

**Photo Log
For Sapphire Energy
Field Visit**

March 5, 2009



View NE from SW corner Section 8



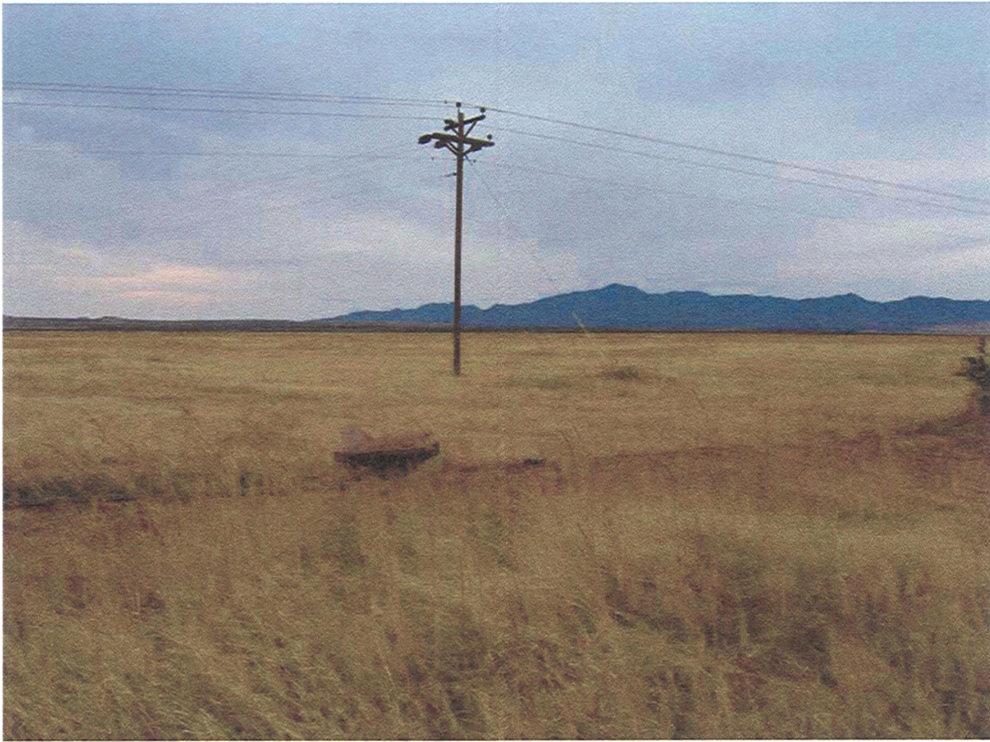
View E along canal from mid-west edge of Section 8



View SE from NW corner Section 8



View S from north central point of Section 8



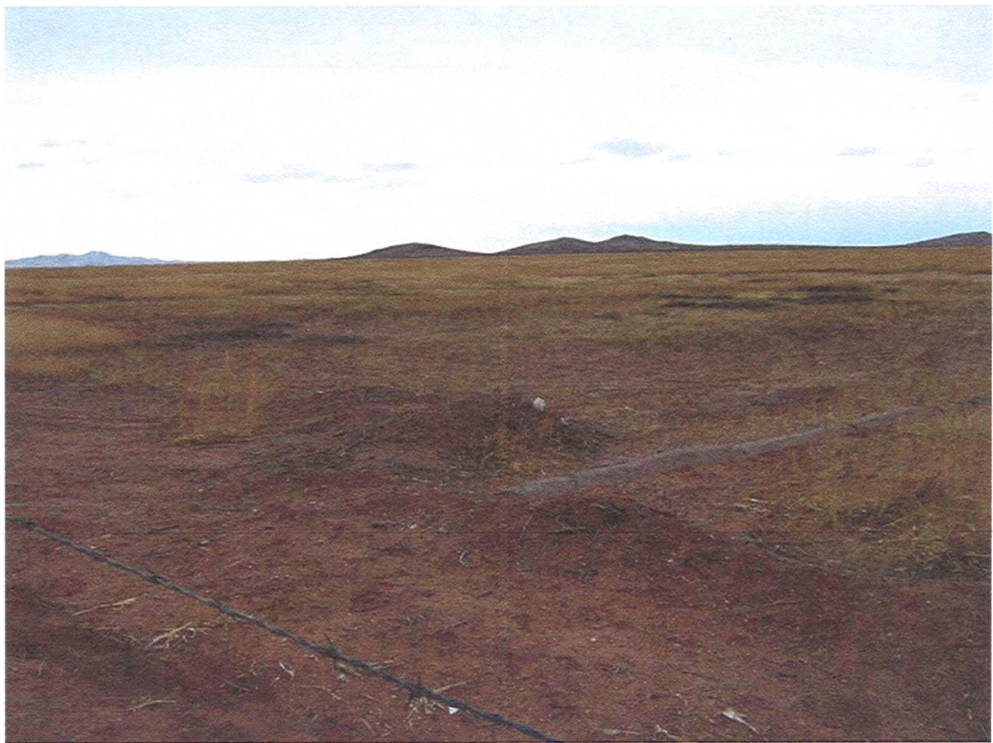
View S from NW portion of Section 8



View N from NW portion of Section 8 (the small piece of property across highway)



View N from S-mid point of Section 8



View NW from SE corner Section 8



View NE from SE corner Section 8



View SW from E-mid point of Section 9



View NW from SE corner Section 9



View N from S-mid point of Section 9



View S from middle of Section 8



Photo 1: Plowmarks in abandoned field of the proposed project (photograph taken facing north in southwestern portion of project area).



Photo 2: Concrete canal (photograph taken facing north in center of proposed project area).



Photo 3: Well head east of proposed project (photograph taken facing west toward project area). Wells on the property have been inventoried for potential future use in the project.



Photo 4: Powerline and abandoned field in northern portion of proposed project area (photograph taken facing north to northern edge of project area).



Photo 5: Southern boundary of proposed project (photograph taken facing north across project area).



Photo 6: Abandoned field in project area (facing north in southwestern portion of project area).



Photo 7: Small eroded area in eastern portion of proposed project (photograph taken facing north).



Photo 8: Powerline and abandoned field in southeastern portion of proposed project area (photograph taken facing northwest toward center of project area).



Photo 9: Eastern edge of proposed project (photograph taken facing east past the project boundary).



Photo 10: Powerline and abandoned field in southwestern portion of proposed project area (photograph taken facing northeast toward center of project area).

Mimbres Basin, NM

Common Name	Scientific Name	County	Status
<i>Fish</i>			
Chub, Roundtail	Gila robusta	Hidalgo	State: Endangered
Minnow, Loach	Tiaroga cobitis	Hidalgo	Federal: Threatened State: Threatened
Spikedace	Meda fulgida	Hidalgo	Federal: Threatened State: Endangered
<i>Amphibians</i>			
Frog, Leopard, Chiricahua	Rana chiricahuensis	Hidalgo Luna	Federal: Threatened
Frog, Leopard, Lowland	Rana yavapaiensis	Hidalgo	State: Endangered
Toad, Desert, Sonoran	Bufo alvarius	Hidalgo	State: Threatened
Toad, Narrowmouth, Great Plains	Gastrophryne olivacea	Luna	State: Endangered
<i>Reptiles</i>			
Lizard, Bunchgrass, Slevin's	Sceloporus slevini	Hidalgo	State: Threatened
Monster, Gila, Reticulate	Heloderma suspectum suspectum (NM,AZ)	Hidalgo Luna	State: Endangered
Rattlesnake, Ridgenose, NM	Crotalus willardi obscurus (NM)	Hidalgo	Federal: Threatened State: Endangered
Rattlesnake, Rock, Mottled	Crotalus lepidus lepidus (NM)	Hidalgo	State: Threatened
Skink, Mountain	Eumeces callicephalus	Hidalgo	State NM: Threatened
Snake, Garter, Mexican	Thamnophis eques megalops (NM)	Hidalgo	State: Endangered
Snake, Garter, Narrowhead	Thamnophis rufipunctatus rufipunctatus (NM)	Hidalgo	State: Threatened
Snake, Rat, Green	Senticolis triaspis intermedia (NM,AZ)	Hidalgo	State: Threatened
Whiptail, Gray-checked	Aspidoscelis dixonii	Hidalgo	State: Endangered
Whiptail, Spotted, Canyon	Aspidoscelis burti stictogrammus (NM,AZ);xanthonotus (AZ)	Hidalgo	State: Threatened
<i>Birds</i>			
Tyrannulet, Beardless, N.	Camptostoma imberbe ridgwayi (NM)	Hidalgo	State: Endangered
Black-Hawk, Common	Buteogallus anthracinus anthracinus (NM)	Dona Ana Hidalgo Luna	State: Threatened
Bunting, Varied	Passerina versicolor versicolor (NM);dickeyae (NM)	Dona Ana Hidalgo Luna	State: Threatened
Cormorant, Neotropic	Phalacrocorax brasilianus	Dona Ana Hidalgo Luna	State: Threatened
Eagle, Bald	Haliaeetus leucocephalus alascanus (NM)	Dona Ana Hidalgo Luna	State: Threatened
Falcon, Aplomado	Falco femoralis septentrionalis (NM)	Dona Ana Hidalgo Luna	Federal: Endangered State: Endangered
Falcon, Peregrine	Falco peregrinus anatum	Dona Ana Hidalgo Luna	State: Threatened
Falcon, Peregrine, Arctic	Falco peregrinus tundrius	Dona Ana Hidalgo Luna	State: Threatened
Flycatcher, Willow, SW.	Empidonax traillii extimus	Dona Ana Hidalgo Luna	Federal: Endangered State: Endangered
Ground-dove, Common	Columbina passerina pallescens (NM)	Dona Ana Hidalgo Luna	State: Endangered

Hummingbird, Broad-billed	<i>Cynanthus latirostris magicus</i> (NM)	Dona Ana Hidalgo	State: Threatened
Hummingbird, Costa's	<i>Calypte costae</i>	Dona Ana Hidalgo	State: Threatened
Hummingbird, Lucifer	<i>Calothorax lucifer</i>	Hidalgo Luna	State NM: Threatened
Hummingbird, Violet-crowned	<i>Amazilia violiceps ellioti</i> (NM)	Dona Ana Hidalgo Luna	State NM: Threatened
Hummingbird, White-eared	<i>Hylocharis leucotis borealis</i> (NM)	Hidalgo	State NM: Threatened
Junco, Yellow-eyed	<i>Junco phaeonotus palliatus</i> (NM)	Hidalgo	State NM: Threatened
Kingbird, Thick-billed	<i>Tyrannus crassirostris</i>	Hidalgo	State NM: Endangered
Nightjar, Buff-collared	<i>Caprimulgus ridgwayi ridgwayi</i> (NM)	Dona Ana Hidalgo	State NM: Endangered
Screech-Owl, Whiskered	<i>Megascops trichopsis asperus</i> (NM)	Hidalgo	State NM: Threatened
Owl, Spotted, Mexican	<i>Strix occidentalis lucida</i> (NM,AZ)	Dona Ana Hidalgo Luna	Federal: Threatened
Pelican, Brown	<i>Pelecanus occidentalis carolinensis</i> (NM)	Dona Ana Luna	State NM: Endangered
Sparrow, Baird's	<i>Ammodramus bairdii</i>	Dona Ana Hidalgo Luna	State NM: Threatened
Sparrow, Grasshopper, AZ	<i>Ammodramus savannarum ammoregus</i> (NM,AZ)	Hidalgo	State NM: Endangered
Tern, Least	<i>Sterna antillarum athalassos</i> (NM)	Dona Ana	Federal: Endangered State NM: Endangered
Towhee, Abert's	<i>Pipilo aberti aberti</i> (NM)	Hidalgo	State NM: Threatened
Trogon, Elegant	<i>Trogon elegans canescens</i> (NM)	Hidalgo	State NM: Endangered
Turkey, Wild, Gould's	<i>Meleagris gallopavo mexicana</i> (NM,AZ)	Hidalgo	State NM: Threatened
Vireo, Bell's	<i>Vireo bellii arizonae</i> (NM,AZ); <i>medius</i> (NM)	Dona Ana Hidalgo Luna	State NM: Threatened
Vireo, Gray	<i>Vireo vicinior</i>	Dona Ana Hidalgo Luna	State NM: Threatened
Woodpecker, Gila	<i>Melanerpes uropygialis uropygialis</i> (NM)	Hidalgo	State NM: Threatened
<i>Mammals</i>			
Bat, Long-nosed, Mexican	<i>Leptonycteris nivalis</i>	Hidalgo	Federal: Endangered State NM: Endangered
Bat, Long-nosed, Southern	<i>Leptonycteris curasoae yerbabuenae</i> (NM,AZ)	Hidalgo	Federal: Endangered State NM: Threatened
Bat, Spotted	<i>Euderma maculatum</i>	Dona Ana	State NM: Threatened
Bat, Yellow, Western	<i>Lasiurus xanthinus</i>	Hidalgo	State NM: Threatened
Chipmunk, Colorado, Organ Mtns.	<i>Neotamias quadrivittatus australis</i> (NM)	Dona Ana	State NM: Threatened
Gopher, Pocket, Southern	<i>Thomomys umbrinus emotus</i> (NM)	Hidalgo	State NM: Threatened
Jaguar	<i>Panthera onca arizonensis</i> (NM,AZ)	Hidalgo	Federal: Endangered
Rabbit, Jack, White-sided	<i>Lepus callotis gaillardi</i> (NM)	Hidalgo	State NM: Threatened
Sheep, Bighorn, Desert	<i>Ovis canadensis mexicana</i> (endangered pops)	Dona Ana Hidalgo	State NM: Endangered
Shrew, Arizona	<i>Sorex arizonae</i>	Hidalgo	State NM: Endangered
Wolf, Gray, Mexican	<i>Canis lupus baileyi</i> (NM,AZ)	Hidalgo	Federal: Endangered State NM: Endangered
<i>Molluscs</i>			
Woodlandsnail, Hacheta Grande	<i>Ashmunella hebardii</i>	Hidalgo	State NM: Threatened
Woodlandsnail, Cooke's Peak	<i>Ashmunella macromphala</i>	Luna	State NM: Threatened
Snail, Snaggletooth, Shortneck	<i>Gastrocopta dalliana dalliana</i> (NM)	Hidalgo	State NM: Threatened
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Rare Plant List
County List
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Species
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but dropped

Photographers
and Authors

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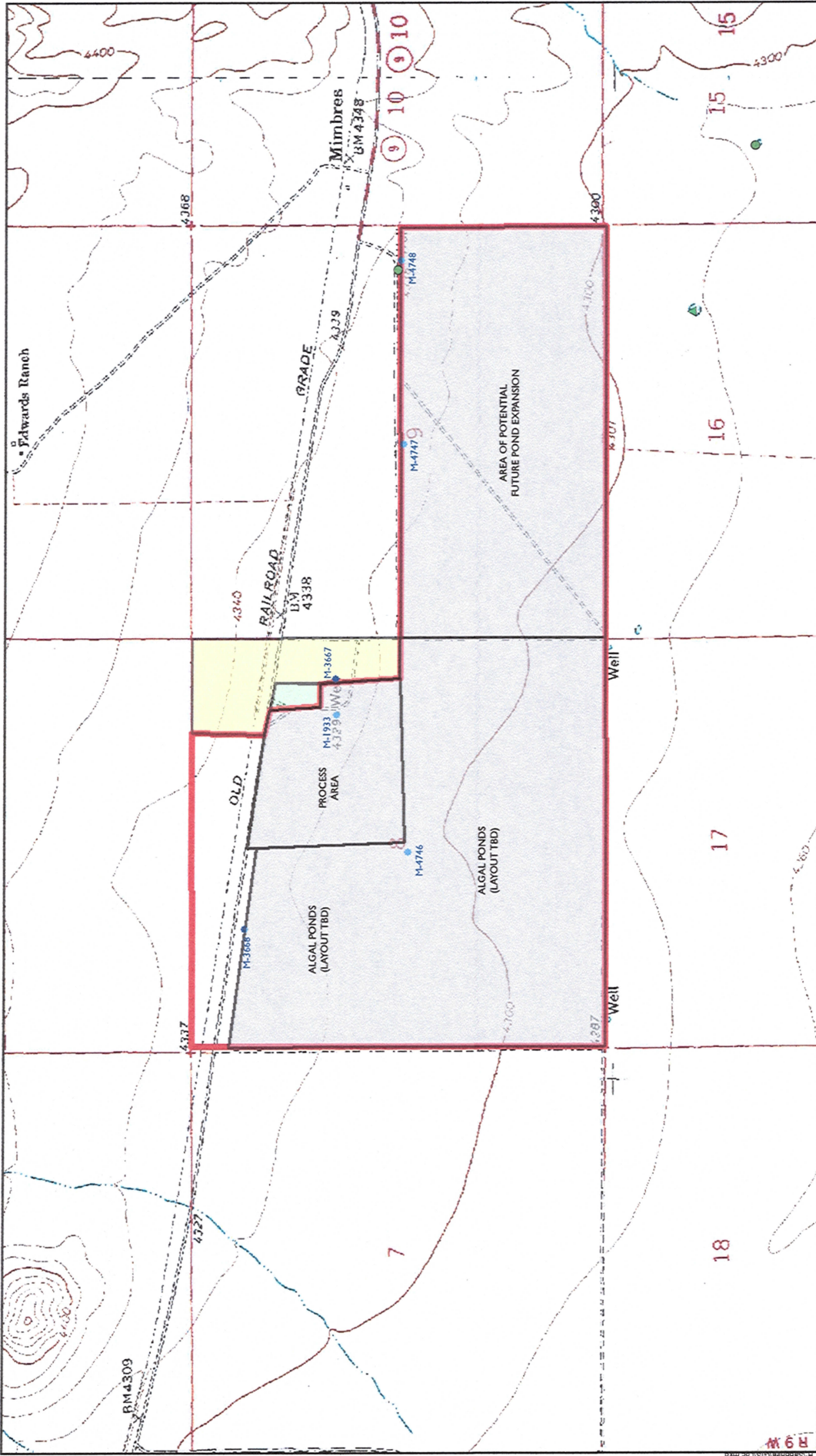
Results of County Search

DONA ANA	
Scientific name	County-NM
<i>Agastache cana</i>	Dona Ana, Grant, Luna, Sierra
<i>Agastache pringlei</i> var. <i>verticillata</i>	Dona Ana
<i>Astragalus castetteri</i>	Dona Ana, Sierra
<i>Castilleja organorum</i>	Dona Ana
<i>Draba standleyi</i>	Dona Ana, Otero, Sierra, Socorro
<i>Escobaria organensis</i>	Dona Ana
<i>Escobaria sandbergii</i>	Dona Ana, Sierra
<i>Escobaria sneedii</i> var. <i>sneedii</i>	Dona Ana
<i>Escobaria villardii</i>	Dona Ana, Otero
<i>Hexalectris spicata</i> var. <i>arizonica</i>	Dona Ana, Hidalgo, Otero, Sierra
<i>Hymenoxys vaseyi</i>	Dona Ana, Sierra
<i>Oenothera organensis</i>	Dona Ana
<i>Opuntia arenaria</i>	Dona Ana, Luna, Socorro
<i>Peniocereus greggii</i> var. <i>greggii</i>	Dona Ana, Grant, Hidalgo, Luna
<i>Penstemon alamosensis</i>	Dona Ana, Lincoln, Otero
<i>Perityle cernua</i>	Dona Ana
<i>Perityle staurophylla</i> var. <i>staurophylla</i>	Dona Ana, Otero, Sierra
<i>Polygala rimulicola</i> var. <i>mescalerorum</i>	Dona Ana
<i>Salvia summa</i>	Chaves, Dona Ana, Eddy
<i>Scrophularia laevis</i>	Dona Ana
<i>Silene plankii</i>	Bernalillo, Dona Ana, Sandoval, Sierra, Socorro, Torrance
GRANT	
Scientific name	County-NM
<i>Agastache cana</i>	Dona Ana, Grant, Luna, Sierra
<i>Brickellia chenopodina</i>	Grant

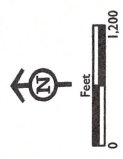
<i>Cleome multicaulis</i>	Grant
<i>Crataegus wootoniana</i>	Catron, Grant, Lincoln
<i>Cymopterus davidsonii</i>	Catron, Grant
<i>Desmodium metcalfei</i>	Grant, Sierra
<i>Draba mogollonica</i>	Catron, Grant, Sierra, Socorro
<i>Grindelia arizonica</i> var. <i>neomexicana</i>	Grant, Sierra
<i>Peniocereus greggii</i> var. <i>greggii</i>	Dona Ana, Grant, Hidalgo, Luna
<i>Penstemon linarioides</i> ssp. <i>maguirei</i>	Grant
<i>Phemeranthus humilis</i>	Grant, Hidalgo
<i>Puccinellia parishii</i>	Catron, Cibola, Grant, Hidalgo, Mckinley, San Juan, Sandoval
<i>Scrophularia macrantha</i>	Grant, Luna
<i>Silene thurberi</i>	Grant, Hidalgo, Sierra
<i>Silene wrightii</i>	Catron, Grant, Luna, Sierra, Socorro
<i>Stellaria porsildii</i>	Grant
LUNA	
Scientific name	County-NM
<i>Agastache cana</i>	Dona Ana, Grant, Luna, Sierra
<i>Atriplex griffithsii</i>	Hidalgo, Luna
<i>Escobaria orcuttii</i>	Hidalgo, Luna
<i>Opuntia arenaria</i>	Dona Ana, Luna, Socorro
<i>Peniocereus greggii</i> var. <i>greggii</i>	Dona Ana, Grant, Hidalgo, Luna
<i>Scrophularia macrantha</i>	Grant, Luna
<i>Silene wrightii</i>	Catron, Grant, Luna, Sierra, Socorro
<i>Sphaeralcea procera</i>	Luna
<i>Sphaeralcea wrightii</i>	Luna
SIERRA	
Scientific name	County-NM
<i>Agastache cana</i>	Dona Ana, Grant, Luna, Sierra
<i>Astragalus castetteri</i>	Dona Ana, Sierra
<i>Cirsium wrightii</i>	Chaves, Guadalupe, Otero, Sierra, Socorro
<i>Cuscuta warneri</i>	Roosevelt, Sierra
<i>Desmodium metcalfei</i>	Grant, Sierra
<i>Draba mogollonica</i>	Catron, Grant, Sierra, Socorro
<i>Draba standleyi</i>	Dona Ana, Otero, Sierra, Socorro
<i>Erigeron scopulinus</i>	Catron, Sierra, Socorro
<i>Escobaria duncanii</i>	Sierra

<i>Escobaria sandbergii</i>	Dona Ana, Sierra
<i>Grindelia arizonica</i> var. <i>neomexicana</i>	Grant, Sierra
<i>Hedeoma todsenii</i>	Otero, Sierra
<i>Hexalectris spicata</i> var. <i>arizonica</i>	Dona Ana, Hidalgo, Otero, Sierra
<i>Hymenoxys vaseyi</i>	Dona Ana, Sierra
<i>Penstemon metcalfei</i>	Sierra
<i>Perityle staurophylla</i> var. <i>homoflora</i>	Sierra, Socorro
<i>Perityle staurophylla</i> var. <i>staurophylla</i>	Dona Ana, Otero, Sierra
<i>Physaria gooddingii</i>	Catron, Sierra
<i>Silene plankii</i>	Bernalillo, Dona Ana, Sandoval, Sierra, Socorro, Torrance
<i>Silene thurberi</i>	Grant, Hidalgo, Sierra
<i>Silene wrightii</i>	Catron, Grant, Luna, Sierra, Socorro

Photo credits in header *Peniocereus greggii* var. *greggii* © T. Todsén,
Lepidospartum burgessii © M. Howard, *Argemone pleiacantha* ssp. *pinnatisecta* © R. Sivinski
 ©2005 New Mexico Rare Plant Technical Council



Source: New Mexico, RGIS



- Irrigation Well
- Irrigated Property
- Wetlands (As mapped by National Wetland Inventory)
- Property Boundary
- Cook Property
- ▲ Palustrine Flu-Wetland
- Total Acres - 819.8 ac.
- My Property
- Palustrine Open Water Wetland

Site Plan
Proposed IABR Facility
Columbus, New Mexico
FIGURE 1

