

# Appendix A

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## Proposed Avoidance, Minimization, and Mitigation Measures

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## APPENDIX A – PROPOSED AVOIDANCE, MINIMIZATION AND MITIGATION MEASURES

### A.1 Air Quality

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
AQ-1	Solar Millennium and/or the construction contractor will prepare an Air Quality Construction Mitigation Plan, for BLM's approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with air quality mitigation measures. Project activities would be in compliance with applicable federal, state, and local laws and regulations concerning prevention and control of air pollution during construction and operation.	X	X
AQ-2	<p>Project personnel would be required to implement measures to minimize fugitive dust emissions from construction activities. To accomplish this, the following measures would be implemented.</p> <ul style="list-style-type: none"> <li>• All unpaved roads and disturbed areas in the Project footprint and linear construction sites will be watered as frequently as necessary to comply with the dust mitigation objectives. The frequency of watering can be reduced or eliminated during periods of precipitation.</li> <li>• No vehicle will exceed the approved speed limit within the construction site.</li> <li>• Visible speed limit signs will be posted at the construction site entrances.</li> <li>• All unpaved exits from the construction site will have gravel or an approved treatment to prevent trackout to public roadways.</li> <li>• All construction vehicles will enter the construction site through the approved treated entrance roadways, unless an alternative route has been submitted to and approved by the BLM.</li> <li>• Construction areas adjacent to any paved roadway will be provided with sandbags or other measures as specified in the Construction Storm Water Pollution Prevention Plan to prevent run-off to roadways.</li> <li>• All paved roads within the construction site will be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.</li> <li>• All soil storage piles and disturbed areas that remain inactive for longer than 10 days will be covered or will be treated with an approved dust suppressant compound.</li> </ul>	X	

Appendix A – Proposed Avoidance, Minimization and Mitigation Measures

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
	<ul style="list-style-type: none"> <li>All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions will be provided with a cover or the materials will be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.</li> <li>Wind erosion control techniques (such as windbreaks, water, approved chemical dust suppressants, and/or vegetation) will be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition will remain in place until the soil is stabilized or permanently covered with vegetation.</li> </ul>		
AQ-3	The project owner will use gasoline powered light trucks for facility maintenance, except for mirror washing, welding rigs, or other specific activities which requires a larger vehicle.		X
AQ-4	<p>The project owner will provide a site operations dust control plan that:</p> <ul style="list-style-type: none"> <li>Describes the wind erosion control techniques such as windbreaks, water, and approved chemical dust suppressants that will be used on areas that could be disturbed by vehicles or wind; and</li> <li>Identifies the location of signs throughout the facility that will limit traveling on unpaved portion of roadways to solar equipment maintenance vehicles only.</li> </ul>		X

## A.2 Geological Hazards and Mineral Resources

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
GEO-1	National Electrical Safety Code - Will provide guidance for mitigation of geological hazards by increasing the project's ability to withstand geological hazards such as earthquakes.	X	

## A.3 Soils

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
SOIL-1	Onsite drainage system - The project will construct diversion channels, berms, and a drainage channel system to prevent onsite and offsite, downstream damage from water erosion. A site-specific, stormwater drainage plan will be prepared and adhered to during project construction and operation. The Plan of Development describes lined-drainage channels that	X	X

Appendix A – Proposed Avoidance, Minimization and Mitigation Measures

Reference Number	Mitigation Measures	Mitigation Application Process	
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	will be installed within the solar fields. Areas between channels will be sloped toward the channels. Lined channels will reduce the potential for water erosion of natural soils that will remain within the solar fields.		
SOIL-2	Sediment Barriers - Man made sediment barriers such as hay bales or sand bags will be used to reduce soil/sediment loss from within the Project area.	X	
SOIL-3	Dust Reduction - Dust-control measures would be put in place to reduce the hazard of wind-blown dust within the Project Area. Active construction areas will be watered as an effective measure to reduce the escape of wind-blown dust from the site.	X	
SOIL-4	Coverage of Soil Stockpiles - Soil stockpiles that have been removed from the construction area will be covered to reduce runoff caused by precipitation and fugitive wind-blown dust.	X	

#### A.4 Water Resources

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
WTR-1	Prior to beginning any clearing, grading or excavation activities associated with construction of the project, the project owner will develop and implement an approved construction-phase SWPPP as required under the General Storm Water Construction Activity Permit, as well as implement any other project-specific mitigation measures required by other agencies (e.g. NDEP, Nye County, USACE).	X	
WTR-2	The project owner will obtain and comply with permits for construction of project specific water pipelines or septic system prior to construction of the plant.	X	
WTR-3	The project owner will apply for the appropriate water right permits for a change in place of use, manner of use and point of diversion (for water purchase option), as required, with the Nevada Division of Water Resources.	X	
WTR-4	Prior to commercial operation, the project owner, as required under the General Industrial Activity Storm Water Permit, will develop and implement an operations phase SWPPP.		X
WTR-5	The project owner will submit required monitoring or compliance reports to appropriate agencies as required.		X

### A.5 Noise

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
NOISE-1	Personnel would be required to comply with applicable federal, state, and local laws and regulations concerning prevention and control of noise during project construction.	X	
NOISE-2	Equipment and trucks used for project construction would utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).	X	
NOISE-3	Stationary noise sources would be located as far from adjacent receptors as possible and would be muffled and enclosed within temporary sheds, incorporate insulation barriers or other measures to the extent feasible.	X	X

### A.6 Biological Resources

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
<b>Vegetation</b>			
VEG-1	All construction vehicle movement outside the ROW would be restricted to pre-designated access, contractor access, or public roads.	X	X
VEG-2	The aerial limits of construction activities would be pre-determined, with activity restricted to and confined within those limits.	X	
VEG-3	Prior to construction, all supervisory construction personnel would be instructed on the protection of vegetation, including (1) federal and state laws regarding plants, including collection and removal; (2) the importance of this resource and the purpose and necessity of protecting them.	X	
VEG-4	Preconstruction surveys for plants designated as sensitive or of concern will be conducted in areas of known occurrence of habitat, including noxious weeds surveys as stipulated by the land-administering agency during the development of the Plan of Development (POD), once the facilities boundaries have been located and staked.	X	
VEG-5	Prior to construction, a Noxious Weed Management Plan will be developed in accordance with BLM standards. Included in the noxious weed plan will be stipulations regarding construction, restoration, and operation (e.g. use of weed-free materials, washing of equipment, etc.).	X	X

Appendix A – Proposed Avoidance, Minimization and Mitigation Measures

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
VEG-6	Pre-construction surveys conducted to identify the locations of plants protected by the State of Nevada (NRS 527.60-120) will be flagged and avoided until BLM authorizes a proper salvage protocol.	X	
VEG-7	Vegetation salvage and replanting will be implemented and completed as required by the BLM in accordance with their established guidelines. Adopting roadway signage that discourages off-road travel will help protect vegetation along the road margins.	X	
VEG-8	The area limits of project construction and survey activities would be predetermined based on the temporary and permanent disturbance areas noted on the final design engineering drawings to minimize environmental effects arising from the project, with activity restricted to and confined within those limits.	X	
<b>Birds</b>			
WL-1	Prior to the initiation of construction activities, all construction personnel will be instructed on the protection of migratory birds. To assist in this effort, the training will address the MBTA and all applicable state laws, field procedures, and prohibited activities.	X	
WL-2	Prior to any ground-disturbing construction activity, a qualified biologist will survey and inspect the potentially affected area(s) for nests or breeding birds. If a breeding pair is discovered within the construction footprint, BLM protocol for species protection would be implemented.	X	
WL-3	Qualified biologists will survey all areas to be disturbed during construction for Burrowing owl-nesting cavities prior to the nesting season and during construction if ground-disturbing activities occur between mid-march and August. Empty nest-site burrows will be collapsed within construction zone to mitigate direct impacts that may otherwise occur to the owl.	X	
WL-4	Burrowing owls and their burrows are protected at construction sites in accordance with USFWS-Las Vegas Office guidance. If owl-occupied burrows are located during the nesting or brooding season, burrows will be avoided following USFWS protocols until the young owls leave the nest or it is determined that the nesting attempt failed.	X	
WL-5	To minimize perching opportunities for raptors near habitats supporting sensitive prey species, structures incorporating a design to discourage raptor perching should be selected including Avian Power Line Interaction Committee (APLIC) guidelines for avoiding unintended injuries to birds.	X	

Appendix A – Proposed Avoidance, Minimization and Mitigation Measures

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
<b>Reptiles</b>			
WL-6	Surveys for Desert Tortoise will occur prior to construction activities in accordance with applicable Federal and State regulations and laws.	X	
WL-7	Prior to the initiation of construction activities, all construction personnel will be instructed on the protection of the Desert Tortoise. The training will address: life history, listing status, applicable state and federal laws, field procedures, and prohibited activities.	X	
WL-8	All movement of construction vehicles outside of the right-of-way will be restricted to pre-designated access, contractor-acquired access, or public roads.	X	
WL-9	All construction sites and access roads shall be clearly marked or flagged at the outer limits prior to the onset of any surface-disturbing activity. All personnel shall be informed that their activities must be confined within the marked or flagged areas.	X	
WL-10	Any excavated holes (i.e., foundations) left open overnight will be covered, and/or tortoise-proof fencing will be installed to prevent the possibility of tortoises falling into them.	X	
WL-11	Construction sites and access roads shall be surveyed by qualified tortoise biologists no more than 15 days prior to the initiation of construction. Surveys shall provide 100 percent coverage of the construction area.	X	
WL-12	During periods of high tortoise activity (March through October) a tortoise biologist shall be present to monitor construction activities in areas not previously cleared or stabilized.	X	
WL-13	Dust control practices, specifically the use of water, will be monitored to ensure that pooling of water does not occur.	X	
WL-14	Personnel on the right-of-way, within Desert Tortoise habitat, will be required to check under their vehicles prior to moving them.	X	
WL-15	Pets will not be allowed on the transmission line right-of-way during construction.	X	
WL-16	All Desert Tortoise burrows located will be flagged or marked.	X	
WL-17	All Desert Tortoise burrows, and other species' burrows that may be used by Desert Tortoises, will be examined to determine the occupancy of each burrow by tortoises.	X	

Appendix A – Proposed Avoidance, Minimization and Mitigation Measures

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		Construction	Operation and Maintenance
WL-18	Any Desert Tortoise removed from construction sites shall be placed in an unoccupied burrow similar to the one in which it was found or in an artificial burrow, following the protocol approved by the BLM and USFWS and in compliance with NRS 503.597 and NAC 503.093.	X	
WL-19	Desert Tortoise eggs found within construction sites will be removed by qualified tortoise biologists, in accordance with BLM and USFWS protocols.	X	
WL-20	USFWS will be notified, within three days, of any tortoise death or injury caused by project activities. Notification will include the date, time, circumstances, and location.	X	
WL-21	Dead tortoises will be marked and left on-site.	X	
WL-22	Injured tortoises will be transported to a qualified veterinarian and the USFWS will determine their disposition.	X	
WL-23	Concurrent with the Desert Tortoise clearance surveys, a biologist will conduct a preconstruction survey for Gila Monsters in the project area.	X	
WL-24	NDOW's encounter protocols, <i>Gila Monster Status, Identification and Reporting Protocol for Observations</i> should be incorporated into the site plan of development (POD) and forwarded to the principal contractors and site managers for awareness during construction and operation.	X	X
<b>General Wildlife and Wildlife Habitat</b>			
WL-25	Clearing will be restricted to that area needed for construction.	X	
WL-26	Construction right-of-way will be limited to the minimum practicable width.	X	
WL-27	Littering is not allowed. Project personnel will not leave food or waste in the project area, and no biodegradable or non-biodegradable debris will remain in the right-of-way following completion of construction.	X	X
WL-28	No wildlife may be harmed except to protect life and limb.	X	X
WL-29	Project personnel are not allowed to bring pets to the project area in order to minimize harassment or killing of wildlife and to prevent the introduction of destructive animal diseases to native wildlife populations.	X	X
WL-30	Wildlife species may not be collected for pets or any other reason.	X	X

Appendix A – Proposed Avoidance, Minimization and Mitigation Measures

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
WL-31	Project supplies or equipment where wildlife could hide will be inspected prior to moving or working on them, to reduce the potential for injury to wildlife. Supplies and equipment that cannot be inspected or from which wildlife cannot escape or be removed, will be covered or otherwise made secure from wildlife intrusion or entrapment at the end of each work day.	X	
WL-32	All steep-walled trenches, construction holes, or excavations used during construction will be inspected twice daily (early morning and evening) to protect against wildlife entrapment.	X	
WL-33	An approved speed limit will be enforced on project right-of-way and access roads, unless otherwise posted, for all project personnel.	X	

**A.7 Historic and Cultural Resources**

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
CLT-1	Historic Properties Treatment Plan (HPTP) – Prior to construction, a HPTP will be designed and implemented to resolve any adverse effects to cultural resources. Mitigation measures would include data recovery methods in the case of this Project.	X	

**A.8 Paleontological Resources**

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
PALEO-1	Paleontological Resources Monitoring and Mitigation Plan - If scientifically significant paleontological resources (e.g., vertebrate fossils) are found at any time during construction, work shall be redirected to another area so that the scientific significance of the discovery may be assessed by the BLM. Solar Millennium, LLC, must immediately contact the BLM paleontological coordinator of the Pahrump Field Office and the BLM regional paleontologist so that they can assess the significance of the discovery and recommend mitigation measures, as necessary. If warranted, a paleontologist approved by the BLM will be retained to design and implement a monitoring program during project-related excavation (earth-moving) activities. Based on the new discovery, the paleontologist will review excavation plans and geotechnical data to determine more specifically where	X	

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
	paleontologically sensitive stratigraphic units may be disturbed by project-related excavation. Excavations would be monitored where these activities may potentially disturb previously undisturbed paleontologically sensitive sediment that may contain additional paleontological resources. This measure will be implemented by requiring paleontological monitoring in geological units designated as having a high potential to contain paleontological resources. The paleontological monitoring plan calls for the placement of one paleontological monitor at each construction location in all areas of high paleontological potential.		
PALEO-2	Construction Personnel Education - An orientation workshop and training will be prepared, reviewed by the BLM, and presented by a paleontologist approved by the BLM to explain paleontological mitigation guidelines and procedures to the contractor and construction workers.	X	
PALEO-3	Curation and Final Report - All fossils collected during construction will be prepared to a point where identification and permanent preservation is possible. Screen washing of fossiliferous sediment samples will be done in order to collect small or microscopic vertebrate fossils. A final report will be prepared by the paleontologist and distributed to the appropriate lead agencies.	X	
PALEO-4	Deposition in a Paleontological Repository - Fossils collected during construction will be curated into the collections of an accredited, Federally-approved, professional repository with long-term retrievable storage, such as the Nevada State Museum.	X	

### A.9 Visual Resources

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
VIS-1	Color mitigation – Owner shall treat surfaces of all ancillary facilities, excluding the solar arrays, visible to the public with paint colors that blend with the surrounding landscape ('desert' browns and tans).	X	X
VIS-2	Landscape Screening – Landscape screening may be used to reduce visibility of the project in locations that high sensitivity viewers have unobstructed foreground views of the project. This condition pertains to the residences located along Sandy Lane and just east of Valley View Road.	X	X

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
VIS-3	Restoration of Disturbed Areas – Any temporary areas that are used during the construction process are to be restored (vegetation, topographic).	X	
VIS-4	Nighttime Lighting – Owner shall consider location and type of lighting to minimize any potential light pollution to the greatest extent practicable. Measures may include, but not be limited to, light hoods/shields, directional lighting, minimum required brightness, setbacks from project perimeter, and ‘as-needed’ usage.	X	X

**A.10 Hazardous Materials and Hazardous and Solid Waste**

Reference Number	Mitigation Measures	Mitigation Application Process	
		Construction	Operation and Maintenance
HAZ-1	An onsite construction safety officer will be designated to implement health and safety guidelines and, if necessary, contact emergency response personnel and local hospitals.	X	
HAZ-2	<p>Project construction contractors will be required to develop standard operating procedures for servicing and fueling construction equipment. These procedures will, at a minimum, include the following:</p> <ul style="list-style-type: none"> <li>• No smoking, open flames or welding will be allowed in fueling/service areas.</li> <li>• Servicing and fueling of vehicles and equipment will occur only in designated areas. These areas will be bermed, covered with concrete, or fashioned in some other manner to control potential spills.</li> <li>• Fueling, service and maintenance will be conducted only by authorized, trained personnel.</li> <li>• Refueling will be conducted only with approved pumps, hoses, and nozzles.</li> <li>• All disconnected hoses will be handled in a manner to prevent residual fuel and liquids from being released into the environment.</li> <li>• Drip pans will be placed under equipment to collect small drips and minimize potential spills during servicing.</li> <li>• Service trucks will be equipped with fire extinguishers, PPE, and spill containment equipment, such as absorbents.</li> <li>• Service trucks will not remain on the job site after fueling and service are complete.</li> </ul>	X	
HAZ-3	Emergency telephone numbers will be available on site for the	X	X

Appendix A – Proposed Avoidance, Minimization and Mitigation Measures

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	fire department, police, local hospitals, ambulance service(s), and environmental regulatory agencies.		
HAZ-4	Containers used to store hazardous materials will be properly labeled and kept in good condition.	X	X
HAZ-5	<p>Hazardous materials storage will typically consist of storage of oil within equipment, ASTs, 55-gallon drums, or 5-gallon pails of lubricants and oils, and smaller containers of paints and solvents. These materials will be managed as described below to mitigate potential releases.</p> <ul style="list-style-type: none"> <li>• Hazardous materials will be stored in accordance with applicable regulations and codes, e.g., the Uniform Fire Code.</li> <li>• Trucks delivering hazardous materials will be parked adjacent to the usage area or storage area where the chemicals are to be stored to minimize potential unloading and transportation accidents.</li> <li>• Incompatible materials will be stored separately.</li> <li>• Containerized hazardous materials will be stored in original containers appropriately designed for the individual characteristics of the contained material. Containers will be labeled with contents in accordance with the OSHA Hazard Communication Standard (Title 29 CFR Part 1910.1200).</li> <li>• Hazardous materials will be stored within secondary containment structures. These structures will have capacity for the largest container plus an allowance for rainwater equivalent to a 24-hour, 25-year storm, if the area is outdoors. Alternatively, containerized hazardous materials may also be stored in commercially available hazardous materials storage sheds with built-in secondary containment.</li> <li>• Empty containers, especially portable totes and drums, will be emptied, drained, and returned to the supplier for reuse to the maximum extent possible or recycled off site.</li> <li>• Pollution prevention efforts such as replacement of hazardous materials with less hazardous materials, reduction of hazardous waste generation volumes, and recycling will be employed at the facility, as practical.</li> </ul>	X	X
HAZ-6	The project owner will develop and implement spill response procedures. Personnel working with hazardous materials will be trained in proper handling and emergency response to chemical spills or accidental releases. Additionally, designated personnel will be trained as a facility hazardous materials response team. Safety equipment will be provided for use as required during chemical containment and cleanup activities, and will include safety showers and eyewash	X	X

Appendix A – Proposed Avoidance, Minimization and Mitigation Measures

Reference Number	Mitigation Measures	Mitigation Application Process	
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	stations. The facility will maintain on site one or more spill response kits. These kits will contain absorbents appropriate for the hazardous materials kept on site and each kit will be clearly designated for the type of spilled material for which it should be used.		
HAZ-7	The project owner will develop and implement several programs to address hazardous materials storage and security, emergency response procedures, employee training requirements, hazard recognition fire safety, first-aid/emergency medical procedures, hazardous materials release containment/control procedures, hazard communication training, PPE training, and release reporting requirements. These programs will include a Hazardous Material Business Plan, worker safety program, fire response program, plant health and safety program, and facility standard operating procedures. The Plan will include procedures on hazardous materials handling, use, and storage; emergency response; spill prevention and control; training; record keeping; and reporting.	X	X