CHECKLIST ENVIRONMENTAL ASSESSMENT

Project Name:	Alaska Basin Gravel Permit, Beaverhead County
Proposed Implementation Date:	July, 2011
Proponent:	Beaverhead County
Location:	Section 16, Township 14 South – Range 1 East
County:	Beaverhead

I. TYPE AND PURPOSE OF ACTION

Beaverhead County has requested the use of State Ground in the SW1/4NW1/4SW1/4 and the W1/2SW1/4SW1/4 of Section 16, T14S – R1E for the mining of gravel. The request is for the mining of 10,000 cubic yards of gravel to be removed from an 8.37 acre area in the Centennial Valley. The County currently has two small volume permits in the same general vicinity and a prior permit that was closed and reclaimed (approximately 0.66 acres in size). The County has applied for an open cut permit with the Montana Department of Environmental Quality (DEQ) for this proposal.

The proposed gravel pit is accessed off of the South Valley Road and is approximately 12 miles east of the town of Lakeview. The pit would be reclaimed yearly and would remain open for a ten year period, until 2021.

II. PROJECT DEVELOPMENT

1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:
Provide a brief chronology of the scoping and ongoing involvement for this project.

Montana Fish Wildlife & Parks
Bob Brannon, Wildlife Biologist
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Sheridan, MT 59749

Tim Bozorth
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Tony Schoonen
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Jack Atcheson
MT Coalition for Appropriate Mgmt.
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Red Rock Lakes National Wildlife Refuge
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Lima, MT 59739

Nathan Korb
The Nature Conservancy
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MT Fish Wildlife & Parks
Matt Jaeger, Fisheries Biologist
730 North Montana St
Dillon, MT 59725

Patrick Rennie, MT DNRC Archeologist
Gary Frank, MT DNRC Hydrologist
Jim Bower, MT DNRC Fish Biologist
Jeff Schmalenberg, MT DNRC, Soils Scientist, Hydrologist

NRIS Search

2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

MT DEQ, Open Cut Permit applied for on October 15, 2010

3. ALTERNATIVES CONSIDERED:

A. **Action Alternative:** Grant Beaverhead County Road Department a gravel permit to mine up to 10,000 cubic yards of gravel on eight acres of state land in Section16, T14S – R1E in the Centennial Valley.

B. **No Action Alternative**: Deny Beaverhead County Road Department the right to use DNRC State Land for a new expanded gravel permit.

III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:
Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.

Soil productivity within the permit area would be expected to decrease both during and after gravel development was implemented and reclamation activities were completed. This would have a low level cumulative effect for livestock carrying capacity on the tract for only a short duration. For more information regarding potential effects to geology and soil resources, see the resource report attached to the end of this document.

5. WATER QUALITY, QUANTITY AND DISTRIBUTION:
Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.

There are two creeks located near the site of this proposal. Red Rock Creek which flows into Red Rock Lakes is within ¼ mile of the proposed pit, and Antelope Creek a tributary of Red Rock Creek is within 1/8 of a mile of the proposal. DNRC Hydrologist Gary Frank reviewed this proposal and determined that there was an adequate buffer zone between the proposed pit and the two streams. The distance between the pit and the moderate down slope grades will reduce the likely hood of sediment delivery to the streams via surface runoff. The County road, South Valley Road will block any surface flow from the pit to Red Rock Creek. Because the topography at the pit location is sloped away from Antelope Creek any delivery to the stream would be very unlikely.

The proposed pit is in the vicinity of a water right claim with the point of diversion from Antelope Creek. There however is not evidence of a ditch either on the state land or leading into or below the project area and there is no record of authorization for a ditch on state land.

The most likely operational problem could be the high water table in this area and the possibility of flooding in the excavated area during the spring. The excavation will need to stay within the designated area of the Open Cut permit that was applied for with the MT DEQ to maintain the appropriate buffer zones to the existing streams. On the DEQ open cut permit application the Plan of Operation indicates that the pit depth will not exceed 8 feet in depth. In talking with Mike Schafer, the Beaverhead County Road Supervisor he indicated that in the past this is the depth that they have used on the small volume permits and they never had any standing water or ground water problems at the site. Maintaining the 8 foot depth during the excavation process will assure that there isn't any transfer of ground water from Antelope Creek into the pit.

This project should not contribute to any long term or cumulative impacts to water quality in the Centennial Valley or deliver sediment to Antelope Creek or Red Rock Creek drainages. For more information regarding water quality, quantity and distribution, see the resource report attached to the end of this document.

6. AIR QUALITY:
What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.

During the summer months dust particulates could become a problem if dry conditions are encountered when the gravel pit is being excavated. This gravel pit however is located in a sparsely populated valley with no recorded problems meeting the EPA ambient air quality standards.

In the summer and early fall there is a tourist presence in the valley with people visiting the Red Rock Lakes National Wildlife Refuge. This proposal is only 8 acres in size though, and the gravel extraction will only occur occasionally during the year. Any impacts to air quality would be temporary in nature and would not have any long term or cumulative impacts to ambient air quality standards in this area.

The County has indicated that there will not be a crusher brought in for this pit and the majority of the excavation work would occur in the early summer when ground conditions would have enough moisture to prevent air quality standards from being affected.

7. VEGETATION COVER, QUANTITY AND QUALITY:
What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.

The 8 acres of gravel extraction would have a minor short term impact on the vegetation community that is currently present at the pit location. The most recent field evaluation of this site indicates that the predominant grass species are Bluebunch Wheatgrass (Agropyron spicatum), Green Needlegrass,(Stipa viridula), Idaho fescue, (Festuca idahoensis) and a mixture of forbs. If the gravel extraction were to occur the top soil at the surface of the soil would need to be stockpiled and spread over the disturbed areas and these areas grass seeded with a native grass seed on a yearly basis. None of these grass species are rare or sensitive plants. These native grasses would re - vegetate the site rapidly with a minimum amount of expenditure and labor to the proponent.

Beaverhead County would be responsible for writing a weed management plan for this proposal and would assume the long term monitoring and spraying for any noxious weeds that may occur from any gravel extraction at this site. At present the Centennial Valley has little noxious weed problems and by closely monitoring the site and spraying any weeds that occur this proposal should have little long term impacts to the spread of noxious weeds in the valley.

An NRIS search of the section identified three vascular plant species of concern near the proposed project.
These include;

1. Northwestern Thelypody (Thelypodium paniculatum) was first observed and documented within ½ mile of the proposal in June of 1899. There has not been another recorded sighting of the plant in the NRIS survey. The MT Natural Heritage Program doesn't indicate any more recent observations. The plants status is listed as SH, G2 meaning that it is known historically from records of origin of 40 years or older; however it could be rediscovered. Globally the plant is vulnerable to global extinction. Because the plant has not been observed in the area in 111 years and the original discovery is outside of the proposals location the long term viability of this plant will probably not be affected by the implementation of this project. The discovery included an area of 6,986 acres and the proposed pit is only 8 acres and is outside of the discovery zone. The plant has not been observed in any recent field evaluations by DNRC Land Use Specialists.

2. Fleshy Stitchwort, (Stellaria crassifolia) is a vascular plant ranked as an S1, G5 status by the state of MT and was observed within 2 miles of the proposed pit in 1930. Its habitat includes moist or wet meadows, often along streams, in the foothills to alpine zones. The plant is rare in Montana but common globally. The area where the plant was observed in the Centennial Valley included approximately 5,698 acres. Due to the plants distant location from the proposal (2 miles) the action alternative would not have any long term or cumulative effects on the plant.

3. Wedge-leaved Saltbush (Atriplex truncate) has an S1 State and G5 global rating. Meaning it's rare in Montana but common globally. This vascular plant was observed in 1952 over an area of approximately 1,987acres and may occur where this proposal is planned. Habitat associated with this plant is vernally moist, alkaline soils around ponds and along streams in valleys. It's only been found in two locations in Montana with the Centennial Valley being one location. This project would

affect an area of approximately 8 acres which is approximately 4/100 of the area that the plant was observed in. If the plant is present this proposal would probably not have any long term or cumulative effect on this vascular plant. The plant was not observed during any field evaluations in the recent past.

8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:
Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.

During the scoping process we received comments from both the Red Rock Lakes National Wildlife Refuge (NWR) and the Montana Fish Wildlife and Parks (FWP) about concerns affecting **Arctic** G**rayling** (**Thymallus Arcticus)** populations in the Centennial Valley. Grayling are currently living in Red Rock Creek and at one time populated the Antelope Creek drainage. In September, 2010 the Arctic grayling population in Red Rock Creek were added to the candidate list for Threatened and Endangered Species. The fish is considered a Critically Imperiled (G1, S1) Species of Special Concern. Both the NWR and FWP are concerned about any further degradation of either of the streams near this proposed gravel pit.

Because of the loss of the graylings spawning habitat in ten of the twelve historically used tributaries of the Red Rock River the continued viability of this remaining population is dependent upon protecting the remaining spawning habitat that is available. Avoiding any degradation of either Antelope or Red Rock Creeks from this proposal is critical to the continued existence of this species in the Centennial Valley.

As mentioned above sediment delivery into either of the creeks is highly unlikely due to the distance from Red Rock Creek and the gentle slope of the ground near the proposal. The South Valley road would act as a barrier to any delivery of sediment. In addition the slope of the ground is away from Antelope Creek making it difficult for any sediment delivery.

The Centennial Valley is also home to numerous avian and wildlife species that use this part of the valley as their home, including large ungulates such as deer, elk, moose and antelope. Because the proposal is only 8 acres in size there should be no long term or cumulative impacts to these ungulate populations. These animals are highly mobile and the proposal is located next to the county road which is not critical habitat for these species. With the small size of the project 8 acres, any displacement would be of short duration and no long term or cumulative effects are not anticipated.

9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:
Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.

An NRIS search identified nine sensitive species that are present near this proposal. They include the following;

1. **Grizzly Bear, (Ursus arctos)** the proposed project area is situated approximately 2 miles west of the Greater Yellowstone Ecosystem Grizzly Bear Recovery Zone. In recent years, grizzly bears have been documented ranging greater distances outside of the Yellowstone Ecosystem. Grizzly bears have occasionally been documented in the vicinity of the proposed project area and the proposed project area lies within a zone considered as occupied habitat (Interagency Occupied Habitat Map, September 2002). As such, the lands in the general vicinity of Red Rocks Lakes were identified as those where one would reasonably expect to find grizzly bear use occurring during most years. DNRC is not aware of any specific observations of grizzly bears associated with the proposed project area; however, periodic or transient use is possible. Because of the lack of cover where this project is proposed no long term or cumulative impacts would be anticipated to the grizzly bear population.
2. **Gray Wolf (Canis lupus)** The proposed project area falls within the Yellowstone Nonessential Experimental Area for gray wolves. The nearest packs are the Freezeout and Red Rock packs (J. Fontaine, USFWS, Pers. Comm. May 2005). Individuals from these packs or transients from other packs could occasionally use portions of the proposed project area; however, due to the size, nature, duration and location of the proposed project, activities associated with this proposal are not expected to affect wolves or recovery efforts. Should a new den be located within one mile of the proposed project area, activities would cease and a DNRC Biologist would be contacted immediately.

Mitigations would then be developed and implemented to minimize adverse impacts to wolves prior to initiating any activity.

3. **Wolverine (Gulo gulo)** Wolverines are listed as sensitive species by both the BLM and USFS. The species status is S3, G4 meaning it is globally secure but at potential risk because of limited or declining numbers within the state. The Montana Natural Resource Information Service (NRIS) indicates that wolverines have been observed near the project area in 1990 and again in 2005. Wolverines are usually limited to alpine tundra, boreal, and mountain forests (primarily coniferous) in the western mountains, especially large wilderness areas. Their seasonal ranges are within a large home range; dispersal movements of more than 300 kilometers are known. However, dispersing individuals have been found far outside of usual habitats. At this time this proposal does not present wolverines with critical habitat that they need to survive. Any wolverine in this area would more than likely be just passing through. This proposal does not affect critical habitat that the wolverine needs to survive, and because of the proposals small foot print (8 acres) no long term or cumulative effects to wolverines are anticipated.
4. **Yellowstone Cutthroat Trout (Oncorhynchus clarkii bouvieri)** is listed as a sensitive species by the Forest Service and BLM. The species status is currently listed as a S2, G4T2. The fish is globally secure but at risk or potentially declining population numbers with in Montana. An NRIS search reveled that Yellowstone Cutthroat are present in Red Rock Creek which is within ¼ mile of the proposed project. This proposal could affect the fish population in the creek both cutthroat and grayling if sediment from the pit was allowed to enter the stream due to runoff from the excavation process. Currently the South Centennial Road would act as a barrier to any sediments reaching Red Rock Creek drainage and the ground is sloped away from Antelope Creek. As proposed this project would not cause sediments to enter the stream and thus no long term or cumulative impacts are anticipated to cutthroat trout or Arctic grayling.
5. **Black–crowned Night-Heron (Nycticorax nycticorax)** is listed as a sensitive species by the BLM and the species status is listed as S3B, G5 the bird is not rare globally, but is potentially at risk during the breeding season in Montana. An NRIS search revealed that the bird has been observed within 2 miles of the proposals location and occurrence is within a 42,086 acres area. In general, Black-crowned Night-Herons are found in marshes, swamps, wooded streams, shores of lakes, ponds, lagoons, brackish, and freshwater areas. Foraging habitat is typically in the shallow, vegetated edges of ponds, lakes, creeks, and marshes. This heron roosts by day in swampy woodland. This proposal is far enough away from the know locations of this heron and the habitat of the proposal doesn't match that needed by the heron so no long term or cumulative effects to the bird are anticipated.
6. **White-faced Ibis, (Plegadis chihi)** is listed as a sensitive species by the BLM and the species status is listed as S3B, G5 the bird is not rare globally, but is potentially at risk during the breeding season in Montana. An NRIS search revealed that the bird has been observed within 2 miles of the proposals location and occurrence is within a 42,086 acres area. The White-faced Ibis breeding habitat is typically freshwater wetlands, including ponds, swamps and marshes with pockets of emergent vegetation. They also use flooded hay meadows and agricultural fields as feeding locations. Ibises nest in areas where water surrounds emergent vegetation, bushes, shrubs, or low trees. In Montana, White-faced Ibises usually use old stems in cattails (*Typha* spp.), hardstem bulrush (*Scirpus acutus*) or alkali bulrush (*S. paludosus*) over shallow water as their nesting habitat (DuBois 1989). The proposal site is not critical habitat for Ibis' so no long term or cumulative effects are anticipated.
7. **Bald Eagle (Haliaeetus leucocephalus)** is listed as a threatened species by the Forest Service and a sensitive species by the BLM. The species status listed by NRIS is S3, G5, globally secure and potentially at risk because of limited or declining numbers in the state. The eagle is primarily a species of riparian and lacustrine habitats (forested areas along rivers and lakes), especially during the breeding season. Important year-round habitat includes wetlands, major water bodies, spring spawning streams, ungulate winter ranges and opens water areas (Bureau of Land Management 1986). This proposal would not affect bald eagle habitat needs or prey species in this area of the Centennial Valley. No nesting sites are identified near or within miles of the proposal. No long term or cumulative impacts are anticipated.
8. **Franklins Gull (Leucophaeus pipixcan)** is listed as a sensitive species by the BLM and its species status is S3B, G4G5. Franklins gull prefers large, relatively permanent prairie marsh complexes, and builds its nests over water on a supporting structure of emergent vegetation. Nesting is noted to occur in cattails (*Typha* spp.) and bulrushes (*Scirpus* spp.) (Berger and Gochfeld 1994). The bird prefers wetland and riparian habitat. Because this proposal is outside of any wetlands this proposal would not have any long term or cumulative effects on the bird.
9. **Forester's Tern (Osterna forsteri)** is a sensitive species whose species status is listed as S3B, G5. The bird's habitat needs are large marshes with extensive reed beds or Muskrat houses that provide

nesting structures. It's also occasionally found along marshy borders of lakes and reservoirs in Montana. The species generally nests colonially, with as many as five nests recorded on one Muskrat house (Johnsgard 1986). Preferred nesting locations include both nesting and foraging sites within close proximity. This proposal would not affect habitat that the birds use and would not have any long term or cumulative impacts.

10. HISTORICAL AND ARCHAEOLOGICAL SITES:
Identify and determine effects to historical, archaeological or paleontological resources.

MT DNRC archeologist Patrick Renee was contacted about this proposal and no archeological or paleontological artifacts have been identified at this location. If the action alternative is chosen in the decision process any artifacts found during the excavation of gravel would require the immediate contact of DNRC personnel prior to the continuing of any operations.

11. AESTHETICS:
Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.

The Centennial valley is a large east west valley that includes the headwaters of the Missouri River. The upper and lower Red Rock Lakes and the Red Rock River are the dominant features of the valley floor. The Red Rock Lakes National Wildlife Refuge is a major draw of tourist and birders to the area to observe the abundant diversity of wildlife, birds and plants. The refuge and surrounding wetlands support large populations of nesting waterfowl, including over 500 pairs of sandhill cranes, 100 pairs of trumpeter swans, 3 pairs of peregrine falcons, 4 pairs of bald eagles and an array of hawk species.

This proposal will border the eastern edge of the wildlife refuge and be plainly visible from the South Valley Road. The road is unpaved and is the main thoroughfare and access route to the NWR. The proposal however includes a reclamation plan to implement the re-vegetation of the site once the gravel extraction has been completed. Beaverhead County has had two previous small volume permits (300 cubic yards of gravel/ permit) in the same vicinity as this proposal and both have been satisfactorily been reclaimed and re-vegetated.

Because of the high water table, excavation depths will need to remain shallow, 8 feet maximum which will limit the overall aesthetic impacts to this area. The gravel that would be extracted would be used for projects in the general vicinity of the proposal. Beaverhead County would like to replace a bridge in the area and put gravel on the Elk Lake Road which is currently impassable when wet. The South Valley Road also needs additional gravel placed on it in a number of areas that are impassible after spring breakup.

Beaverhead County has experienced numerous problems trying to find a suitable gravel source in the Centennial Valley that is close enough to their project to make the project economically viable. The closest source of gravel that they have is near the Snowline exit which is approximately 40 miles away on roads that are gravel and difficult to travel on with dump trucks.

12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:
Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.

This project will be located along the boundary of the Red Rock Lakes NWR, and the north boundary will be next to the South Valley County Road. The pit would be highly visible to anyone driving the road. Even when reclaimed, the excavated pit will be plainly visible to anyone driving by on the road. Because of the light development in the Centennial Valley and pristine nature of the area this gravel pit could have a long lasting effect on the visual characteristics of the valley. The excavated pit will be 8 acres in size and will only be excavated to a depth of 8 feet. The visual impact should be minimal to the size of the Valley and will be back slopped and seeded to reduce any cumulative impacts to the environment.

13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:
List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.

I am unaware of any other plans, studies or projects planned or occurring in this area.

IV. IMPACTS ON THE HUMAN POPULATION

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" If no impacts are identified or the resource is not present.*

14. HUMAN HEALTH AND SAFETY:
Identify any health and safety risks posed by the project.

This proposal should not affect human health or safety in the general vicinity of this proposal. The work will occur along an area that has good visual sight distances. Mitigation measures to prevent any unforeseen health or safety risks would include the signing of the area warning travelers that road work is in progress. Signage would need to meet MDOT standards.

15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:
Identify how the project would add to or alter these activities.

This project will not affect commercial and agricultural activities in the area.

16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:
Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.

This proposal will not affect the overall employment opportunities in the Centennial Valley.

17. LOCAL AND STATE TAX BASE AND TAX REVENUES:
Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.

No affects on the state tax base or revenues to the state are expected from this proposal.

18. DEMAND FOR GOVERNMENT SERVICES:
Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services.

This proposal will not affect the overall demand for government services in the area.

19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:
List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.

There currently aren't any zoning plans in place in the Centennial Valley.

20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:
Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.

Parts of the Red Rock Lakes NWR are designated wilderness areas and the BLM has the majority of the lands along the south border of the Valley as the Centennial Mountains Wilderness Study Area. This proposal will not affect access to or recreational use of these wilderness areas.

21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:
Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.

This proposal should not affect distribution of population or housing density in the Centennial Valley.

22. SOCIAL STRUCTURES AND MORES:
Identify potential disruption of native or traditional lifestyles or communities.

This proposal will have no long term or cumulative impacts on native or traditional lifestyles in the valley.

23. CULTURAL UNIQUENESS AND DIVERSITY:
How would the action affect any unique quality of the area?

The Centennial Valley is 40 miles long and 7 miles wide. There isn't any large population center in the valley except Lakeview which has a sparse population of mostly NWR employees. The summer population of ranchers is scattered throughout the valley with very little use in the winter due to the lack of accessibility. Use of the gravel to improve some of the existing roads and bridges may improve the currently rough roads and may improve water quality on roads where rutting and delivery of sediment is occurring. The proposal is small in acres and the gravel will be used locally to improve current problem areas on roads in need of attention. All of this at a reasonable cost to the tax payers of Beaverhead County.

24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:
Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.

If the decision notice approves this proposal and the project proceeds the County will remove approximately 10,000 cubic yards of gravel at a rate of $0.75 / cubic yard of gravel. The trust will generate $7,500.00.

EA Checklist Prepared By:	**Name:**	Tim Egan	**Date:**	8/9/11
	Title:	Dillon Unit Manager		

V. FINDING

25. ALTERNATIVE SELECTED:

I have selected Alternative A to give authorization to Beaverhead County for a gravel pit on state land located in Section 16-T14S-R1E.

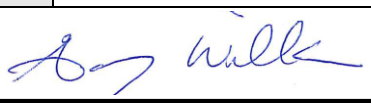
26. SIGNIFICANCE OF POTENTIAL IMPACTS:

Significant impacts are not anticipated as a result of the proposed activity. The gravel pit will encompass a small area (8 acres) in an area well suited as a gravel source. The pit is situated a sufficient distance from streams to provide adequate filtration and depth of the pit will be limited to avoid impacts to ground

water. Minor gravel amounts (1000 cu. Yd.) are anticipated to be removed each year under the 10 year license and reclamation/back sloping work is expected to occur annually.

27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

	EIS		More Detailed EA	X	No Further Analysis

EA Checklist Approved By:	**Name:**	Garry Williams
	Title:	Area Manager, Central Land Office
Signature: 	**Date**:	8/22/2011

Attachment I; Resource Report

Alaska Basin Gravel Source Development
Water Resource and Soils Effects Analysis

Prepared by J. Schmalenberg, Soil Scientist, Forest Management Bureau
June 24, 2011

Proposed Action

The following analyzes potential effects and recommends mitigation for the proposed actions of developing a gravel source on State owned land (T14S R 1E S16) in Alaska Basin area of the Centennial Valley. This proposal would permit approximately 8.37 acres for the development of no more than 10,000 cubic yards of material. A short segment of temporary road within the permit area would be necessary for gravel source development and extraction.

Potential Issues

The following issues were identified during project scoping and will be the basis of the following analysis:

- Project activities have the potential to capture near surface groundwater sources critical for baseflows within Antelope Creek.
- Project activities have the potential to produce and deliver sediment to Antelope Creek.

Analysis Methods

Potential effects to near-surface groundwater sources relied on groundwater well information from the Groundwater Well Information Center (http://mbmggwic.mtech.edu/). Spatial information for all well logs within the Upper Red Rock Creek 6th code HUC were obtained and input into GIS. The depth to static water level for each well site in the area was then subtracted from the ground surface elevation. These residual values were then modeled for the Upper Red Rock Creek watershed to depict the approximate elevation of the aquifer (*Map 1; Alaska Basin Groundwater Elevation (meters) and GWIC Data Points*). The geologic map of the Hebgen Lake 30'X60' quadrangle (O'Neil and Christiansen, 2002) was used to estimate depth to bedrock and further calibrate model results.

Once an accurate estimate of groundwater elevations were obtained, the depth to groundwater within the permit area could be calculated by using these modeled elevations and a 1 meter resolution Digital Elevation Model of the permit area. The estimated depth to groundwater within State owned land in shown in *Map 2* attached to this document.

A field review was conducted in May 2011 to review previous gravel source developments within the permit area, the potential for sediment production and delivery and to design potential mitigations.

Existing Conditions

Soils within the permit area are dominantly a clay loam texture with 1-2" of organic duff covering mineral soils and large alluvial deposits. These soils are moderately erosive which can be mitigated by standard BMP applications on road surfaces and disturbed areas. These soils have low productivities due to climatic conditions, elevation and precipitation. Due to this low productivity and current vegetation, the tract supports 286 AUM's or 0.45 AUMs/acre.

Antelope Creek enters State land on the southern boundary of the tract and flows north thru the southwestern quarter of the section before entering Red Rock Creek. Water use classification for Antelope Creek is currently listed as B-1. Red Rock Creek from the confluence of Antelope Creek to Upper Red Rock Lake is currently listed on the 2010

303D/303B list for partially supporting beneficial uses and is need of TMDL development. Probable causes for impairment include turbidity and streamside vegetation alteration from agricultural and grazing practices.

One water right claims a point of diversion on State owned land for 6.5 cfs from antelope Creek for the purpose of flood irrigation of 60 acres on adjacent private ownership with a priority date of July 19, 1900. This water right has been through the adjudication process and several substantive issues were noted, specially the flow rate and means of diversion. No ditch, diversion structure or sign of irrigation can be documented from aerial photos for this water right since approximately the mid 1950's. Communications are currently on-going with the claimant to resolve issues related to conveyance.

Prior gravel source developments within the permit area were field reviewed during a period when groundwater elevations were at or near historical maximums. Prior excavations for this development were determined to be approximately 8 feet below ground surface. No groundwater capturing was noted in these areas but small, isolated ponding was observed on previously compacted surfaces when infiltration capacities had been compromised. No sediment production or sign of active erosion from reclaimed areas within the permit area was noted during field review.

Environmental Effects

Mitigations
The following effects analysis assumes that all recommended mitigation and BMP's are applied when the gravel source is developed, the plan of development submitted to DEQ on behalf of the applicant is implemented effectively and reclamation plans are implemented in a timely fashion. The following are recommended mitigations and BMP's to reduce the probability of environmental effects.

1. Develop the permit area in a south to north direction to minimize both the time and size of disturbed area while maximizing the disturbed area's distance to the inboard ditch of the South Valley road.
2. Stock pile overburden and top soils on the south and western edges of the permit boundary to maximize the distance of potential sediment sources from Antelope Creek and to provide temporary berms for dispersion of any potential overland flow in extreme flood events if the channel of Antelope creek avulses where in enters the large alluvial fan southwest of the permit area.
3. All temporary haul roads within the permit area will meet road BMP's with all road drainage from these segments directed away from the inboard ditch adjacent to South Valley road. A sediment collection area has been designed within the plan of operation to effectively mitigate any road surface drainage from entering this inboard ditch.
4. Silt fence will be placed perpendicular thru the inboard ditch adjacent to South Valley road and continue to an elevation approximately three feet higher than the low point at which the silt fence traverses (Approximate 100'). This mitigation, in concert with mitigation #4, will insure no sediment produced within the permit area will have the potential to enter Antelope Creek.
5. Maximum depth of excavation from ground surface will not exceed 8 feet.
6. All areas of development will be reclaimed each fall prior to annual snowpack accumulation.

*Direct and Indirect Effect*s
Modeled groundwater elevations within the proposed permit area range from 17-20 feet. With the maximum excavation depth of 8 feet considered in conjunction with field observations of previous excavations to this depth with no signs of groundwater capture, the proposed action present very low levels of risk to groundwater sources within the project area.

Stockpiling of soil and overburden on both south and west boundaries of the permit area will provide the permit area temporary protection against a very low probability flood event in which overland flow is produced across the broad alluvial fan. The placement of this material would redirect any potential flow path around the permit area and thus minimize the probability of excessive erosion and sediment production from the permit area. The probability of channel avulsion in the upper reaches of Antelope creek is extremely low do to the channel type. Channel avulsions typically only occur rapidly in historic flood events (100+ year recurrence intervals) and/or very slowly over geologic time scales as a response to climate shifts. Given a ten year permit period and annual reclamation of the prior years' disturbances, the probability of a flood event to create channel avulsion and subsequent sediment delivery to Antelope Creek is again extremely low. Because of these factors and the above listed mitigations and BMP's, there is a very low risk of sediment delivery to Antelope Creek as a result of the proposed actions.
Indirect effects of this gravel source would include the ability of the Beaverhead County roads department to implement road maintenance projects and bring roads that's currently don't meet BMP's into compliance. This

material would potentially help to decrease sedimentation from road segments identified as chronic sediment sources into surface waters throughout the entire Upper Red Rocks Basin.

Cumulative Effects

The proposed permit area has been developed for gravel in the past and reclaimed areas would again become disturbed. When gravel source development is proposed in an area, the land-use of the area is also altered. Current the United States Fish and Wildlife Service leases the land for grazing, though the lease is largely held for restorative purposes and wildlife conflict mitigation. Still, the productivity capacity for grazing would be slightly reduced for a short duration during development and after reclamation.

Areas of reduced infiltration capacities from soil compaction resulting from previous gravel development would be reinforced if proposed actions are implemented. Natural restorative processes would start over once developed areas are reclaimed and no cumulative effect to soil resources is expected.

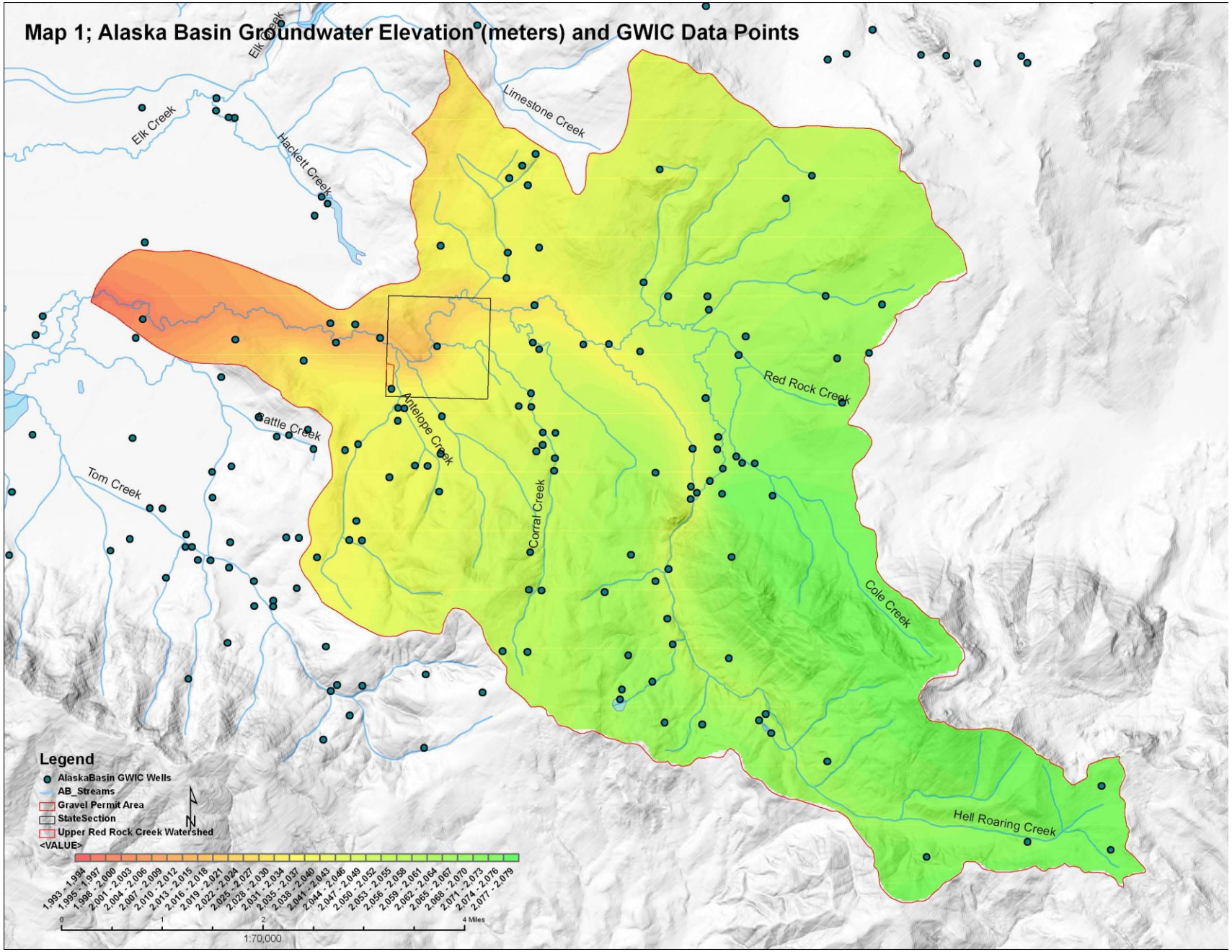
No cumulative effects to groundwater resources is expected to result from the implementation of the proposed actions with expected effects summarized in the direct and indirect effects section of this document.

No cumulative effects from sediment production or delivery is expected to result from the implementation of the proposed action due to the very low risk of sediment delivery to Antelope Creek during each gravel development period over the ten year permit.

References

Groundwater Information Center Online. Information accessed December 2010. Montana Bureau of Mines and Geology, Montana Tech of the University of Montana. 1998-2011. http://mbmggwic.mtech.edu/.

O'Neil, J.M. and R.L. Christensen, 2002. Geologic map of the Hebgen Lake 30'x60' quadrangle, Beaverhead, Madison, and Gallatin counties, Montana, Park and Teton counties, Wyoming, and Clark and Fremont counties, Idaho. Montana Bureau of Mines and Geology, Open-File Report 464, Butte, MT.


Map 1; Alaska Basin Groundwater Elevation (meters) and GWIC Data Points
Elk Creek
Elk Creek
Limestone Creek
Hackett Creek
Red Rock Creek
Antelope Creek
Cattle Creek
Tom Creek
Corral Creek
Cole Creek
Hell Roaring Creek
Legend
AlaskaBasin GWIC Wells
AB_Streams
Gravel Permit Area
StateSection
Upper Red Rock Creek Watershed
<VALUE>
1,993 - 1,994
1,995 - 1,997
1,998 - 2,000
2,001 - 2,003
2,004 - 2,006
2,007 - 2,009
2,010 - 2,012
2,013 - 2,015
2,016 - 2,018
2,019 - 2,021
2,022 - 2,024
2,025 - 2,027
2,028 - 2,030
2,031 - 2,034
2,035 - 2,037
2,038 - 2,040
2,041 - 2,043
2,044 - 2,046
2,047 - 2,049
2,050 - 2,052
2,053 - 2,055
2,056 - 2,058
2,059 - 2,061
2,062 - 2,064
2,065 - 2,067
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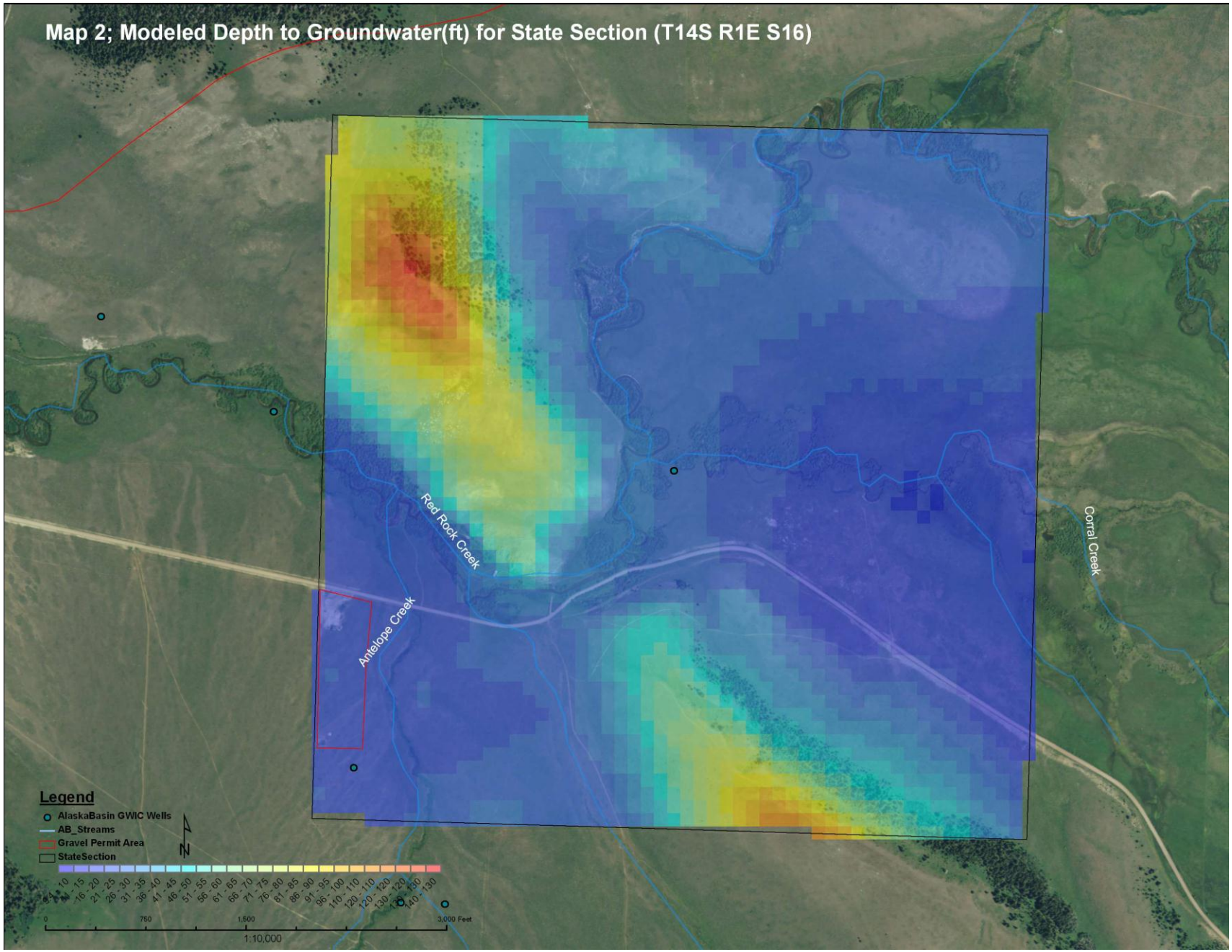
2,071 - 2,073
2,074 - 2,076
2,077 - 2,079
0
1
2
4 Miles
1:70,000


Map 2; Modeled Depth to Groundwater(ft) for State Section (T14S R1E S16)
Red Rock Creek
Antelope Creek
Corral Creek
Legend
AlaskaBasin GWIC Wells
AB_Streams
Gravel Permit Area
StateSection
N
0
750
1,500
3,000 Feet
1:10,000