleen Jones
6687 E Montezuma Canyon Rd.
Hereford, AZ 85615

520-266-3698 cell
520-366-5230 home
kjones@cqch.org



United States Department of the Interior
U.S. Fish and Wildlife Service
Arizona Ecological Services Field Office
2321 West Royal Palm Road, Suite 103
Phoenix, Arizona 85021-4951
Telephone: (602) 242-0210 Fax: (602) 242-2513



In Reply Refer to:

AESO/SE
22410-2010-TA-0278

March 10, 2010

Memorandum

To: Project Coordinator, Restoration Design Energy Project, Arizona State Office, Bureau of Land Management, Phoenix, Arizona

From: Field Supervisor, Arizona Ecological Services Office

Subject: Comments Regarding the Proposed Restoration Energy Design Project

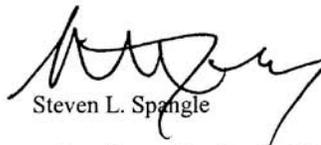
Thank you for the opportunity to review and provide comments on the Restoration Energy Design Project. Our comments are based on information gathered at your February 23, 2010, public scoping meeting in Flagstaff, Arizona. The Restoration Energy Design Project is funded under the American Recovery and Reinvestment Act of 2009. The purpose of this project is to foster environmentally responsible development of renewable energy on sites that have been previously disturbed or developed and need remediation or restoration. Placing renewable energy projects in previously disturbed areas would minimize the effects to wildlife, plants, and undisturbed habitats. The following comments are in reference to the projects located in northern Arizona on the Arizona Strip and Lake Havasu Districts.

There are four projects in northern Arizona that are near known locations or habitat for two federally-listed plants and one candidate species. The proposed sites at the Fredonia Landfill and Off-Highway Vehicle Area and the White Sage Gravel Pit are near known locations of the threatened Siler pincushion cactus (*Pediocactus sileri*). The Siler pincushion cactus is known only from gypsiferous clay and sandy soils of the Schnabkaib and Middle Red members of the Moenkopi formation. The Mokaac Gravel Pit site is in close proximity to the endangered Holmgren milk-vetch (*Astragalus holmgreniorum*) and its critical habitat. Holmgren milk-vetch is known from limestone soils in Virgin Limestone Member of the Moenkopi Formation. The Snowflake Mine site is in close proximity to the candidate species Gierisch mallow (*Sphaeralcea gierischii*). Gierisch mallow is known from gypsum outcrops in the Harrisburg Member of the Kaibab Formation. We recommend you survey these soil types adjacent to these four proposed restoration sites to determine the status of listed or candidate plants in these vicinities. Depending on the results of these surveys, measures to minimize effects to these species and their habitat from project development and operation may be warranted.

In addition to the four sites described above, the proposed Silver Creek Landfill Site near Bullhead City, Arizona is located on the west side of the Black Mountains. Desert tortoises (*Gopherus agassizii*) occur in this area and are currently considered to be part of the Sonoran

Desert population. However, according to McCluckie *et al.* (1999), these tortoises have the Mojave population phenotype and habitat usage characteristics, further emphasizing their uniqueness in Arizona. We are currently reviewing the status of the Sonoran Desert population, including the Black Mountains sub-population. Regardless of the outcome of this review, we recommend incorporating measures to minimize the impact of any development on desert tortoise.

We appreciate your coordination with us on this matter. We also encourage you to coordinate the review of this project with the Arizona Game and Fish Department. Should you require further assistance or if you have any questions, please contact Brian J. Wooldridge at (928) 226-0614 (x105) or Brenda Smith (x101) of our Flagstaff Suboffice.



Steven L. Spangle

cc: Laila Lienesch, Renewable Energy Coordinator, Region 2, Albuquerque, NM
Assistant Field Supervisor, Fish and Wildlife Service, Tucson, AZ
Assistant Field Supervisor, Fish and Wildlife Service, Phoenix, AZ
Regional Supervisor, Arizona Game and Fish Department, Flagstaff, AZ
Regional Supervisor, Arizona Game and Fish Department, Kingman, AZ
Chief, Habitat Branch, Arizona Game and Fish Department, Phoenix, AZ

W:\Brenda Smith\Restoration Energy EIS Scoping Comments 03032010.docx:egg

Literature Cited

McCluckie, A.M., T. Lamb, C.R. Schwalbe, and R.D. McCord. 1999. Genetic and morphometric assessment of an unusual tortoise (*Gopherus agassizii*) population in the Black Mountains of Arizona. *Journal of Herpetology* 33(1) 36-44.

1028

Written Comment Sheet

Public Scoping Meeting for the Bureau of Land Management Restoration Design Energy Project

Thank you for your input!

Please hand this form in or mail before **MARCH 11, 2010** to:

Restoration Design Energy Project
ATTN: Teri Raml, Project Manager
BLM Arizona State Office
One North Central Avenue, Suite 800
Phoenix, AZ 85004
E-mail: az_arra_rdep@blm.gov

For More Information, Contact:
Restoration Design Energy Project
Teri Raml, Project Manager
(602) 417-9388

NAME: JOHN RUGER
ORGANIZATION:
ADDRESS: 3711 WESTERN AVE.
CITY/STATE/ZIP: KINGMAN, AZ 86409-3077

Please note that all submissions will be made available for public inspection in their entirety. Your name and address will become part of the public record. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law.

PLEASE PRINT

DATE: 3/01/10

USING DEGRADED LAND FOR ENERGY SITES IS A GOOD IDEA, BUT AS GOOD AS IT IS CARE MUST BE TAKEN TO DO IT RIGHT (NOT JUST DO IT).

CONCERN: WILDERNESS AREAS AND WILDLIFE, ESPECIALLY BIRDS AND BATS (ROTATING BLADES).

CONCERN: IF THE LAND CAN BE RESTORED AND LEASED FOR GRAZING RIGHTS, THEN IT SHOULD BE.

CONCERN: ENERGY PLANT CONSTRUCTION MAY LEAD TO OVERDEVELOPMENT OF BLM LAND.

CONCERN: AMERICAN TAXPAYERS GETTING RAW DEAL WHILE FOREIGN INVESTORS STUFF THEIR POCKETS.

COMMENT: 50% OF THE GENERATED POWER MUST REMAIN IN THE STATE WHERE THE POWER IS GENERATED.

(OVER)

Comments can also be sent to: az_arra_rdep@blm.gov

For more information visit: <http://www.blm.gov/az/st/en.html>

COMMENT: LEAVE THE ARIZONA STRIP ALONE SO AS TO BE A UNIQUE WILDERNESS AND RECREATION AREA.

QUESTION: ARE THE ONLY PROPERTIES BEING CONSIDERED THOSE ON BLM LAND?

CONCERN: IN THE EVENT THAT TECHNOLOGY PROVIDES A BETTER SOURCE OF POWER, THE FINANCIAL BURDEN TO REMOVE THE OLD TECHNOLOGY MUST NOT BE THE TAXPAYER.

SUMMARY: SOLAR TECHNOLOGY MUST NOT DO ANY HARM TO THE LAND, THE WILDLIFE, OR ANY RESIDENT.



Southwest Office
110 South Church, Suite 4292 | Tucson, AZ 85701 | tel 520.623.9633 | fax 520.623.0447
www.defenders.org

March 11, 2010

Restoration Design Energy Project
Attention: Lane Cowger
BLM-Arizona State Office
One North Central Avenue, Suite 800
Phoenix, Arizona 85004-4427
via email at arra_rdep@blm.gov

Re: Scoping comments on Restoration Design Energy Project, 75 Fed. Reg. 1807
(Jan. 12, 2010)

Dear Mr. Cowger:

Thank you for the opportunity to comment on the Restoration Design Energy Project (“RDEP”). The comments are submitted on behalf of Defenders of Wildlife (“Defenders”) and our more than 1 million members and supporters in the U.S., 20,655 of whom are in Arizona.

Defenders is dedicated to protecting all wild animals and plants in their natural communities. To this end, Defenders employs science, public education and participation, media, legislative advocacy, litigation, and proactive on-the-ground solutions in order to impede the accelerating rate of extinction of species, associated loss of biological diversity, and habitat alteration and destruction.

We believe this project makes important conceptual advancements that have the potential to foster responsible renewable energy development in Arizona and can serve as an important model for the rest of the nation. Defenders supports responsible renewable energy development that avoids deleterious impacts to sensitive wildlife habitats and that minimizes the use of scarce resources such as water. We appreciate the opportunity to provide input on this promising project and we would be happy to provide any needed clarification and discuss our recommendations in detail at your convenience.

Introduction:

It is clear our nation is making important strides to solving the carbon and greenhouse gas emissions challenge. As we transition toward a clean energy future, it is imperative for our future and the future of our wild places and wildlife that we strike a balance between addressing the near-term impact of large scale renewable energy development with the long-term impacts of climate change on our biological diversity, fish and wildlife habitat, and natural landscapes. To ensure that the proper balance is achieved, we need smart planning for renewable power that

avoids and minimizes adverse impacts on wildlife and wild lands. These projects should be placed in the least harmful locations, near existing transmission lines and on already disturbed lands – including private, municipal or county-owned lands. Examples of degraded lands that should be considered for renewable energy “redevelopment” include but are not limited to: inactive landfills, abandoned agricultural fields, abandoned mine sites, brownfields, quarries, borrow pits, large parking lots and other sites along transportation corridors and canals with established rights of way.

While developing new renewable energy sources is critical in order to meet the challenges posed by climate change, if not done right, such industrial-scale development has the potential to destroy important wildlife habitat and unsustainably utilize regionally scarce resources such as water. As Secretary Salazar stated recently, the Department of Interior’s renewable energy goals “will be accomplished in a manner that does not ignore, but protects our signature landscapes, natural resources, wildlife, and cultural resources.” The Arizona RDEP, by identifying and analyzing projects that will restore and/or redevelop previously impacted areas, is taking an important stride towards accomplishing the Department’s goals of both developing renewable energy and acting as a steward of our natural landscapes.

On June 16, 2009, Defenders of Wildlife and our conservation partners released a document entitled, *Key Principles: Balancing Renewable Energy Development and Land Conservation in a Warming World*. One key principle calls for the development of disturbed lands:

Land that has already been disturbed should be preferred for development. Whether in private or public ownership, land that has been developed for industrial, agricultural or other intensive human uses is generally superior to “Greenfield” sites in terms of reduction of environmental degradation. Redevelopment of disturbed sites offers opportunities to improve lands that may not otherwise be reclaimed, but it is imperative to consider and address the effects of renewable energy development, both positive and negative, on minority and low income populations.

As such, we are excited that the Arizona Bureau of Land Management (“BLM”) is taking a leadership role to initiate a formal statewide analysis of areas managed by the BLM that may be suitable for the development of renewable energy.

Recommendations:

We are supportive of BLM’s approach to this planning process and believe the BLM has properly identified the relevant issues to be considered in the environmental analysis:

- 1) Site or area suitability for renewable energy generation and scale of possible generation;
- 2) Site or area proximity to the existing electrical transmission grid and the feasibility of integrating new electric generation projects with the grid;
- 3) Site or area proximity to population and electric use (load) centers;
- 4) Determining the appropriate renewable energy generation technologies for implementation on a site-by-site and/or area-by-area basis; and

5) The possible need for environmental remediation of project sites or areas based on previous uses and levels of disturbance and possible contamination of the sites or areas, as well as how addressing the possible need for remediation may be incorporated into the design criteria that may be applicable to projects proposed for a particular site or area.

We support consideration of these issues. In addition, we recommend the BLM specifically consider wildlife habitat values, water resources, cultural resources, economic impacts and scenic value as additional criteria to be analyzed in the Environmental Impact Statement (“EIS”). It is also important the draft EIS consider the context of the site and needed transmission corridors through adjacent areas with important ecological and cultural value. We suggest the BLM develop a range of alternatives so that the agency has the tools to consider a variety of site-specific proposals on individual sites once the EIS is complete. Such analysis will offer the most opportunity for effective tiering to the EIS and hopefully will allow successful development of a large number of renewable energy projects on disturbed sites.

Site Selection and Evaluation:

Prioritizing renewable energy development on disturbed lands helps keep our wild lands healthy, as it will relieve the pressure for intensive renewable energy development on public lands. Not only does siting clean energy on previously disturbed or contaminated sites protect lands with other rich resources and values from unnecessary development, but it can also improve community well being by cleaning up contamination, blight, relieving local tax burdens, and bringing economic opportunities to the places that need them most. In addition, disturbed sites such as abandoned mines, landfills, and agricultural fields are often near existing infrastructure required for utility scale energy generation. RDEP is an excellent compliment to concurrent efforts, including the BLM’s programmatic impact statement on solar Energy and Solar Energy Studies Areas and the Environmental Protection Agency (EPA)/ National Renewable Energy Laboratory (NREL) brownfield renewable energy development project.

An important first step in the evaluation of potential redevelopment sites is to identify the available and limiting resources (e.g. solar receipt, wind, land base, water) available. We recommend the BLM develop a set of criteria for each of the five preliminary issues identified. This should allow for a uniform approach in evaluating the potential of each site and in providing a summary assessment of the overall potential benefit and value of the RDEP. These criteria should be specific to particular renewable energy resources, technologies, and scale of generation. Each site should be evaluated for its suitability for all types of renewable energy resources, including solar, wind, and geothermal. Below are categories upon which sites and projects should be evaluated and questions the BLM should address in the environmental analysis.

1. Renewable Energy Potential: The BLM should make available the amount of renewable energy potential a proposed site holds. The National Renewable Energy Lab has conducted analyses nationwide to identify appropriate areas for solar and wind development that include factors such as solar receipt, wind speeds and slope. We encourage the BLM to review these studies in an effort to inform the site evaluation and selection process.

2. Water: Sites with limited water resources, or where water sustainability is in question, should rank low in terms of their appropriateness for water intensive renewable energy generation such as solar thermal. For example, a wet-cooled concentrating solar thermal plant utilizes 4.8-7.8 square miles of land (500-1,000 MW) and consumes approximately 740 gallons per kilowatt-hour, whereas dry cooled concentrated solar thermal consumes approximately 10 gallons per kilowatt-hour. In addition, does the project need to import water from elsewhere or mine ground water? If so, how much and for how long? In addition, the BLM should consider whether the project site or design is able to mitigate its own water needs. In other words, does it plan to harvest water that falls on site? Rainwater collected from panels, surrounding buildings, parking lots and landscape could be captured and utilized to offset site water needs and/or directed into the landscape in a way that supports native flora and fauna.

3. Wildlife: Some lands, even though degraded, can facilitate important dispersal movements for wide ranging species. As a result, the BLM must consider whether a degraded site serves as wildlife habitat or a corridor. For example, are sites appropriate for wind development located in flyways or foraging areas of migratory birds or special status bat species? The BLM should also consider how the mining or transporting of water for renewable energy development might affect stream, river and spring habitats in the short and long-term. In addition, what innovations does the proposed development make to eliminate or alleviate stressors on native flora and fauna? Lastly, what is the landscape-level context of the site in terms of wildlife habitat and habitat connectivity?

4. Cultural and Scenic Values: The BLM should address what archeological and/or historic resources might be impacted by redevelopment, in addition to how scenic values (including from adjacent public lands or protected areas) will be affected.

5. Existing Infrastructure & Feasibility: For each proposed project the BLM should indicate whether the sites already support project needs, including existing transmission lines, access roads, and plumbing, or whether new infrastructure needs to be created or upgraded. Inherently, the creation of new infrastructure tends to increase economic costs, size of carbon “construction” footprint and often brings potential ecological costs such as habitat loss and fragmentation. The need for additional infrastructure and the level of additional land disturbance and resource use required for that infrastructure should be considered in the analysis. Furthermore, BLM should address whether the requisite rights of way for transmission corridors are valid and if they are sufficiently wide for needed upgrades. Part of the analysis should include the costs and feasibility of such upgrades and rights of way.

We would also like the BLM to address how the location of a nominated site under analysis coincides with WestConnect’s Southwest Area Transmission (“SWAT”) Renewable Energy Transmission Task Force assessment of the physical and economic viability of future transmission lines that could theoretically service the anticipated wave of new renewable energy

production in Arizona.¹ Because the availability of sufficient and available transmission capacity will dictate the viability of a site for investments in renewable energy projects, transmission is a central criterion that must be informed by the publicly available research and plans of electric utilities, co-ops and merchant transmission line operators. We also encourage the BLM to look at the proximity of the generating facility to load centers, and how much energy will be lost between energy generation sites and consumption.

6. Restoration/Remediation: For each proposed site, the BLM should address whether reclamation, restoration or remediation be required prior to site redevelopment. Included in the analysis should be the cost to implement the restorative component of the project; the short and long term benefits or drawbacks in terms of pollution clean-up, ground water contamination, human health and safety, carbon sequestration, economic benefit, and surrounding land values; and whether or not additional disturbance to the site could potentially cause pollution to spread to the surrounding environment (e.g. via air / dust or into the aquifer). Furthermore, if reclamation and remediation are not needed, what opportunities for restoration for the site are feasible?

7. Site Design: A thorough analysis should include what onsite or nearby ecological and cultural values and features (e.g. wildlife, migratory routes, stream beds, cultural resources, and scenic vistas) could be impacted by the project and whether the design is compatible with the maintenance of these resources. While the site itself may be degraded, offsite resources may be impacted by new transmission lines the renewable energy production would require. What are the potential offsite impacts? In addition to transmission infrastructure, what new or upgraded transportation infrastructure will be required, and what would impacts of new infrastructure have upon the site and adjacent lands?

8. Site Configuration: The size and configuration of individual sites identified may make renewable energy development impractical. However, in combination with adjacent parcels appropriate for renewable energy development, these sites may become viable. The BLM should consider the potential viability of such appropriate adjacent sites, especially those which are also already disturbed, whether through joint ventures or participatory agreements involving neighboring land owners.

Informing National Policy:

The stated goal of the RDEP is to foster environmentally responsible production of renewable energy on already disturbed lands is laudable. As an organization, we share this goal as one key approach for meeting the increasing demands for generating new and clean sources of energy and creating “green collar” jobs.

¹ See WestConnect Southwest Energy Transmission, available at http://www.westconnect.com/planning_swat.php; 2009 Arizona Renewables Energy Map, available at http://www.westconnect.com/filestorage/Visio-State_EHV_Renewables4.pdf

The BLM is currently engaged with numerous planning processes and permit applications for renewable energy development projects west-wide. Among these is the BLM Programmatic EIS for Solar Energy Study Areas (SESA) currently under development. We encourage the Arizona state and national level BLM to consider how the RDEP approach can inform policies and processes such as the SESA. We also encourage the BLM to analyze whether there are potential impacted and degraded sites within or adjacent to the SESAs that should be given special consideration and analysis. Depending on how much energy the RDEP sites will be able to produce, the BLM should consider how much undisturbed public lands can be removed from development consideration. Perhaps most importantly, the BLM should seriously consider exporting the RDEP concept to all western states.

Please keep us apprised of any future developments regarding this project.

Sincerely,



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Defenders of Wildlife



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