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# Categorical Use Attainability Analysis for Recreation

## Response to Comments for Comment Period Ending September 30, 2013

January 28, 2014

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**WYOMING**

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## 1.0 SUMMARY

The State of Wyoming has two designations for recreational use of surface waters: primary contact recreation and secondary contact recreation. Primary contact recreation waters are those where recreational activities would be expected to result in immersion in or ingestion of the water. Secondary contact recreation waters are those where contact with water is expected to be either incidental or accidental and not result in either immersion in or ingestion of the water. During the 2007 revision of Wyoming's Surface Water Quality Standards, waters not listed in Table A of the Wyoming Surface Water Classification List were designated for secondary contact recreation. These designations were disapproved by the United States Environmental Protection Agency (EPA) because a use attainability analysis (UAA) had not been completed to show that primary contact recreation was not attainable.

Wyoming is the third driest and least populous state in the U.S. As a result, Wyoming has thousands of miles of streams that do not support primary contact recreation because there is not enough water to support immersion (full body contact) activities and there is little potential for children or other members of the public to ingest small quantities of water from the stream because the stream is not located near recreation sites or areas frequented by children or the public. To determine which streams in the state do not support primary contact recreation and where primary contact recreation is not an existing use, the Wyoming Department of Environmental Quality, Water Quality Division (WDEQ/WQD) developed a categorical UAA using Geographic Information Systems (GIS), over 850 field verification sites, and public feedback.

On August 6, 2013, the *Draft Categorical Use Attainability Analysis for Recreation* was released through a public notice. In addition, a web map was made available to display proposed primary and secondary contact recreation designations for 100k streams along with the datasets that were used in the analysis. The UAA identified streams with mean annual flows less than 6 cfs as those that lack sufficient flow to support primary contact recreation (i.e., ephemeral, small intermittent, and small perennial streams). These low flow streams were designated for secondary contact recreation, unless they occurred in areas frequented by children and/or the public. Data layers representing populated places, schools, campgrounds, recreation sites, natural areas, rest areas, National Parks and Recreation Areas, State Parks and Historic Sites, and Wildlife Habitat Management Areas were used to identify low flow streams that may be used for primary contact recreation. Other primary contact recreation streams were identified by assigning weights to streams segments based on distances from campgrounds, recreation sites, natural areas, rest areas, National Parks and Recreation Areas, State Parks and Historic Sites, Wildlife Habitat Management Areas, trailheads, dispersed campsites, roads, trails, and whether the stream was located on public land. Stream segments designated for primary contact recreation were extended to the nearest terminus, tributary, or nearest primary segment to minimize the occurrence of short, isolated reaches.

The August 6, 2013 public notice outlined that the state needed assistance from the public to identify streams within Wyoming that are used for primary contact recreation that were not identified as primary in the draft UAA. The public notice specifically identified areas such as pools or other deep water areas that may occur on low flow streams that may be used for primary contact recreation.

WDEQ/WQD also requested assistance in identifying any potential issues with the datasets used in the draft UAA.

WDEQ/WQD did not receive any comments that indicated the presence of pools or other deep water areas on “low flow” streams that were used or have been used for primary contact recreation. WDEQ/WQD did receive comments indicating that the access datasets were designating too many dry draws and gullies (i.e., low flow streams) for primary contact recreation that were not used for nor have the potential to be used for primary contact recreation. Based on this feedback, WDEQ/WQD removed the 1.0 mile and 2.0 mile weighted buffers around established recreation sites, trailheads and dispersed campsites. WDEQ/WQD also received comments that the extension process was capturing too many “low flow” streams that were not used for primary contact recreation. Based on these comments, WDEQ/WQD modified the extension process to only include isolated secondary segments and braided channels. WDEQ/WQD also received comments that site-specific flow information and/or site-specific UAAs that were submitted to WDEQ should be incorporated into the *Categorical UAA for Recreation*. WDEQ/WQD incorporated USGS flow data and other site-specific flow data into the Categorical UAA where it was available. WDEQ/WQD also received comments about whether BLM recreation sites were captured in the *Categorical UAA for Recreation* and some questions about whether some of the “natural areas” that were included in the draft UAA were actually recreation sites. Based on these comments, BLM recreation sites (i.e, campgrounds, trailheads, recreation areas, and dispersed campsites) were added to the UAA and two natural areas that were not established recreation sites were removed. Additionally, “pipelines” identified in the NHD dataset were removed, as these are not surface waters.

The following response to comments addresses comments that were received during the August 6 to September 30, 2013 comment period. The full text of the comments received during the comment period can be found in Appendix A. Site-specific UAAs received by WDEQ that were incorporated into the *Categorical UAA for Recreation* can be found in Appendix B.

## 2.0 COMMENTERS

Sublette County Conservation District  
United States Department of Agriculture, Forest Service, Black Hills National Forest  
United States Department of Agriculture, Forest Service, Intermountain Region  
Wyoming Mining Association  
Peabody Energy  
United States Environmental Protection Agency, Region 8  
Wyoming Association of Conservation Districts  
Wyoming Department of Agriculture  
Western Fuels Association, Inc.  
Campbell County Conservation District  
Meeteetse Conservation District  
Lower Wind River Conservation District  
United States Department of Agriculture, Forest Service, Medicine Bow-Routt National Forests and  
Thunder Basin National Grassland

Wyoming Farm Bureau Federation  
Dubois-Crowheart Conservation District  
Niobrara Conservation District  
Justin Cauldill, Wyoming Department of Agriculture

### 3.0 COMMENTS AND RESPONSES

#### 3.1 General Comments

**Entity:** **USDA Forest Service Intermountain Region**

**Comment:** “Editorial – p. 28, section 3.5, paragraph 1, sentence 3 I believe should say 160,000 not 170,000.”

“Editorial – p. 34, section 6.0, paragraph 1, last sentence the number 77,946 514 I believe should be fixed...my guess it should read 77,514.

**Response:** WDEQ/WQD has edited the incorrect text.

**Entity:** **USDA Forest Service, Intermountain Region**

**Comment:** “Food for thought – consider streams temperature as a means for isolating primary...probably too late now and I know this was considered indirectly with a conclusion there’s still a chance for ingestion but I think that risk is very low until streams temperature warm up mid-way down the falling limb of streams with a snowmelt dominated hydrograph (late July or so)...the temperature data Dan Issacs, RMRS, is collecting may be a good data set..details at:  
[http://www.fs.fed.us/rm/boise/AWAE/projects/stream\\_temp/stream\\_temperature\\_climate\\_aquatics\\_blog.html](http://www.fs.fed.us/rm/boise/AWAE/projects/stream_temp/stream_temperature_climate_aquatics_blog.html)

**Response:** WDEQ has attempted to address the limited use of waters for primary contact recreation due to low air temperatures and low water temperatures through adoption of a primary contact recreation season, May 1 – September 30. While many mountain streams may remain too cold and are not likely to be used for primary contact recreation during the early months of the primary contact recreation season, it is not practical at this time to adopt multiple recreational seasons throughout the state based on climatic differences.

**Entity:** **United States Environmental Protection Agency**

**Comment:** “The U.S. Environmental Protection Agency (EPA) has reviewed the Wyoming Department of Environmental Quality’s (WDEQ) August 6, 2013 public notice of the Draft Categorical Use Attainability for Recreation and supporting documentation. The draft UAA uses Geographic Information System (GIS) data to identify streams with insufficient flow to attain a primary contact recreation use. In general, the EPA’s preliminary thinking is that WDEQ’s approach would be consistent with 40 CFR §

131.10(g)(2). We appreciate the efforts of WDEQ to address our comments through the three years of dialogue about this project.

The EPA regulations at 40 CFR part 131 interprets and implements Clean Water Act (CWA) section 101(a)(2) and 303(c)(2)(A) to require that the uses specified in section 101(a)(2) of the CWA, which includes “recreation in and on the water,” are presumed attainable unless a state or tribe affirmatively demonstrates through a UAA that the use is not attainable as provided by one of the six factors at 40 CFR § 131.10(g). To support an attainability decision under 131.10(g), the EPA’s suggested approach is for states to consider a suite of factors, such as actual use, existing water quality, water quality potential, access, recreational facilities, location, safety considerations, and physical conditions. In Wyoming, currently all waters of the state are designated for primary contact during the summer recreation season (May 1 through September 30) unless a site-specific UAA was completed and the use change to secondary contact recreation was approved by the EPA. The scope of the Draft Categorical UAA is limited to low flow streams (mean annual flow < 6 cubic feet/second). Lakes, reservoirs, and ponds are not included in the UAA and remain designated for primary contact recreation. In addition, no full recreational use removals are proposed. Where the GIS data layers representing flow, populated places, schools, campgrounds, and recreation areas indicate a stream cannot attain primary contact recreation, the state is proposing to adopt secondary contact recreation. The practical effect of changing the designated use from primary to secondary contact recreation is that the applicable *E. coli* criterion changes from a geometric mean of 126 organisms per 100 milliliters to a geometric mean of 630 organisms per 100 milliliters during the summer recreation season.

Our understanding is that following the close of the current comment period (September 30, 2013), WDEQ will make revisions based on comments received and provide another public comment period. The EPA is particularly interested in seeing the public feedback on pools within the low flow streams addressed by the UAA that are used for or would support primary contact recreation. Our understanding is that WDEQ proposed primary and secondary use designations based on the best information available to the state, but feedback from people that live near the streams at issue is critical in making the right environmental decision. We anticipate that some parties may take issue with the conservatism of the model, and we want to emphasize that such conservatism was a key factor in the EPA supporting this innovative approach, both in terms of the flow methodology and the buffer zones around populated areas and areas where children may be present.

Primary contact recreation typically includes activities where ingestion is likely and there is a high degree of bodily contact with the water, including swimming, bathing, wading and water play by children. Children may be more exposed and/or more sensitive to pathogens in recreational waters. Children exhibit behaviors that increase their exposure to environmental contaminants, and the immature immune systems of children can also leave them particularly vulnerable to the effects of environmental

agents. Therefore, the EPA supports WDEQ's use of a buffer system that appropriately protects this vulnerable population.

As WDEQ acknowledges in the UAA, recreational uses change over time. This is one reason why it is important the public remain engaged after WDEQ completes its public process for this UAA. Pursuant to the Wyoming Water Quality Rules and Regulations, Chapter 1, Sections 33 and 34, 'any person at any time' may petition WDEQ for a designated use change and we encourage parties to work closely with WDEQ to ensure sufficient data are collected and submitted.

In summary, the EPA's preliminary thinking is that WDEQ's draft approach for identifying streams with insufficient flow to support primary contact recreation use would be consistent with 40 CFR § 131.10(g)(2). The EPA will consider the public comments and the final submission of the state prior to making a final decision under CWA § 303(c)."

**Response:** WDEQ appreciates EPA's preliminary support of the Categorical UAA for Recreation. As noted in this Response to Comments, WDEQ did not receive any comments indicating that there were any pools located on low flow streams that are used for or may support primary contact recreation. Based on the feedback that was provided to WDEQ, most of the streams with mean annual flows less than 6cfs are ephemeral or intermittent and rarely have any water during the primary contact recreation season.

The feedback received during the comment period that ended September 30, 2013, however, did indicate that the UAA was incorporating too many "low flow" streams (i.e, dry draws and gullies) as primary due to the access criteria and the extension process. As a result, WDEQ has modified the access criteria to capture low flow streams within 0.5 miles of recreation sites. The 1.0 mile buffer around populated places and schools remains unchanged in the revised UAA, as do the protection for all waters within federal and state parks. The UAA remains consistent with EPA's feedback on the UAA and remains conservative and protective of areas where children may be present.

**Entity:** **Wyoming Association of Conservation Districts**

**Comment:** "The Wyoming Association of Conservation District[s] has reviewed the August 6, 2013 public notice of the Draft Categorical Use Attainability Analysis for Recreation and supporting documentation. The Association welcomes the opportunity to review this draft and its associated criteria and commends the Department of Environmental Quality for this innovative approach to addressing the recreation use support designations of Wyoming's waters. As DEQ is aware, the local Conservation Districts have invested considerable resources to assist with the development of this model and to assist DEQ in verifying the accuracy level based on collection of data and information. Specifically, the Districts collected site specific data and information on 720 randomly selected sites to validate the model assumptions.

The Association has received feedback from districts who have reviewed their field data collected on the randomly selected sites in 2010 to the categorization presented in the UAA model and they have found a high level of accuracy and correlation between the statewide UAA and the site specific data collected. In fact, one district reported a 100 percent accuracy level. WACD believes there will be isolated incidents where a more thorough site specific UAA may be necessary however this will be limited.”

“Again, DEQ should be commended for this effort. We look forward to continue to work with DEQ on the mutual goal of maintaining and improving Wyoming’s watershed health. This effort will ensure that the time, energy and resources are spent in an appropriate manner to protect the human health of Wyoming’s citizens.”

**Response:** WDEQ appreciates WACD’s involvement with and assistance in developing the Categorical UAA for Recreation. WACD has been invaluable in outreaching to the local districts, both during the field verification phase and during the public outreach phase. The surveys conducted by the local districts have made the UAA a much better and more accurate product.

**Entity:** **Wyoming Department of Agriculture**

**Comment:** “The WDA supports the WDEQ Draft UAA for Recreation, which identifies streams in the state not supporting primary contact recreational activities such as swimming based on insufficient flow and distance from recreation sites frequented by the public. The UAA provides a significant opportunity to designate water bodies as secondary points of contact recreation as intermittent, ephemeral and smaller water bodies that truly are not primary points of contact recreation. If approved this UAA for Recreation model would greatly decrease the need for future formal UAA’s. We also believe the design of this model adequately errs on the side of primary contact recreation when evaluating streams for human protection.

We strongly support WDEQ in the development of their proposed UAA Model for Recreation. We believe the approval of this strategy will not only benefit the general public through the continued listing of primary recreation contact streams, but also through the decreased need of future UAA’s on streams having very little to no likelihood for being primary contact streams. We appreciated the opportunity to comment and are willing to assist in any way possible.”

**Response:** WDEQ appreciates the support of WDA in this effort.

**Entity:** **Campbell County Conservation District**

**Comment:** “The Campbell County Conservation District (CCCD) supports the model’s cull of all the ephemeral draws, coulees and any physiographic feature (surface water segments) that would provide a catchment for water, snow or other precipitation event from the Primary Contact Recreation designation in Campbell County. The effect of the model is widespread and uniform in its application in Campbell County, and we support its use

and reclassification therefore. We especially support the WDEQ reclassification of the Middle Prong of Wild Horse Creek.”

**Response:** WDEQ/WQD appreciates the support of CCCD in this effort.

**Entity:** **USDA, Forest Service, Medicine Bow-Routt National Forests and Thunder Basin National Grassland**

**Comment:** “First and foremost, we would like to offer overall support for the effort to categorically designate appropriate water bodies on Medicine Bow National Forest and Thunder Basin National Grassland for primary and secondary contact recreation. This effort is critical in order to best manage water quality by recognizing the vast differences in human health risks associated with the different types of waters and recreational uses on the Forest.”

**Response:** WDEQ/WQD appreciates the support of the Medicine Bow National Forest and Thunder Basin National Grassland in this effort.

**Entity:** **Wyoming Farm Bureau Federation**

**Comment:** “On behalf of the 2,700 agricultural producers who are members, the Wyoming Farm Bureau Federation would like to provide the following comments on the proposed August 6, 2013 draft Categorical Use Attainability Analysis (UAA) for Recreation. Water quality issues are important to our members who utilize surface and groundwater sources for food production as well as many of the recreational aspects other citizens appreciate about Wyoming. Achieving a common sense process to protect our waters makes economic sense to all of the citizens.

In addition to members who make their living producing food for the nation, many of them participate on their local Conservation District Boards and work with those local Boards to ensure proper use and husbandry of the State’s natural resources.

We support the efforts of the Water Quality Division to develop a categorical UAA to determine appropriate protection levels for Wyoming surface waters. A scientific process to accurately classify Wyoming water bodies for classification as primary and secondary contact recreational waters on a statewide basis makes sense. Spending valuable resources to protect a water body as a primary contact water body when it meets the criteria for a secondary contact water body will divert those resources away from a more efficient application.

Water bodies which are intermittent or ephemeral and do not meet minimum flow levels to provide for primary contact should be excluded from those classifications.

In addition we have reviewed the draft comments of the Wyoming Association of Conservation Districts, many of whose members have worked on water quality issues for many years and some who have provided assistance with data for development of the UAA model, and we concur with their comments and suggestions on the UAA.

Thank you for this opportunity to comment.”

**Response:** WDEQ/WQD appreciates the support of the Wyoming Farm Bureau Federation. The practical outcome of the Categorical UAA for Recreation is that most ephemeral, intermittent, and small perennial streams will be designated for secondary contact recreation, or approximately 76% of the 100k NHD streams. This effort will save considerable time and resources by reducing the number of site-specific UAAs that will need to be conducted.

### 3.2 Designating Waters with Little to No Flow for Primary Contact Recreation

**Entity:** Sublette County Conservation District

**Comment:** “There does appear to be one issue which is apparent in the model’s output, and that is the issue of assigning streams with extremely low predicted flows as Primary Recreation rating via the ‘Access’ test.”

“The difficulty arises when streams with essentially no predicted flow (in reality: dry swales and draws) are assigned Primary status via the Access test.

The very first test in the model is a test for flow, and thus is it counterintuitive to assign Primary status to “streams” with no flow! To be Primary, flow must come first!

To address this problem, we would suggest the following alteration/addition to the model:

Introduce a test for ‘negligible flow’ to the model which would preclude any stream with extremely low annual mean flow from earning points in the Access test.

This could be done as another step in the model, or integrated into the point scheme of the access test (e.g., if there is negligible flow, subtract 40 points from the Access test).

We would suggest some additional modeling and field checking of the revised model output to understand what the lower annual mean flow may be. We understand that ‘negligible flow’ needs defined, but would argue that it is an important inclusion in the model.

Perhaps the definition of ‘negligible flow’ should be 1.0 cfs mean annual flow, or perhaps it should be 0.1 cfs. Modeling, coupled with field verification, will help identify a threshold value which allows the model to output realistic classifications in those extremely low flow drainages; even those that happen to be in close proximity to those variables tested in the Access portion of the model.

The Sublette County Conservation District would be pleased to help identify and field verify an altered model using several of the streams we can readily identify as mis-categorized as Primary because of the missing ‘negligible flow test’ we propose to be included in the model. As noted earlier, we are anxious to see a Statewide UAA implemented. But we do believe that the results, particularly at the lower end of flows, must be reasonable in order to maintain credibility.”

**Entity:** **Black Hills National Forest**

**Comment:** “The Categorical Use Attainability Analysis for Recreation (WDEQ, August 2013 Draft) identifies streams in the state of Wyoming as primary or secondary contact recreation waters. After review of the map included in the document, a number of streams on the Black Hills National Forest are identified as primary contact recreation waters. Most of these streams have inadequate flow to be labeled as primary and should be categorized as secondary contact recreation waters. Streams are weighted in regards of proximity to roads and trails and whether they are located on public lands. While this strategy is an improvement in regards to previous categorizing system, it is still resulting in the designation of primary contact recreation water in situations where the stream is ephemeral or intermittent. There were no streams labeled as a secondary contact recreation water when it should be labeled as primary.

The Black Hills National Forest is currently updating their streams layer. As a result, field visits have been conducted to many streams to observe and correctly label a stream as ephemeral, intermittent, or perennial. Based on flow type alone, many of the streams designated as a primary contact recreation water, are categorized as ephemeral or intermittent. The following table and attached map includes the updated stream flow data and highlighted those streams which have perennial flow and could remain designated as a ‘primary contact recreation water’.”

Table included 74 streams, all of which were identified for primary contact recreation by the August 2013 Draft Categorical Use Attainability Analysis for Recreation. Of the 74 streams, the Black Hills National Forest suggested that 18 of the streams be designated for primary contact recreation based on perennial flows, perennial/intermittent flows, and accessibility to the public. The remaining 56 streams were identified as not supporting primary contact recreation due to insufficient stream flows (i.e., ephemeral, intermittent, small perennial streams) and limited accessibility.

See Appendix A, Figure A-2 for full comment text.

**Response:** DEQ has limited the number of streams with insufficient flow to support primary contact recreation that are identified as primary in the *Categorical UAA for Recreation* by adjusting the access criteria and extension process. These changes resulted in approximately 6% fewer “low flow” streams being identified for primary contact recreation. Specifically, WDEQ/WAD removed Wildlife Habitat Management Areas from the established recreation areas datasets based on conversations with users of these areas and the Wyoming Game and Fish Department who manages these areas;

based on this feedback, Wildlife Management Areas are now treated similarly to other publicly accessible lands rather than being treated like established recreation areas. WDEQ also removed the 1.0 and 2.0 mile weighted buffers around the established recreation areas and other recreation areas since these buffers were unnecessarily capturing “low flow” streams that are not used for recreation nor are located near established recreation areas. The access areas that remain (populated places, schools, parks, recreation sites, etc.) are those areas where children may have access to streams. In these areas, waters need to be protected for primary contact recreation due to the possibility of children ingesting water, irrespective of how much water is present in the channel.

**Entity:** Lower Wind River Conservation District

**Comment:** “In the discussion of mean annual flow for 24k streams (part 3.5, page 28), we agree that ‘streams only present in the 24k NHD do not have sufficient flow to support primary contact recreation’. Further, in precipitation zones of < 10 inches, these ‘streams’ are the dry draws and gullies that only flow in infrequent and unusual precipitation events. Thus, there is no flow and these ‘streams’ should remain secondary irrespective of access.”

**Entity:** USDA, Forest Service, Medicine Bow-Routt National Forests and Thunder Basin National Grassland

**Comment:** “Access and Recreation Areas: The majority of streams designated by the access and recreation areas methodology are streams where we generally have not observed primary contact recreation activities on the Forest and Grassland. Even though access and/or recreation areas provide the opportunity for primary contact recreation activities, it has been our observations that unless there are sufficient streamflows these activities rarely if ever occur in the streams designated in the draft as primary contact recreation due to access.

Therefore, it appears that the streams designated as primary contact recreation due to flow provide the best indication of streams we have observed with actual primary contact recreation activities occurring on the Forest (see #1 and 2 above). It would be interesting and informative to analyze and display the proportion of streams designated as primary contact recreation due to flow, which would also meet the access and recreation designation methodology. Presumably if our observations of recreation use on the Forest are correct, the vast majority of access and recreation designation streams would be streams with sufficient streamflows to support the designation.”

**Response:** As identified in Wyoming Surface Water Quality Standards, Section 2(b)(liii), primary contact recreation “means any recreational or other surface water use that could be expected to result in *ingestion* of the water or immersion (full body contact).” As a result, WDEQ feels it is appropriate to designate all waters that are easily accessible by children, regardless of the size of the water, for primary contact recreation because they may inadvertently ingest the water. WDEQ did modify some of the primary by

access datasets to limit the number of “low flow” streams that will be designated for primary contact recreation by focusing only on those areas in immediate proximity to towns, schools, and recreation sites and also by modifying the extension process. These changes resulted in approximately 6% fewer “low flow” streams miles being designated for primary contact recreation by the UAA.

**Entity:** **Dubois-Crowheart Conservation District**

**Comment:** “In regards to the UAA model, I have listed the Dubois-Crowheart area concerns for your review. Reg Phillips, our chairman, and I sat down and discussed that these should not be listed as primary as most are ephemeral or have very low flow. There are still others in the area, many draws and gulch’s without names, that would only be listed as primary due to extension which is unnecessary as well. To work through the process to get these watercourses out of primary designation is going to be a huge undertaking. Another issue that concerns us is that several of these draws are listed as primary due to access (BLM and State lands) and that the designation could have an impact of multiple uses such as grazing, recreation, and timber harvest. We are hoping for a faster way to reclassify these watercourses. Is there a light at the end of the tunnel for faster processing?”

Byrd Draw, Carson Draw, Pease Draw, Lake Draw, Horse Draw, Alkalai Creek, Little Alkalai Creek, Mason Draw, Little Horse Creek (Pony Creek), Tappan Creek, Rifle Range Draw, Chimney Rock Gulch, Wagon Gulch, Saddle Horse Draw, Lime Kiln Draw, Diamond Draw

Please respond to both Reg and I with your response and what we need to do on our end at your earliest convenience.”

**Response:** WDEQ/WQD has made some adjustments to the Categorical UAA for Recreation that may result in some of the creeks and draws identified above being designated for secondary contact recreation. As mentioned above, WDEQ/WQD modified some of the primary by access datasets to limit the number of “low flow” streams that will be designated for primary contact recreation by focusing only on those areas in immediate proximity to high density housing areas, schools, and recreation sites and also by modifying the extension process. These changes resulted in approximately 6% fewer streams miles being designated for primary contact recreation by the UAA.

These changes will result in only portions of Saddle Horse Draw, Wagon Gulch, Chimney Rock Gulch, Mason Draw, Byrd Draw, Lime Kiln Draw, and Carson Draw that flow through high density housing areas being designated for primary contact recreation. Not treating Wildlife Habitat Management Areas as parks results in Lake Draw, Horse Draw, Pease Draw, and Little Alkali Creek being designated for secondary contact recreation. Little Horse Creek and Tappan Creek are primary due to flow, although the EROM mean annual flow estimates are very close to the 6 cfs threshold (all less than 9 cfs), so these streams would be good candidates for site-specific UAAs demonstrating that there is insufficient flow to support primary contact recreation.

Insufficient flow could be demonstrated through quantitative means such as flow and/or depth measurements during the primary contact recreation season or qualitative means via photographs and description of the flow regime during the primary contact recreation season.

### 3.3 Access Criteria and Datasets

**Entity:** Black Hills National Forest

**Comment:** "Section 4.2, Table 1

The table: Datasets, buffers, and weightings used in the categorical UAA for recreation, lists that streams within the boundary of public lands are given a weighting of 5. This does not take into account actual accessibility to the stream from a nearby road, trail, campground, or other access point. Many streams on the Bill Hills National Forest are in steep draws where access is not easy and unlikely to occur. Thus, the weighting of the streams could be overestimated by applying this dataset."

**Response:** WDEQ included the public lands dataset to exclude any recreation areas that may not be located on public land, since these areas are not very likely be used for primary contact recreation. Since the UAA access criteria has been modified to only incorporate dispersed campsites and trailheads that are within 0.25 miles of a road and that are located on public land, the UAA should now only designate streams that are truly accessible by the public.

**Entity:** Black Hills National Forest

**Comment:** "Section 4.2.4, page 32

The data used for USFS roads should only include those roads currently open for motorized vehicle use; this data is available on the Black Hills National Forest website and on the Motor Vehicle Use Maps. All other roads not on the map, regardless of their suitability rating, are closed to motorized vehicles. Closed roads are open to non-motorized vehicle use, although the probability of use of closed roads are less than the use of open roads and should be weighted accordingly."

**Response:** WDEQ used the roads that are accessible to passenger vehicles and seasonal access roads open to passenger vehicles. These datasets were confirmed with the Black Hills National Forest after this comment was made and none of these roads are "closed" during the primary contact recreation season.

**Entity:** Wyoming Mining Association

**Comment:** "The use of census blocks to determine the population accessibility to streams can be misleading and cause stream segments to be classified incorrectly. The census blocks do not provide a true representation of the actual population density within the block. An improvement could be made to this determination factor through the use of aerial photography which is readily available via the internet. Aerial photography could be used as a final step to determine the census block accuracy around the perimeter where the blocks generally overstate the actual population density."

**Entity:** Peabody Energy

**Comment:** “It is difficult to determine how the WDEQ/WQD arrived at the Primary Contact Due to Access classification for a number of streams in the Gillette and Hanna areas based on the criteria listed in the text and since the census blocks are not shown on the electronic map included within the DCUAA. It is probable that there are many more examples of a similar nature. Many of the streams listed as Primary Contact Due to Access are more than 1.0 mile from populated areas. Rather than using census blocks that are created to improve the efficiency of census data acquisition, and which can grossly misrepresent population density, it is better to use aerial photo information to determine Primary Contact Due to Access classifications since that information is more determinative of population density, less subjective, and is readily available on the electronic map.”

**Response:** WDEQ included all of the datasets used in the analysis within the web map. Moreover, each individual stream segment contained attribute information indicating the weightings provided by each of the access datasets. As such, it is possible to identify why each individual stream segment was included within the Primary Contact Due to Access dataset. Entities that need assistance with the web map or would like access to individual datasets should contact WDEQ.

There are more than 10,500 census blocks that were identified as having more than 55 persons per square mile in the UAA. While many of these areas may be contiguous and represent one area or community, it is not practical to evaluate each block against aerial photography. Moreover, aerial photography will only give housing density, rather than population density, which is what WDEQ used in the analysis. For the particular situation presented by Peabody Energy and Western Fuels Association, where the boundaries of a particular census block were inaccurate, WDEQ adjusted the boundaries of that particular area to more accurately reflect the inhabited area.

**Entity:** Wyoming Association of Conservation Districts

**Comment:** “Page 30: Section 4.2 Data Layers, Buffers, and Weightings and Table 1. *Datasets, buffers, and weighting used in the categorical UAA for recreation*

COMMENT:

*‘Buffer distances were based on a general understanding of distances children and/or members of the public travel from roads, trails, and recreation sites.’*

WACD agrees with the datasets and the majority of the buffers of various distances methodology used to identify default primary 24k areas and 100k NHD streams for primary contact recreation. However, WACD questions the 2.5 Mile Buffer distance and weighting criteria for Established Recreation Areas, Trailheads and Dispersed Campsites which overlap with private lands and exhibit low flows. WACD believes that in these instances where 2.5 mile buffers overlay with private lands, and exhibit less than 2 cfs the weighting criteria’s should be 0.”

**Entity:** Lower Wind River Conservation District

**Comment:** For the discussion of access, we again believe that in precipitation zones of < 10 inches intermittent and ephemeral streams have no flow especially during the recreation season. School children and the public do not travel to these 'streams' to swim because there is not enough or no water. These dry draws and gullies are not necessarily more accessible because they are on federal or state land. In many cases, they are less accessible due to private ground or rough terrain. The weighting for access due to public land is too high. Further, when people fish and swim in our area, they go to recreation destinations (lakes or streams that have fish and water in which to swim). In the Lower Wind River Conservation District, 50 'streams' were added as primary due to access. 'Streams' in the 24k NHD data set in low precipitation zones (<10 inches) need to be designated secondary streams."

**Response:** Based on feedback received during the comment period that ended September 30, 2013, WDEQ has modified the access criteria for established recreation areas and other recreation areas to focus more directly on areas where children may have access to low flow streams. The access buffers now include only 0.5 mile buffers around established recreation areas (campground, recreation sites, natural areas, and WYDOT rest areas) and other recreation areas (trailheads, dispersed campsites located on public land and within 0.25 miles of a road). While the public and children may not travel to low flow streams located in these areas to recreate, children may recreate in low flow streams in these areas due to their proximity to recreation sites. While there may not be water in some of these low flow streams most of the time, because of the proximity of these streams to recreation sites and the potential of children to play and ingest water from these streams, it is appropriate to protect them for primary contact recreation.

**Entity:** Niobrara Conservation District

**Comment:** "I am in Niobrara Conservation District and had some questions on the primary classification of the Niobrara River on the web map. I understand the primary classification in the area of Lusk and Manville due to the population density. However, the rest of the river, to the NE state line, is classified as primary due to either flow or extension. When you click along the river east of Lusk the information box states a flow ranging from 6.84 cfs E. of town up to 21.64 cfs at the Duck Creek confluence, then down to 2.698 cfs as Van Tassel then back up again to 30.778 cfs at the state line. I was wondering where these flow rates come from? The Niobrara River is dry and only flows in response to precipitation events through the town of Lusk and east for several miles. The only flow station I could find was a USGS station at the state line which ran from 1956 to 1994. The highest discharge (by water year) was 5.77 cfs in 1974 with most others around 2-3 cfs. I also see on the map where there is a flow of 21.64 at the confluence with Duck Creek down to 2.6 at Van Tassell then back to 30.77 at the state line. This covers approximately 11 stream miles. I wondered about this much fluctuation in that distance with only the input of Van Tassell Crk."

**Response:** Based on the flow information provided above and USGS gage 0645400 (Niobrara River at the Nebraska State Line), the 30.8 cfs flow of the Niobrara River just downstream of the gage is likely an error. As such, WDEQ adjusted the flow value of that segment of the Niobrara based on the mean annual flow of the USGS gage site. For the remaining portions of the Niobrara with EROM mean annual flows of approximately 6 cfs and that are not near populated places, schools, or recreation sites, WDEQ/WQD recommends submitting a site-specific UAA demonstrating that there is not sufficient flow to support primary contact recreation.

**Entity:** **Niobrara Conservation District**

**Comment:** "ID # 20489 & 20490 are primary by access. The map shows a Natural or Recreation Area between the 2 draws. Both streams are weighted 100 for the Natural or Recreation area, with no other weighted factors. These are both on private land with no county road access. I was wondering what the Natural or Recreation Area was? Both of these have associated extensions as well.

ID #19254 & 19255 are primary by access. They show weighted for Public Land 5, Natural or Recreation Area 3, Road 5. Again, I do not know what the Natural or Recreation Area is. These, as well, have extensions associated with them."

**Response:** WDEQ/WQD determined that these four segments were in proximity to the Lance Creek Fossil Area, which was included as a natural area in the Natural Area Tourist Visitation Places for Wyoming at 1:100,000 from the Wyoming Geographic Information Science Center dataset. Upon further inspection and information from the Niobrara Conservation District, it was determined that the fossil area is a 558 mi<sup>2</sup> area where fossils have been found, not a recreation area. The actual site of the natural area included in the *August 2013 Draft Categorical UAA for Recreation* was located on private land with no county road access. Based on this information, WDEQ/WQD removed this site from the dataset.

**Entity:** **Justin Caudill, Wyoming Department of Agriculture**

**Comment:** "Just checking to see if BLM's info was added to the established recreation areas for the state draft UAA document. Here are two rec. areas in the Rock Springs Field Office; Sweetwater Guard Station, Sweetwater Bridge. If these do not show up let me know and I will check to see if BLM has a good data layer of their rec. sites."

**Response:** Based on this comment, WDEQ obtained recreation site data from all of the individual BLM field offices in the state. This resulted in the addition of campgrounds, recreation sites, trailheads, and dispersed campsites located on BLM land to the revised *Categorical UAA for Recreation*.

### 3.4 Extensions

**Entity:** **Wyoming Association of Conservation Districts**

**Comment:** "Page 33: Section 5.0 Extensions

COMMENT:

WACD recommends in situations where an extension's headwaters are located on private lands and exhibit less than 2 cfs that the criteria for that segment be changed to Secondary Contact Recreation or that the weighting for that segment be listed at 0."

**Entity:** **Meeteetsee Conservation District**

**Comment:** "MCD recommends that in situations where there are no confluences upstream in the 100k NHD that the 24k dataset should be used."

**Entity:** **Lower Wind River Conservation District**

**Comment:** "Because there was a decline in agreement of stream designation by the model versus field surveys (page 34-37), extensions should not be part of the UAA. In the Lower Wind River Conservation District, 46 'streams' were added due to extensions with calculated mean annual flows of 0 to 1.1 cubic feet per second. Since mean annual flows are accumulations of calculated monthly flows, it is obvious that these streams do not flow. We do not agree that extensions need to be included for 24k streams as adding extensions was a hand process done by one person. These 'streams' do not flow during the recreation season particularly in areas with less than 10 inches per year of precipitation and need to be designated as secondary recreation streams."

**Response:** WDEQ has modified the extension process to include only 100k NHD stream segments located between two primary segments and braided sections of streams. All other low flow streams, including 24k only streams, will be primary only within the primary by access areas.

### 3.5 Flow Analysis

**Entity:** **Black Hills National Forest**

**Comment:** "The statement, 'Streams that originate in mountainous areas with high mean annual precipitation will generally be larger perennial streams that may have sufficient flow to support primary contact recreation', does not consider mountainous areas with karst features. In these locations, all precipitation does not flow directly into streams but into the groundwater source, resulting in the lack of larger perennial streams."

**Response:** WDEQ/WQD modified the language in the UAA text to highlight that some streams that originate in mountainous areas will not have sufficient flow to support primary contact recreation because they have small watersheds or water may move rapidly to groundwater. The text now states, "ephemeral, intermittent, or small perennial streams may also occur in mountainous areas of the state where streams have small watershed areas and/or surface water moves rapidly to groundwater. Streams with larger watershed areas that originate in mountainous areas with high mean annual precipitation, where water does not move rapidly to groundwater, will generally be larger perennial streams that may have sufficient flow to support primary contact recreation."

**Entity:** Wyoming Mining Association

**Comment:** “The DCUAA uses depth of flow and watershed area to identify “low flow” streams where primary contact recreation is not an attainable use. The draft methodology provides a reasonable method to streamline this determination. However, there appear to be streams that should have been classified as low flow which were not. Comments submitted by member mining companies provide specific details.

Identification of low flow streams segments could be further improved through the use of USGS stream flow data. Site specific stream flow data collected by many companies could also be used when available to ensure that the correct classification is made.”

**Entity:** Campbell County Conservation District

**Comment:** “In our District there are three (3) tributaries to the Little Powder River that are still classified as Primary Contact Recreation due to flow: Wildcat Creek, lower Horse Creek, and Cottonwood Creek. Through the CUAAR it is estimated that these streams exceed the 6.0 cfs threshold for primary contact recreation using the National Hydrologic Dataset (NHD), when in reality these waterways are ephemeral throughout their respective reaches.

When Coal Bed Natural Gas production (2002-2006) was at its peak a perennial mimicking flow was experienced in the streams and their tributaries described above, but as CBNG production has declined and wells are shut in or abandoned we are seeing a relative trend decrease in discharges and flow through-out Campbell County especially in the Little Powder River Watershed.

Based on our experience it would seem that areas experiencing energy production resulting in the production of subterranean water and permitted by the Wyoming Pollution Discharge Elimination Systems (WYPDES), that the WYPDES flow data may be more appropriate to use rather than the NHD data set. We do however nonetheless realize though that we may have to apply site specific use attainability analysis (SSUAA) for these stream reaches independent of the CUAAR, and will also be applying the SSUAA for Olmstead and Wild Horse Creek.”

**Response:** The Enhanced Unit Runoff Model (EROM) modeled mean annual flow data that was used in the Draft Categorical UAA for Recreation does incorporate USGS flow data. As noted in the Draft UAA, in step five, flows upstream of gages were adjusted to the observed flow at the gage sites, although only gages that met certain criteria were used to perform the adjustment. DEQ used 257 USGS gages to evaluate the EROM mean annual flow estimates and identify the mean annual flows of streams that definitely do not support primary contact recreation. Of these 257 gages, 68 were used in the calibration of the EROM modeled flow. The advantage of using the EROM data is that there are estimates of mean annual flows for most 100k streams in the state whereas gage data occurs only at a few hundred sites. WDEQ/WQD did add 2012 WYPDES discharge flow data to the EROM data to account for any circumstances in

which the point source discharge contributed sufficient water to make primary contact recreation attainable.

WDEQ does recognize that the flow data used in the UAA are estimates. WDEQ is also aware that based on comparisons to USGS gage data, the EROM flow estimates are approximately 1.2 times measured flow. As a result, the Categorical UAA for Recreation is going to designate some streams for primary contact recreation that in fact do not support primary contact recreation due to insufficient flow. In these circumstances, actual flow data can be collected or presented to show that the mean annual flows are less than 6cfs and/or additional lines of evidence such as mean depth or maximum pool depth can be presented to demonstrate that primary contact recreation is not an attainable use. Actual measured flow data from USGS gages located on low flow streams and additional flow data made available to WDEQ during the comment period was incorporated into the revised *Categorical UAA for Recreation*. Site-specific UAAs conducted previously have likewise been incorporated into the UAA where appropriate.

**Entity:** Lower Wind River Conservation District

**Comment:** “We agree that flow data should be utilized to differentiate primary from secondary recreational streams in Wyoming. However, as you pointed out on page 8, Wyoming is the third driest state in the United States of America with 97% of the state receiving less than 16 inches of precipitation per year. Intermittent and ephemeral “streams” (which we call draws and gullies) in Wyoming only flow when the snow melts in the spring or when there is a significant precipitation event. This is especially true in the Lower Wind River Conservation District where annual precipitation averages less than 10 inches. We believe that the UAA should be as accurate as possible in designating streams in Wyoming as primary or secondary recreation streams.

Many of the dry draws and gullies in Wyoming are considered ‘streams’ by the National Hydrography Dataset (NHD) and the updated version NHDPlus. There is not actual measurement of flow in these ‘streams’ and models are used to estimate mean annual flows. Further, mean annual flows are accumulations of monthly flow estimates and downstream flow estimates are always more than upstream flow estimates. Precipitation grids used in the NHDPlus are modeled estimates. Utilizing models to estimate parameters in models leads to inaccuracy and results in over-estimated stream flows in dry areas (<10 inches of precipitation per year) in Wyoming where we have vast watersheds but very little precipitation. The mean annual flow estimates on your UAA map for intermittent and ephemeral ‘streams’ are 10-20 times too high. We believe that using stream order, watershed area and extrapolated data without precipitation data for ‘streams present’ only at the 24k scale is an inaccurate method to evaluate flow conditions. We would like to see actual precipitation values utilized in the model to calculate flow rather than using estimates of precipitation and estimates of flow.

Using flow numbers for three streams in a higher than average precipitation zone in Wyoming is an inaccurate method to determine flow during the recreation season for intermittent and ephemeral “streams” in lower (<10 inches) precipitation zones. According to the water data from the Wyoming Water Resources Data System, in the lower basins snowfall accounts for less than 40% of the annual precipitation. The maximum rainfall occurs in early spring. Thus, for intermittent and ephemeral streams, flows are highest during early spring and diminish or are non-existent during the summer. Since the mean annual flows in the NHD model are accumulations of monthly flows, the assumption that annual flows and recreation season flows are equal does not apply to intermittent and ephemeral streams in low (<10 inches) precipitation zones in Wyoming. At <10 inches of precipitation per year, mean daily precipitation would average less than 0.03 inches and result in no flow. We encourage the use of actual precipitation values to show that there is very little or no flow during the recreation season in low (<10 inches) precipitation zones for intermittent and ephemeral streams.”

**Response:** WDEQ was charged with identifying streams that *definitely do not* have sufficient stream flow to support primary contact recreation. During development of the *August 2013 Draft Categorical UAA for Recreation*, WDEQ evaluated all of the datasets available in NHDPlus (watershed area, stream flow, stream order) as well as combinations of these parameters and the USDA/NRCS 1971-2000 precipitation data for Wyoming, to determine which streams in the state do not support primary contact recreation due to insufficient flow. Based on those analyses, WDEQ determined that the NHDPlus V2 EROM was the best available dataset to identify streams that do not have sufficient flow to support primary contact recreation.

WDEQ recognizes that there are limitations to all models, particularly models that attempt to estimate naturally dynamic variables such as stream flow. However, based on information included in the NHDPlus V2 User Guide dated January 2013<sup>1</sup>, the mean annual runoff grids used as the baseline for the EROM mean annual flow estimates were based on a water balance approach. The water balance approach took precipitation, potential evapotranspiration, evapotranspiration, and soil moisture storage into account.

Even though precipitation was included as part of the EROM flow estimates, WDEQ recognizes that the EROM flow estimates typically overestimate mean annual flows based on mean annual flow data from USGS gage sites. As outlined in the *Draft Categorical UAA for Recreation*, based on 257 USGS gage sites, EROM flow estimates were approximately 1.2 times measured mean annual flows. WDEQ is also aware that in certain circumstances, EROM flow estimates are much greater than 1.2 times measured flow. For example, within the Lower Wind River Conservation District, the USGS gage site on Muddy Creek (06257500) has a measured mean annual flow of 4.9 cfs while the NHDPlus V2 EROM flow estimate was 18.4 cfs.

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<sup>1</sup> NHDPlus V2 User Manual: [ftp://ftp.horizon-systems.com/NHDPlus/NHDPlusV21/Documentation/NHDPlusV2\\_User\\_Guide.pdf](ftp://ftp.horizon-systems.com/NHDPlus/NHDPlusV21/Documentation/NHDPlusV2_User_Guide.pdf)

In situations where WDEQ has measured mean annual flow data (from USGS gage sites or from other gage sites) that are less than 6cfs and the EROM flow estimates were greater than 6 cfs, WDEQ used the measured mean annual flows within the revised *Categorical UAA for Recreation*. For other streams with measured mean annual flow data less than 6cfs that are not easily accessed by children or the public, site-specific UAAs can be submitted to WDEQ in the future to designate the stream for secondary contact recreation.

Even though EROM may overestimate mean annual flows, the mean annual flow threshold of 6 cfs used by WDEQ is an appropriate way to identify streams that *definitely do not* support primary contact recreation. That said, because the analysis is only identifying ephemeral, small intermittent, and small perennial streams, streams with mean annual flows greater than 6 cfs may also not have sufficient stream flow to support primary contact recreation. In these circumstances, WDEQ recommends submitting a site-specific UAA that demonstrates: there is not sufficient stream flow to support primary contact recreation, the stream is not used for primary contact recreation, and there is little potential for children or members of the public to ingest small quantities of water.

**Entity:** Lower Wind River Conservation District

**Comment:** “Of the fifteen photographs included in the UAA (pages 20-27), only one (Figure 15) is in an area with less than 10 inches of precipitation per year. Since the 97% of the state receives less precipitation than the photos depict, we suggest that you include photos of the dry draws and gullies which are typical in Wyoming. This will emphasize the point that Wyoming is the third driest state in the United States and that the majority of our ‘streams’ do not support primary recreation.”

**Response:** WDEQ has included photographs from additional sites within the UAA, including at least two streams with dry channels with EROM mean annual flows greater than 6 cfs.

**Entity:** Lower Wind River Conservation District

**Comment:** “The Table on page 34 shows designations for 100k NHD streams. On page 28, it is indicated that the 100k NHD streams are the ones of ‘interest in the state’. We encourage only the use of 100k streams in the UAA. However, if the 24k streams are included in the UAA, we recommend further work be done on calculating flow to include precipitation zones especially in areas of less than 10 inches per year of precipitation. These ‘streams’ need to remain secondary as there is no flow during the recreation season. Also, designations for 24k NHD streams need to be added to the summary table if they are included in the UAA.”

**Response:** NHDPlus V2 flow data is only available for the 100k NHD. Furthermore, there is no way to merge the 24k NHD and the 100k NHD into a single file or to assign the NHDPlus flow data to the 24k NHD. Essentially, the 24k and 100k NHD cannot be merged. As a

result, there is no way to directly translate stream mileages for only the 24k NHD or have the UAA applied to the 24k NHD.

WDEQ chose to include a way designate streams not present in the 100k NHD for primary or secondary contact recreation to avoid a situation where a stream would not be assigned a recreational designated use or assigned a primary contact recreation use by default. WDEQ extrapolated mean annual flow estimates for 24k streams which resulted in any streams not present in the 100k NHD, but present in the 24k NHD, being identified as “low flow” and not capable of supporting primary contact recreation. However, 24k streams not present in the 100k NHD that may be used for primary contact recreation due to their proximity to recreation areas, schools, or high density housing areas need to be protected for primary contact recreation because of the potential for water in these channels to be ingested by children.

**Entity:** **USDA, Forest Service, Medicine Bow-Routt National Forests and Thunder Basin National Grassland**

**Comment:** “Low Flow Streams: In general, the draft methodology accurately identifies streams in the mountain regions of the Forest (Sierra Madre, Snowy Range, Pole Mtn, Laramie Peak, Spring Creek units) as primary contact recreation due to flow conditions. These designations are consistent with areas where we have observed primary contact recreation activities occurring on the Forest.

Low Flow Streams: In general, the draft methodology does not accurately identify streams in the plains regions of the Forest (Thunder Basin National Grassland (TBNG)) as primary contact recreation due to flow conditions. The streams identified as primary contact recreation on the TBNG generally do not support sufficient flow to allow primary contact recreation during the recreation season and we have not observed primary contact recreation activities occurring in these water bodies on the Grassland. This comment applies to the following intermittent and ephemeral streams: Duck Creek, Dry Fork Cheyenne River, Sand Creek, Antelope Creek, Bates Creek, Porcupine Creek, Cheyenne River, Little Thunder Creek, Black Thunder Creek, Lodgepole Creek, Dry Creek, Lightning Creek, Beaver Creek, South Beaver Creek. We recommend these streams be considered for designation as secondary contact recreation. Additional analysis comparing mean annual flow to mean recreation season flows using only gages located in the plains hydrological region may support our observations.”

**Response:** WDEQ/WQD appreciates the feedback that the Recreation UAA is relatively accurate in the mountainous regions of the Forest. As for streams within the Thunder Basin National Grassland (TBNG), it appears that the EROM mean annual flow estimates are much higher than actual mean annual flows. For example, a USGS gage located on Little Thunder Creek that flows through the TBNG has a measured mean annual flow of 2.0 cfs and the EROM mean annual flow estimate is 13.8 cfs for the same reach. WDEQ used this gage data in the flow analysis for Little Thunder Creek, so Little Thunder

Creek is considered a “low flow” stream in the revised version of the *Categorical UAA for Recreation*.

Since the mean annual flow of streams in the basin areas are likely much lower than predicted by EROM, these streams would be good candidates for site-specific UAAs. These UAAs would need to demonstrate that the streams located on the TBNG do not have sufficient flow to support primary contact recreation. The site-specific UAA could include quantitative measurements of mean annual flow and/or depth if they are available or qualitative data such as photographs during the primary contact recreation season that show typical channel characteristics.

**Entity:** **USDA, Forest Service, Medicine Bow-Routt National Forests and Thunder Basin National Grassland**

**Comment:** “Pipeline: A feature designated as primary contact recreation is a buried pipeline (Cheyenne Board of Public Utilities) and we recommend the feature be removed from the analysis. The feature begins at Lake Owen Creek (T14N, R77W, Sec 28) and terminates south of the Laramie River (T13N, R76W, Sec 6).”

**Response:** WDEQ/WQD removed all of the NHD 100k features with FTYPE of “pipeline”. This change removed the pipeline outlined above and all other pipelines identified in the 100k NHD from the UAA.

**Entity:** **USDA, Forest Service, Medicine Bow-Routt National Forests and Thunder Basin National Grassland**

**Comment:** “Irrigation Ditch: A feature designated as primary contact recreation is an irrigation ditch (Belvidere Ditch) and we recommend the feature be removed from the analysis. The feature begins at Haggerty Creek (T14N, R87W, Sec 25) and terminates in a tributary to Big Gulch (T13N, R88W, Sec 14).”

**Response:** WDEQ/WQD has chosen to treat ditches the same as streams in the *Categorical UAA for Recreation* because ditches may have sufficient flow to support primary contact recreation; in some areas, ditches contain more water than streams and therefore are more attractive for primary contact recreation. Furthermore, ditches that are located in close proximity to schools, high density housing areas, parks, or recreation sites, may be used for primary contact recreation. WDEQ/WQD is aware that in some areas of the state most of the water is located in irrigation canals or ditches and that children play in these canals and ditches. As such, WDEQ/WQD believes that it is most appropriate to include ditches and canals in the analysis.

Further examination of Belvidere Ditch does show that only some portions of the ditch (approximately 1.7 miles) will be designated for primary contact recreation in the revised UAA. The portions of the ditch that will remain primary are within 0.5 miles of a trailhead and 0.5 miles of dispersed campsites.

### 3.6 Mean Annual Flow of Specific Streams

**Entity:** Peabody Energy

**Comment:** "Porcupine Creek

Lower Porcupine Creek in southeastern Campbell County and northeastern Converse County is classified as Primary Contact Due to Flow, based on average flow of 7.24 cfs as estimated by the National Hydrography Dataset (NHD). Under the DCUAA, the flow threshold for determining Primary Contact Due to Access is 6.0 cfs. Peabody's North Antelope Rochelle Mine has maintained continuous flow monitors on Porcupine Creek upstream and downstream of the mine since 1980. The data is in the possession of the Wyoming Department of Environmental Quality/Land Quality Division. At the upstream station, GS-1, there have been 8,220 mean daily flow measurements averaging 0.148 cfs. The primary period of flow occurred when large amounts of coal bed methane discharge was generated upstream of the mine. Total flow to the mine has averaged less than 10 acre-feet per year despite the upstream drainage area of over 100 square miles. This low flow total is attributed to low precipitation, sandy soils, and the very large amount and volume of stock ponds on the creek and tributaries upstream of the mine.

At the downstream station, GS-5, mean daily flow from 8,201 measurements has averaged 0.352 cfs. Most of this flow occurred between 1983 and 1999 when the mine was discharging large amounts of pit water. Porcupine Creek downstream of the mine is frequently dry with discontinuous stagnant pools that are very saline. Porcupine Reservoir, near the confluence of Porcupine and Antelope Creeks, is also usually dry and is only utilized by livestock and wildlife.

Rawhide and Little Rawhide Creeks

Rawhide Creek, north of Gillette, is also classified as Primary Contact Due to Flow, based on average flow of 8.95 cfs as estimated by the NHD. Little Rawhide Creek, a tributary of Rawhide Creek, is listed as primary by extension (to Rawhide Creek). Peabody's Rawhide Mine has maintained continuous flow monitors since 1979 on Rawhide Creek upstream and downstream of the mine as well as continuous monitoring on Little Rawhide Creek between 1982 and 1983. The data is also in the possession of the Wyoming Department of Environmental Quality/Land Quality Division.

At station USRC, upstream of the Rawhide Mine on Rawhide Creek, mean daily flow since 1980 has averaged 2.20 cfs. At station L-Rawhide, on Little Rawhide Creek at the confluence with Rawhide Creek, the mean daily flow between 1982 and 1993 averaged 0.41 cfs. And, at station DSRC, downstream of the Rawhide Mine on Rawhide Creek near the confluence with the Little Powder River, mean daily flow since 1979 has averaged 3.11 cfs.

For Porcupine, Rawhide, and Little Rawhide Creeks, actual flow data should be used rather than the NHD estimates as this data is much more accurate. Actual USGS flow

monitoring data should also be used for streams across Wyoming for flow determination where it is available.”

**Response:** WDEQ/WQD has used the site-specific flow data presented here in lieu of modeled flow data from NHDPlus. WDEQ/WQD used the flow data for the stream segment where the gage was located and used the flow data from that site to extrapolate upstream and downstream. WDEQ/WQD also used 9 USGS gage sites with measured mean annual flow values less than 6cfs where EROM flow estimates were greater than 6cfs. Access datasets were applied as described in the *Categorical UAA for Recreation*.

### 3.7 Lakes and Playas

**Entity:** Wyoming Mining Association, Peabody Energy

**Comment:** “On the electronic map associated with the DCUAA, numerous large isolated playas are shown as lakes and ponds with a primary contact status. These playas are shown separately as internal drainage basins on USGS topographic maps. These playas should be removed from the exhibit or classified separately and as secondary contact features.”

**Response:** WDEQ will change the symbology of playas and other waterbodies which may be ephemeral in nature within the next version of the web map. WDEQ chose to display the NHD 100k waterbodies dataset on the web map to eliminate the occurrence of gaps in the streams dataset where lakes and reservoirs occur. WDEQ did not and does not intend to designate every waterbody displayed in the 100k NHD for primary contact recreation. As the commenters indicate, many of the waterbodies included in the 100k NHD are no longer present, may be ephemeral, or may have been digitized incorrectly. For waterbodies, WDEQ will use the narrative description of all still waterbodies protected for primary contact recreation, rather than the 100k NHD waterbodies dataset.

### 3.8 Site-Specific UAAs - September 30, 2013 Comment Period

**Entity:** Wyoming Association of Conservation Districts

**Comment:** “Page 37; 7.0 CONCLUSIONS  
COMMENT: WACD appreciates the opportunity for site specific UAA’s to be submitted should a recreation use designation be inaccurate.”

**Response:** WDEQ recognizes that the *Categorical Use Attainability Analysis for Recreation* will not correctly designate the recreational use of all waters in Wyoming. WDEQ does believe that there will be very few instances where the UAA has incorrectly designated a stream or ditch for secondary contact recreation when primary contact recreation is an existing or attainable use. Much more likely will be instances where the Categorical UAA identifies a stream for primary contact recreation where primary contact recreation is not an existing or attainable use. In these circumstances, WDEQ

anticipates that site-specific UAAs will be used to demonstrate that primary contact recreation is not an attainable or existing use and the stream will be designated for secondary contact recreation.

**Entity:** **Campbell County Conservation District**

**Comment:** “We also request that the WDEQ rededicate their capability to evaluate the SSUAAs in a timely fashion once the Environmental Protection Agency (EPA) has put its approval seal on the draft CUAAR and adoption by the WDEQ. In reviewing the WEB Map we found a segment of Little Powder River south of the Elk Creek confluence to just north of the ZV Creek confluence to be missing from the WEB Map. We also understand that even though many of the reservoirs and stock ponds in the CCCD are still classified for Primary Contact Recreation they would be a very low priority SSUAA or CUAAR processes due to sustained storage and location issues.

Lastly, we realize that the draft CUAAR may not allow for individual quantitative information and data relating to flow to be used due to the EPA ‘sufficiently similar’ guidance. However, we suggest that the WDEQ try to incorporate a subset qualifier into the DCUAAR that could be used to augment a redesignation without having to use the SSUAA process whether it is for flow or public accessibility.”

**Response:** WDEQ/WQD has included the missing segment of the Little Powder River within the revised *Categorical UAA for Recreation*. When site-specific information was submitted (before and during the comment period that ended September 30, 2013), indicated insufficient flow to support primary contact recreation, WDEQ incorporated that information in the revised *Categorical UAA for Recreation*. For future site-specific UAAs, WDEQ anticipates that the process will be relatively straightforward through demonstration that measured mean annual flows are below 6 cfs and/or depth information indicates that primary contact recreation is not attainable and there is no evidence to suggest that primary contact recreation is an existing use.

Once recreational use designations are made through the *Categorical UAA for Recreation*, removing the primary contact recreation use will need to be made through the formal UAA process. The formal UAA process is a requirement of Wyoming’s water quality standards, Chapter 1, Sections 33 and 34, and the Federal Regulations, 40 CFR 131.10.

**Entity:** **Peabody Energy**

**Comment:** “One of the streams that our Rawhide Mine, located north of Gillette, discharges to is the Dry Fork of the Little Powder River (Dry Fork). The Draft CUAA places this stream in the ‘Primary Contact Recreation due to Access’ category. Dry Fork does not meet the requirements or thresholds for a primary contact recreation stream. Moreover, the classification could result in water quality standards which are lower than the native streams conditions at various times of the year. Peabody requests that WDEQ/WQD conduct a Use Attainability Analysis to reclassify Dry Fork for secondary contact recreation.

The access determination was apparently made because the stream is within 1.0 mile of a census block with greater than 100 persons per square mile population density and the possibility that the stream could be easily accessed by children or others. This census block cuts across subdivisions in and around Gillette. However, as will be demonstrated in this document, there is little public access to Dry Fork. Furthermore, there are few pools available for recreation opportunities, the stream is isolated from significantly populated areas, and average flow is below the 6 cubic feet per second (cfs) threshold consider[ed] suitable in the Draft CUAA for primary contact recreation.

#### Setting and Land Ownership, Use, and Access

Dry Fork begins in the clinker (scoria and porcelainite) hills near the Dry Fork Mine and in the uplands south of the Dry Fork Mine. Flow from Moyer Spring in the clinker hills creates the majority of the perennial flow in Dry Fork. Most of the upper reaches of the Dry Fork drainage basin are on the permit areas of the Dry Fork and Rawhide Mines and the Dry Fork Power Plant. Public access to these permitted areas is restricted. Photos 1 and 2 show aerial photos of the Dry Fork vicinity.

Moyer Reservoir, located on Dry Fork at the Dry Fork Mine in the SE1/4SE1/4 of Section 24, T51N, R72W and is fed primarily by water from Moyer Spring (shown in Photo 3). Mine staff report that the reservoir is permitted for fishing by mine employees and their families, although the reservoir is stocked annually, the fish cannot survive downstream of the reservoir in the shallow, vegetation-choked stream. Average flow from the spring through the reservoir is approximately 1.4 cfs according to the Dry Fork Mine.

Downstream of the Rawhide Mine, Dry Fork flows through grazing lands to the confluence with the Little Powder River located on the lands of the Mader Family. Nearly all the lands adjoining Dry Fork, including grazing, irrigated, and industrial lands, are fenced from public access. Except for state sections, all of the lands along Dry Fork are private. The Dry Fork floodplain is used for grazing, except within the active mine areas.

#### Stream Flow and Geomorphology

Flow has been measured on Dry Fork at the Rawhide Mine since 1978. The flow meters operate between April 15 and October 15, which including WDEQ's potential recreation period. This data is on file with the Wyoming Department of Environmental Quality/Land Quality Division. At station UDFC, near the mine's upstream permit boundary, the average flow since 1978 has been 0.97 cfs. At UDFC, average flow has been greater than 6 cfs 0.3 percent of the 6,844 days of measurement, flow has been greater than 3 cfs 1.4 percent of the time, and flow has been less than 1 cfs 73 percent of the time. At station DDFC, near the mine's downstream permit boundary, the average flow has been 1.73 cfs. At DDFC, flow has been greater than 6 cfs 1.1 percent of the 6,425 days of measurement, greater than 3 cfs 9.0 percent of the time, and less than 1 cfs 62 percent of the time.

Throughout the course of Dry Fork, the stream is deeply incised with thick vegetation in most sections of the stream channel. The flow depth in most of the streams is usually less than 1.5 feet. The total drainage area of Dry Fork is approximately 17 square miles and the length of the main stem is approximately 4.7 miles. South of the Dry Fork Mine, the drainage area is primarily composed of grassy swales with few defined channels. Photos 4 through 6 show Dry Fork from downstream of Moyer Spring to just downstream of the confluence with Little Powder River. The flow characteristics and geomorphology of this portion of the stream are not sufficient to support primary contact recreation on Dry Fork.

#### Isolation of Dry Fork from Populated Areas

Except for the lands of the Mader family, there are no residences in the vicinity of the defined stream channel of Dry Fork. The closest Gillette subdivision, Heritage Village, is approximately 4.2 miles from a tributary of Dry Fork and 5.1 miles from the main channel. The subdivision can be seen on Photo 1. Due to fencing of the surrounding lands at the mine sites and power plant, there is no access to the stream from the smaller subdivided lands surrounding Gillette.

#### Conclusion

Dry Fork Little Powder River does not meet the definition of a stream for Primary Contact Recreation due to Access category. The actual average flows fall well below the threshold needed to support primary contact recreation. Ownership and use of the lands adjacent to the channel provide little or no opportunity for the public to access these lands. Moreover, the population density of the area adjacent to the stream is grossly overstated by inappropriate use of census block data. Therefore, the WDEQ/WQD should conduct a Use Attainability Analysis to reclassify Dry Fork Little Powder River for secondary contact recreation.”

**Entity:** **Western Fuels Association**

**Comment:** “Western Fuels Association recently reviewed the Draft Categorical Use Attainability Analysis for Recreation (Draft CUAA). Two of the streams that our Dry Fork Mine, located north of Gillette, discharge into are the Dry Fork of the Little Powder River (Dry Fork), and Moyer Creek. The Draft CUAA places both streams in the ‘Primary Contact Recreation Due to Access’ category. We believe neither are primary contact recreation streams. Moreover, the classification could result in water quality standards which are lower than the native stream conditions at various times of the year. Western Fuels requests a change in the designations of both of these streams.

While the mine does not currently discharge effluent containing e-coli limit, the mine has an approved mine life of approximately 70 more years. We expect we may need to discharge sewage effluent at some future date, and we are concerned that this primary contact for recreation designation could result in a lowering of the allowable limits for e-coli to levels that are difficult for us to meet in the future. We are aware that at the Rawhide mine, which is located immediately downstream of the Dry Fork

Mine, their primary discharge point to Dry Fork currently has an e-coli limit of 630 colonies/100 mL between April 1 and September 30. By listing the stream as primary contact recreation, their future limit will be lowered to 126 colonies / 100 mL between May 1 and September 30. E-coli concentrations may often exceed 126 colonies /100mL in natural water bodies during the summer in Campbell County, especially where waterfowl and wildlife are common or livestock grazing is practiced. The Rawhide Mine is concerned about their ability to meet this low standard in the future. We are also concerned that it may affect our ability to obtain permits and meet discharge standards from our facility in the future.

Under the Draft CUAA, Dry Fork and Moyer are considered a primary contact stream due to access. The access determination was apparently made because the streams are within 1.0 miles of a census block with greater than 100 persons per square mile population density and the possibility that the streams could be easily accessed by children or others. This census block cuts across subdivisions in and around Gillette. However, as will be demonstrated in this document, there is no public access to any portion of the Dry Fork or Moyer. Furthermore, there are few pools available for recreation opportunities, the streams are isolated from significantly populated areas, and average flow for both are below the 6 cubic feet per second (cfs) threshold consider[ed] suitable in the Draft CUAA for primary contact recreation. Based on these limiting factors, we request that WDEQ/WQD conduct a Use Attainability Analysis to reclassify both Dry Fork and Moyer Creek for secondary contact recreation.

#### *Setting and Land Ownership, Use, and Access*

Dry Fork begins in the clinker (scoria and porcelainite) hills near the Dry Fork Mine and in the uplands south of the mine. Flow from Moyer Spring in the clinker hills creates the majority of the perennial flow in Dry Fork. All of the upper reaches of the Dry Fork channel are on the permit areas or lands owned by the Dry Fork and Rawhide Mines and the Dry Fork Station Power Plant. All lands within the mine and power plant permit areas are blocked from public access, as required by the air permits for the both types of facilities. There is no public access to any reaches of these two creeks from their headwaters to well beyond the mine permit boundaries, many miles north of the subdivisions. Photos 1 and 2 are aerial photos showing the Dry Fork vicinity.

Moyer Reservoir, located on Moyer Creek at the Dry Fork Mine in the SE1/4 SE1/4 of Section 24, T51N, R72W and permitted for recreational fishing by mine employees and their families, is fed primarily by water from Moyer Spring (shown in Photo 3). The fish in the reservoir are stocked annually and cannot survive downstream of the reservoir in the shallow vegetation choked stream. Average flow from the spring through the reservoir is approximately 0.9 cfs, as measured at CR-1 station.

Dry Fork mine has strict rules on the use of the Moyer Reservoir for fishing. Access is strictly limited to those individuals employed by the mine and their immediate families. All must pass through the mine's security facility prior to be[ing] allowed in to the pond. No wading, swimming, or drinking of the water area allowed. The mine has

installed a walkway over the creek, and has requirements to use the provided walkway to cross the creek. Wash up facilities are provided. This privately stocked and privately managed facility is not accessible to the public. Dry Fork mine is under no obligation to allow this fishing program, and can close the pond at any time. It will be permanently closed if that is what the WQD requires to prevent either creek from being classified as primary contact use attainability.

Moyer Creek merges into, and becomes the main water source for the Dry Fork while still on the Dry Fork Mine. Downstream of the Dry Fork Mine, the Dry Fork flows through mine owned and access restricted grazing lands to the point where it enters the Rawhide mine. From the Rawhide mine, the Dry Fork confluence[s] with the Little Powder River located on the lands of the Mader Family. Nearly all of the lands adjoining Dry Fork, including grazing, irrigated, and industrial lands, are fenced from public access. There are no public access areas along the flowing portions of Dry Fork or Moyer Creek. The Dry Fork and Moyer Creek floodplain are used for grazing, except within the active mine areas.

As shown on photo 1, the Dry Fork and Moyer Creek are located approximately 3 miles from the nearest subdivision (the Wrangler Estates subdivision). The Wrangler Estates subdivision homes are the nearest public dwellings to these creeks. Three miles is well beyond the one mile requirement for primary contact recreation use attainability classification.

#### *Stream Flow and Geomorphology*

Flow has been measured on both Dry Fork and Moyer at the Dry Fork Mine since the late 1970's. The flow meters operate between April 15 and October 15, which includes WDEQ's potential recreation period. This data is on file with the Wyoming Department of Environmental Quality/Land Quality Division. The monitors confirm that the Dry Fork is ephemeral until it merges with Moyer Creek.

#### *a. Moyer Creek*

Moyer Creek is only about 1 mile in length before it merges into and becomes part of the Dry Fork of the Little Powder River. It is entirely situated on Dry Fork Mine property. It's total contributing drainage basin is about 2 square miles. Moyer Creek is spring fed, with the spring originating on Dry Fork Mine property, and the spring being fed from scoria clinker (porcelenaite) formations. The stream is incised with thick vegetation in most sections of the stream channel. The flow depth in most of the stream is usually less than 1.0 feet (See Photo 4). There are three pools on along Moyer Creek. Two are formed by the DFM CR-1 and CR-2 flow recording stations. The third is Moyer Reservoir as discussed previously. All are in the Dry Fork Mine permit boundary, restricted from public access.

Monitor CR-1 is the most reliable recording monitor along Moyer Creek. The best available flow information for station CR-1 is found in the WDEQ/LQD August 2013 CHIA for the Dry Fork Mine Amendment 2 (CHIA 33), summarized as follows:

*The corrected mean daily discharge record for Moyer Spring at station CR-1 is plotted on Figure 49. The record confirms the relatively consistent flow of the springs over time. The average daily flow for the period of record is 0.89 cfs, with a standard deviation of 0.16 cfs. Flows at the station are dominated from discharge from the springs, as very few runoff events are apparent from the hydrograph. The maximum mean daily discharge of 5.96 cfs occurred in July 1982 (Figure 49); the same storm also caused high runoff on stations downstream on the Dry Fork LPR.*

(please see CHIA 33 to view Figure 49). According to a summary of the flow data provided by the LQD, Station CR-1 on Moyer Creek flow rates were above 3 cfs only 0.01% of the time (from 1979 – 2012) and were never above 6 cfs.

Dry Fork Mine CR-2 monitor is located in Moyer Creek before the confluence with the Dry Fork Little Powder River. It is not as reliable a monitor as is not normally used for flow analysis by the LQD. According to a recent analysis by LQD of the flows at Station CR-2, for the period from 2000 through 2012, CR-2 shows mean daily flow rates below 3 cfs for all but 11.7% of the time. Flows were below 6 cfs for all readings except 0.6% of the readings.

b. Dry Fork Little Powder River

CHIA 33 discusses the flows in the Dry Fork Little Powder River above the confluence with Moyer Creek, as follows:

*Streamflow monitored on the Dry Fork LPR at Eagle Butte Mine station EB-11 upstream of the confluence with Moyer Springs Creek illustrate the effect of Moyer Springs on the flow regime of the Dry Fork LPR. From April 2000 to September 2008, flow was only recorded during 25 days, or 0.4 percent of the period.*

The Dry Fork Mine CR-4 monitor is located in the Dry Fork after the confluence with Moyer Creek, downstream of the Dry Fork Mine, and upstream of the Rawhide Mine. This is also not a very reliable monitor, and is not typically used by LQD for flow analysis purposes. According to a recent summary of the Station CR-4 data, for the period from 2000 through 2012, CR-4 shows average daily flow rates below 3 cfs for all but 4.9% of the time. Flows were below 6 cfs for all readings, except 1.1% of the readings.

Downstream of the Dry Fork Mine, the Rawhide Mine operates several monitors. CHIA 33 contains the following summary of the downstream Rawhide Mine stations UDFC and DDFC.

*Monitoring at UDFC and DDFC from 2000 to 2011 showed that flows were mostly perennial during the seven month period when the gages were active (April through October), and this flow regime is similar to the baseline period at the stations. Flows averaged 0.97 cfs at UDFC and 2.79 at DDFC over the 2000-2011 period. The average*

*for UDFC is very similar to the average from the baseline period, while the DDFC average is approximately 65 percent higher than the baseline average. The Rawhide Mine indicates that pit pumpage can supplement flows, although peak flows are attenuated due to storage reservoirs (Rawhide Mine Permit, 2013). In addition, six events with mean daily flows greater than 50 cfs occurred from 2006 to 2011. A storm with 3.31 inches of precipitation in May 2007 resulted in a maximum mean daily discharge of 347 cfs at DDFC. The maximum peak discharges for this event were 514 cfs at UDFC and 882 cfs at DDFC (Rawhide Mine Permit, 2013). The 882 cfs at DDFC is approximately a 25 to 50 year event, as predicted by the regression equations of Miller (2003).*

Throughout the course of Dry Fork, the stream is deeply incised with thick vegetation in most sections of the stream channel. The flow depth in most of the stream is usually less than 1.5 feet. The total drainage area of Dry Fork is approximately 17 square miles and the length of the main stem is approximately 4.7 miles. South of the Dry Fork Mine, the drainage area is primarily composed of grassy swales and few defined channels. Photos 4 through 6 show Dry Fork from downstream of Moyer Spring to just downstream of the confluence with Little Powder River. The flow characteristics and geomorphology of this portion of the stream are not sufficient to support primary recreation on Dry Fork.

#### *Isolation of Dry Fork from Populated Areas*

Except for the lands of the Mader family, there are no residences in the vicinity of the defined stream channel of Dry Fork. As shown on Photo 1, the closest Campbell County subdivision, Wrangler Estates, is located about 3 miles from the flowing portion of the Dry Fork. The closest Gillette subdivision, Heritage Village, is approximately 4 miles from the Dry Fork channel. Photo 8 illustrates the surface control around Moyer Creek and the Dry Fork due to the Dry Fork and Rawhide Mines. Due to fencing of the surrounding lands at the mine sites and power plant, there is no access to either stream from the residential lands surrounding Gillette.

We believe that Dry Fork and Moyer Creek should not be classified as primary contact recreation as there is no flow sufficient to support primary contact recreation and no opportunity for the public to access the lands surrounding the streams channels. Therefore, we request that the WDEQ/WQD conduct a Use Attainability Analysis to reclassify Dry Fork and Moyer Creek for secondary contact recreation.”

**Response:** In the August 2013 *Draft Categorical UAA for Recreation*, Moyer Creek and the Dry Fork Little Powder downstream of Moyer Creek were designated for secondary contact recreation. No additional changes were made to these segments. Based on the information above, Moyer Reservoir has been identified for secondary contact recreation due to the restrictions imposed by the Dry Fork Mine. Based on the information presented above and an examination of the aerial photography near the Dry Fork Mine, WDEQ/WQD modified the boundaries of census block adjacent to the Dry Fork mine to the area where houses occur. This change and the change to the

extension process has resulted in the headwaters of Dry Fork Little Powder River being designated for primary contact recreation due to the proximity of the stream to higher density housing and the portion of the stream within the active mine site being designated for secondary contact recreation.

### 3.9 Informal Comments

**Comment:** Pipelines were included in the NHD 100k dataset.

**Response:** WDEQ has removed any underground pipelines that were identified in the NHD.

**Comment:** Will WDEQ be incorporating the site-specific recreation UAAs that were submitted and not processed because the categorical UAA was being completed?

**Response:** WDEQ has incorporated the site-specific UAAs that were received by WDEQ/WQD prior to the September 30, 2013 public comment period into the *Categorical UAA for Recreation*. The site-specific UAAs are identified below. The text of the UAAs that resulted in a change to the Categorical UAA can be found in Appendix B.

### 3.10 Site-Specific UAAs Received By WDEQ in 2009 and 2010

**Entity:** Hot Springs Conservation District

**UAA:** Kirby Creek Watershed

**Response:** With the exception of the Kirby Creek mainstem, the Kirby Creek watershed was designated for secondary contact recreation by the Categorical UAA for Recreation. NHDPlus Enhanced Unit Runoff Method (EROM) flows of the Kirby Creek mainstem ranged from 6.2 cfs in the upper watershed to 13.8 cfs where Kirby Creek confluences with the Bighorn River. Based on information submitted in the site-specific UAA for the Kirby Creek watershed, the Kirby Creek mainstem was changed to a "low flow" stream. Access datasets were applied as outlined in the UAA. The Kirby Creek UAA can be shown in Appendix B, Figure B-1.

**Entity:** Lingle-Fort Laramie Conservation District

**UAA:** Rawhide Creek

**Response:** Rawhide Creek was designated for secondary contact recreation in the *Categorical UAA for Recreation*; no further changes were made to the UAA to address this site-specific UAA.

**Entity:** North Platte Valley Conservation District

**UAA:** Cherry Creek Drain

**Response:** Cherry Creek Drain was designated for secondary contact recreation in the *Categorical UAA for Recreation*; no further changes were made to the UAA to address this site-specific UAA.

**Entity:** Popo Agie Conservation District

**UAA:** Muddy Creek, Big Camp and Little Camp Creeks

**Response:** Muddy Creek, Big Camp Creek, and Little Camp Creeks were designated for secondary contact recreation in the *Categorical UAA for Recreation*; no further changes were made to the UAA to incorporate these site-specific UAAs.

**Entity:** Washakie County Conservation District

**UAA:** Nowater Creek Watershed

**Response:** With the exception of the lower portion of Nowater Creek and the lower portion of East Fork Nowater Creek, the entire Nowater Creek watershed was designated for secondary contact recreation in the *August 2013 Draft Categorical UAA for Recreation*. For the remaining portion of Nowater Creek, the NHDPlus V2 EROM mean annual flow estimates ranged from 6.3 cfs in the upper reaches to 14.3 cfs where the Nowater confluences with the East Fork Nowater Creek. The NHDPlus V2 EROM mean annual flow estimates of East Fork Nowater Creek ranged from 6.8 cfs in the upper reaches to 7.9 cfs where the East Fork Nowater confluences with the Nowater mainstem. A USGS gage is also located on the lower portion of the East Fork Nowater Creek. Measured mean annual flow from the USGS gage was 4.3 cfs while the NHDPlus V2 EROM estimated mean annual flow was 7.9 cfs.

WDEQ/WQD used the USGS gage on the East Fork Nowater Creek as the mean annual flows for the East Fork in the revised UAA. Based on the USGS gage and information submitted in the site-specific UAA for the Nowater Creek watershed, the lower portion of the Nowater Creek mainstem and the lower portion of East Fork Nowater Creek were changed to "low flow" streams. Access datasets were applied as outlined in the UAA. Relevant excerpts from the Nowater Creek UAA are shown in Appendix B, Figure B-2.

**Entity:** Washakie County Conservation District

**UAA:** Fifteenmile Creek Watershed

**Response:** With the exception of the lower portion of the Fifteenmile Creek mainstem, the entire Fifteenmile Creek watershed was designated for secondary contact recreation in the *August 2013 Draft Categorical UAA for Recreation*. For the remaining 58.4 miles of Fifteenmile Creek mainstem, NHDPlus V2 EROM mean annual flow estimates ranged from 6.2 cfs to 21.0 cfs. Based on information submitted in the site-specific UAA for

Fifteenmile Creek, the lower 58.4 miles of Fifteenmile Creek was changed to a “low flow” stream in the *Categorical UAA for Recreation*. Access datasets were applied as outlined in the UAA. Relevant excerpts from the Fifteenmile Creek UAA are shown in Appendix B, Figure B-3.

**Entity:** Lower Wind River Conservation District

**UAA:** Poison Creek Watershed

**Response:** With the exception of the lower portion of Poison Creek and the lower portion of Deer Creek, streams within the Poison Creek watershed did not have sufficient streamflow to support primary contact recreation in the *August 2013 Draft Categorical UAA for Recreation*. The NHDPlus V2 EROM mean annual flow estimates for approximately 65 miles of Poison Creek ranged from 6.3 cfs to 18.2 cfs and the EROM mean annual flow estimates for approximately 7.5 miles of Deer Creek ranged from 7.6 cfs to 8.5 cfs. Based on information submitted in the site-specific UAA for the Poison Creek watershed, the lower 65 miles of Poison Creek and the lower 7.5 miles of Deer Creek were changed to “low flow” streams in the *Categorical UAA for Recreation*. Access datasets were applied as outlined in the Categorical UAA. The Poison Creek UAA is included in Appendix B, Figure B-4.

LP/rm/14-0067

**APPENDIX A. COMMENTS RECEIVED DURING THE COMMENT PERIOD ENDING SEPTEMBER 30, 2013**

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Figure A-1. Sublette County Conservation District (2 pages).



Date: September 5, 2013

To: Lindsay Patterson  
Via email: Lindsay.Patterson@wyo.gov  
WDEQ, Surface Water Standards  
Cheyenne, WY

From: Board of Supervisors, Sublette County Conservation District

Dear Lindsay,

The Sublette County Conservation District has reviewed the draft of "[Categorical Use Attainability Analysis for Recreation](#)" as well as the webmap providing case-by-case illustration of stream segment classification as output from the model.

The District is very appreciative of the effort which has been invested in developing a statewide UAA in an effort to streamline proper categorization of the State's streams. This "first cut" certainly reduces the number of stream miles which might require the effort of individual UAA development.

There does seem to be one issue which is apparent in the model's output, and that is the issue of assigning streams with extremely low predicted flows a Primary Recreation rating via the "Access" test.

When one follows the logic of the model, the decision points can be generally characterized as follows:

1. **Flow Test** - Based on hydrologic mapping and modeling, all streams with greater than 6 CFS annual mean flow are designated primary. Alternatively, those less than 6.0 CFS are subject to further tests within the model.
2. **Access Test** - Those streams <6 CFS are tested for "accessibility" based on proximity to a number of access factors. These include proximity to population dense areas, campgrounds, trailheads, parks, roads, etc. Based on a point scoring system, stream segments amassing a certain number of points are assigned to the Primary category.
3. **Extension Test** - Subsequently, "orphan" secondary stream reaches between primary segments are assigned Primary status via "Extension"

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Conservation - Development - Self-Government

The difficulty arises when streams with essentially no predicted flow (in reality: dry swales and draws) are assigned Primary status via the Access test.

The very first test in the model is a test for flow, and thus it is counterintuitive to assign Primary status to “streams” with no flow! To be Primary, flow must come first!

To address this problem, we would suggest the following alteration/addition to the model:

**Introduce a test for “negligible flow” to the model which would preclude any stream with extremely low annual mean flow from earning points in the access test.**

This could either be done as another step in the model, or integrated into the point scheme of the access test. (E.g., if there is negligible flow, subtract 40 points from the Access test.)

We would suggest some additional modeling and field checking of the revised model’s output to understand what the lower annual mean flow may be. We understand that “negligible flow” needs defined, but would argue that it is an important inclusion in the model.

Perhaps the definition of “negligible flow” should be 1.0 cfs mean annual flow, or perhaps it should be 0.1 cfs. Modeling, coupled with field verification, will help identify a threshold value which allows the model to output realistic classifications in those extremely low flow drainages; even those that happen to be in close proximity to those variables tested in the Access portion of the model.

The Sublette County Conservation District would be pleased to help identify and field verify an altered model using several of the streams we can readily identify as mis-categorized as Primary because of the missing “negligible flow test” we propose to be included in the model. As noted earlier, we are anxious to see a Statewide UAA implemented. But we do believe that the results, particularly at the lower end of flows, must be reasonable in order to maintain credibility.

Figure A-2. Black Hills National Forest (8 pages).



Forest Service

Black Hills National Forest  
Bearlodge Ranger District

101 S 21<sup>st</sup> Street, PO Box 680  
Sundance WY 82729-0680  
307-283-1361

RECEIVED  
SEP 16 2013  
WATER QUALITY DIVISION  
WYOMING

File Code: 2530  
Date: September 11, 2013

Lindsay Patterson  
Supervisor – Surface Water Standards Program  
WDEQ – WQD  
122 West 25<sup>th</sup> Street  
Herschler Building, 4<sup>th</sup> Floor – West  
Cheyenne, Wyoming 82002

Dear Lindsay,

I received the *Draft Categorical Use Attainability Analysis for Recreation* and offer the enclosed comments and suggestions. In general, I approve of the process the Wyoming Department of Environmental Quality is utilizing to update the classification for primary and secondary contact recreation waters. After review by my hydrology staff, we believe some Black Hills National Forest streams should be classified as secondary contact as opposed to primary contact based on physical and environmental conditions. These recommendations are included in the enclosed document and maps. Additional comments regarding text changes within the document are also included. If you have any questions please contact Callie Ackerman at (307)283-1361 or [callieackerman@fs.fed.us](mailto:callieackerman@fs.fed.us).

Sincerely,



STEVEN J. KOZEL  
District Ranger – Bearlodge Ranger District

Enclosure:

cc: Joan Y Carlson, Deanna Reyher



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## **Comments for Categorical Use Attainability Analysis for Recreation**

Callie Ackerman, North Zone Hydrologist

Black Hills National Forest – Bearlodge Ranger District, Sundance, WY

September 9, 2013

The Categorical Use Attainability Analysis for Recreation (WYDEQ, August 2013 Draft) identifies streams within the state of Wyoming as primary or secondary contact recreation waters. After review of the map included in the document, a number of streams on the Black Hills National Forest are identified as primary contact recreation waters. Most of these streams have inadequate flow to be labeled as primary and should be categorized as secondary contact recreation waters. Streams are weighted in regards of proximity to roads and trails and whether they are located on public lands. While this strategy is an improvement in regards to previous categorizing system, it is still resulting in the designation of primary contact recreation water in situations where the stream is ephemeral or intermittent. There were no streams labeled as a secondary contact recreation water when it should be labeled as primary.

The Black Hills National Forest is currently updating their stream layer. As a result, field visits have been conducted to many streams to observe the streamflow and correctly label a stream as ephemeral, intermittent, or perennial. Based on flow type alone, many of the streams designated as a primary contact recreation water, are categorized as ephemeral or intermittent. The following table and attached map includes the updated stream flow data and highlighted those streams which have perennial flow and could remain designated as a 'primary contact recreation water'.

Comments to the Document:

- Section 3.2, page 8
  - The statement, *"Streams that originate in mountainous areas with high mean annual precipitation will generally be larger perennial streams that may have sufficient flow to support primary contact recreation"*, does not consider mountainous areas with karst features. In these locations, all precipitation does not flow directly into streams but into the groundwater source, resulting in the lack of larger perennial streams.
- Section 4.2, Table 1
  - The table: *Datasets, buffers, and weightings used in the categorical UAA for recreation*, lists that streams within the boundary of public lands are given a weighting of 5. This does not take into account actual accessibility to the stream from a nearby road, trail, campground, or other access point. Many streams on the Black Hills National Forest are in steep draws where access is not easy and unlikely to occur. Thus, the weighting of the stream could be overestimated by applying this dataset.
- Section 4.2.4, page 32

- The data used for USFS roads should only include those roads currently open for motorized vehicle use; this data is available on the Black Hills National Forest website and on the Motor Vehicle Use Maps. All other roads not on the map, regardless of their suitability rating, are closed to motorized vehicles. Closed roads are open to non-motorized vehicle use, although the probably of use of closed roads are less than the use of open roads and should be weighted accordingly.

**Table 1.** Streams identified as primary contact recreation waters – analysis is limited to the portion of the streams within the Black Hills National Forest Boundary

Stream Name	Location	Stream Flow Type*	Forest Service Suggested Recreation Contact	Reasoning
<b>Beaver Creek Streams</b>				
Beaver Creek	T52N R63W Section 16 to Forest Boundary	Perennial	Primary	Sufficient flow, Adequate Access
Reservoir Gulch	T54N R63W Section 11 to confluence with Beaver Creek	Intermittent	Secondary	Intermittent Flow, Inadequate access to stream
Lucky Gulch	T54N R62W Section 18 to confluence with Beaver Creek	Intermittent	Secondary	Intermittent Flow, Inadequate access to stream
Unnamed Tributary to Little Beaver Creek	T54N R62W Section 30 to confluence with Little Beaver Creek	Intermittent	Secondary	Intermittent Flow, Inadequate access to stream.
Little Beaver Creek	T53N R62W Section 6 to confluence with Beaver Creek	Perennial/ Intermittent	Primary	Sufficient flow, Adequate Access to lower portion of stream near confluence to Beaver Creek – upper reaches access more difficult and stream is intermittent
Fawn Creek	T53N R62W Section 6 to confluence with Beaver Creek	Perennial/ Intermittent	Primary	Sufficient flow in lower portion near the confluence to Beaver Creek, Adequate Access
Unnamed Tributary 1 to Beaver Creek	T53N R63W Section 10 to confluence with Beaver Creek	Intermittent	Secondary	Intermittent Flow and Access minimal
Unnamed Tributary to Beaver Creek (also called Ben's Spring Creek)	T53N R63W Section 12 to confluence with Beaver Creek	Perennial/ Intermittent	Secondary	Small perennial stream with minimal flow in spots, mostly intermittent flow. Difficult access to stream –

				unlikely to be contacted.
Little Creek	T53N R63W Section 11 to confluence with Beaver Creek	Intermittent/ Perennial	Primary	Sufficient flow and fish known to be present. Difficult access to stream – unlikely to be contacted.
Unnamed Tributary 2 to Beaver Creek	T53N R63W Section 14 to confluence with Beaver Creek	Intermittent	Secondary	Insufficient flow, Although adjacent to road
Deer Creek	T53N R63W Section 29 to confluence with Beaver Creek	Intermittent	Secondary	Intermittent Flow and Access minimal
Unnamed Tributary 3 to Beaver Creek	T53N R63W Section 28 to confluence with Beaver Creek	Intermittent	Secondary	Intermittent Flow and Access minimal
Unnamed Tributary 4 to Beaver Creek	T53N R63W Section 35 to confluence with Beaver Creek	Perennial	Secondary	Small perennial stream with minimal flow
Togus Creek	T52N R63W Section 8 to confluence with Beaver Creek	Perennial/ Intermittent	Secondary	Majority of flow is intermittent
Unnamed Tributary to Togus Creek	T52N R63W Section 4 to confluence with Beaver Creek	Ephemeral/ Intermittent	Secondary	Ephemeral and Intermittent flow.
Whitelaw Creek	T52N R63W Section 17 to confluence with Beaver Creek	Perennial	Primary	Sufficient flow and close proximity to road
Whitetail Creek	T52N R63W Section 17 to confluence with Whitelaw Creek	Perennial/ Intermittent	Secondary	Largely intermittent with minimal access.
<b>Beaverdam Creek Streams</b>				
Beaverdam Creek	T54N R63W Section 2 to Forest Boundary	Intermittent/Per ennial	Secondary	Half of the stream has Intermittent Flow. Difficult access to stream – unlikely to be contacted.
<b>Blacktail Creek Streams</b>				
Blacktail Creek	T53N R63W Section 30 to Forest Boundary	Perennial	Primary	Sufficient Flow. Located next to road – access probable.
Hershey Creek	T53N R64W Section 24 to confluence with Blacktail Creek	Perennial	Primary	Sufficient Flow. Located next to road – access probable.
East Fork Blacktail Creek	T53N R63W Section 20 to	Perennial	Primary	Sufficient Flow. Located next to road – access

	confluence with Blacktail Creek			probable.
Winchester Creek	T53N R63W Section 31 to confluence with Blacktail Creek	Perennial	Primary	Sufficient Flow. Located next to road – access probable.
<b>Cold Springs Creek Streams</b>				
Cold Springs – from perennial stretch to confluence with Sand Creek	T51N R61W Sections 15, 10, 3, 2 and Sections 28, 33	Ephemeral	Secondary	Ephemeral flow.
Manhattan Gulch	T51N R61W Section 15	Ephemeral	Secondary	Ephemeral flow.
Cold Springs – from T50N R61W Sec 28- 17	T50N R61W Sections 28, 21, 17	Perennial	Primary	Sufficient Flow. Located next to road – access probable.
<b>Deer Creek Streams</b>				
Deer Creek	T49N R60W Section 19 to Forest Boundary	Ephemeral	Secondary	Ephemeral flow.
Unnamed Tributary to Deer Creek (also known as Scott Hardy Spring Creek)	T49N R60W Section 18 to Forest Boundary	Ephemeral	Secondary	Ephemeral flow.
<b>East Creek Streams</b>				
Unnamed Tributary to East Creek	T55N R63W Section 14 to confluence with East Creek	Intermittent	Secondary	Intermittent Flow. Difficult access to stream – unlikely to be contacted.
Unnamed Tributary to East Creek	T55N R63W Section 14 to confluence with East Creek	Perennial	Secondary	Difficult access to stream – unlikely to be contacted.
<b>Grand Canyon Streams</b>				
Grand Canyon	T49N R60W Section 21 to T50N R61W Section 9	Ephemeral/ Intermittent	Secondary	Mostly ephemeral flow, portions of upper reach are intermittent from spring flow in the spring.
Rattlesnake Canyon	T50N R60W Section 4 to confluence with Grand Canyon	Ephemeral/ Small Perennial	Secondary	Ephemeral flow from confluence of Grand Canyon to confluence of Balm of Gilead Gulch, small perennial with inadequate depth upstream of confluence with Balm of Gilead Gulch
Balm of Gilead Gulch	T50N R60W Section 16 to confluence of Rattlesnake Canyon	Ephemeral	Secondary	Ephemeral flow. Access is minimal.

Wagon Canyon	SD/WY border to confluence with Grand Canyon	Small Perennial/ Intermittent	Secondary	Inadequate depth for immersion.
Riflepit Canyon	SD/WY border to confluence with Wagon Canyon	Ephemeral	Secondary	Ephemeral flow.
Unnamed Tributary to Grand Canyon (also known as Elk Spring Creek)	T49N R60W Section 9 to confluence with Grand Canyon	Ephemeral/ Intermittent	Secondary	Ephemeral/Intermittent flow.
Dugout Spring Creek	SD/WY border to confluence with Grand Canyon	Intermittent	Secondary	Intermittent flow.
Unnamed Tributary to Grand Canyon	T49N R60W Section 21 to confluence to Grand Canyon	Ephemeral	Secondary	Ephemeral flow.
<b>Houston Creek Streams</b>				
Houston Creek	T52N R63W Section 29 to Forest Boundary	Intermittent	Secondary	Intermittent flow and difficult access
Bear Den Canyon	T52N R63W Section 29 to Forest Boundary	Intermittent	Secondary	Intermittent flow and difficult access
Lost Houston Creek	T52N R63W Section 19 to Forest Boundary	Intermittent	Secondary	Intermittent flow and difficult access
<b>Lame Jones Creek Streams</b>				
Slaybaugh Creek	T53N R63W Section 9	Perennial	Secondary	Difficult access to stream – unlikely to be contacted.
<b>Lytle Creek Streams</b>				
Lytle Creek	T52N R63W Section 19 to Forest Boundary	Perennial/ Intermittent	Primary	Perennial flow for the lower reach near the Forest Boundary and at the headwaters with intermittent flow in between. Based on proximity to roads, should remain primary throughout.
<b>Middle Fork Hay Creek Streams</b>				
Middle Fork Hay Creek	T54N R62W Section 7 to Forest Boundary	Intermittent	Secondary	Intermittent Flow. Difficult access to stream – unlikely to be contacted.
Unnamed Tributary to Middle Fork Hay Creek	T54N R62W Section 7 to Forest Boundary	Intermittent	Secondary	Intermittent Flow. Difficult access to stream – unlikely to be contacted.
<b>Miller Creek Streams</b>				
North Fork Miller Creek	T52N R63W Section 19 to Forest Boundary	Intermittent	Secondary	Intermittent flow
<b>Ogden Creek Streams</b>				

Ogden Creek	T52N R63W Section 28 to Forest Boundary	Perennial/ Intermittent	Primary	Sufficient flow. Located next to road and trail system – access probable.
Richardson Creek	T52N R63W Section 11 to confluence with Ogden Creek	Perennial	Primary	Sufficient flow. Located next to road and trail system – access probable.
Unnamed Tributary to Ogden Creek	T52N R63W Section 26 to Forest Boundary	Intermittent	Secondary	Intermittent flow
<b>Redwater Creek Streams</b>				
North Redwater Creek	T53N R63W Section 23 to Forest Boundary	Perennial	Primary	Sufficient Flow. Located next to road – access probable
Unnamed Tributary to North Redwater Creek	T53N R62W Section 8 to confluence with North Redwater	Intermittent	Secondary	Intermittent Flow
Twomile Creek	T53N R62W Section 7 to confluence with North Redwater	Intermittent	Secondary	Intermittent Flow, minimal access
Onemile Creek	T53N R63W Section 13 to confluence with North Redwater	Intermittent	Secondary	Intermittent Flow, minimal access
Unnamed Tributary to North Redwater Creek	T53N R63W Section 25 to confluence with North Redwater	Intermittent	Secondary	Intermittent flow
Redwater Creek	Confluence with Cow Creek to Forest Boundary	Perennial	Primary	Sufficient Flow. Located next to road – access probable.
Redwater Creek – Above Cow Creek Confluence	T52N R63W Section 10 to confluence with Cow Creek	Perennial/ Intermittent	Secondary	Intermittent except right at confluence with Cow Creek. Access minimal.
Cow Creek	T52N R63W Section 11 to confluence with Redwater Creek	Perennial	Primary	Sufficient Flow. Located next to road – access probable.
South Redwater Creek	T52N R63W Section 23 to Forest Boundary	Intermittent	Secondary	Intermittent flow and difficult access to stream.
Cole Canyon	T52N R63W Section 15 to confluence with Redwater Creek	Intermittent	Secondary	Intermittent flow
Unnamed Tributary to Cole Canyon	T52N R63W Section 11 to confluence with Redwater Creek	Intermittent	Secondary	Intermittent flow

<b>Sand Creek Streams</b>				
West Fork Boundary Gulch	T52N R60W Section 33, 28	Intermittent	Secondary	Intermittent flow.
Shepherd Gulch	T51N R60W Section 4 to T52N R60W Section 29	Intermittent	Secondary	Intermittent flow.
Hospital Gulch	T51N R60W Section 5 to T52N R60W Section 19	Intermittent	Secondary	Intermittent flow. Difficult access.
East Fork Dugout Gulch	T52N R60W Section 6, 31	Ephemeral	Secondary	Ephemeral flow.
West Fork Dugout Gulch	T52N R60W Section 6, 31	Ephemeral	Secondary	Ephemeral flow.
Dugout Gulch	T52N R60W Sections 30, 19 T52N R61W Section 24	Perennial	Primary	Sufficient flow. Located adjacent to non-motorized trail – access probable.
Thompson Gulch	T52N R61W Section 36, 25	Ephemeral	Secondary	Ephemeral flow.
Unnamed Tributary to Sand Creek	T52N R61W Section 25	Ephemeral	Secondary	Ephemeral flow.
Sand Creek	T52N R61W Sections 26, 25, 24	Perennial	Primary	Sufficient Flow. Located next to road – access probable.
Sand Creek	Upstream from T52N R61W Section 35	Intermittent	Secondary	Intermittent flow. Access not likely due to lack of streamflow in summer months.
<b>South Fork Pine Creek Streams</b>				
Unnamed Tributary to South Fork Pine Creek	T55N R62W Section 18 to Forest Boundary	Perennial	Secondary	Difficult access to stream – unlikely to be contacted.
Unnamed Tributary to South Fork Pine Creek	T55N R63W Section 26 to Forest Boundary	Intermittent	Secondary	Intermittent flow and difficult access to stream.
<b>Sundance Creek Streams</b>				
Sundance Creek	T52N R63W Section 33 to Forest Boundary	Intermittent	Secondary	Intermittent flow
Reuter Canyon	T52N R63W Section 33 to Forest Boundary	Intermittent	Secondary	Intermittent flow
Unnamed Tributary to Reuter Canyon	T52N R63W Section 4 to confluence with Reuter Canyon	Intermittent	Secondary	Intermittent flow

\* Stream flow is based on field surveys conducted by the Black Hills National Forest Hydrology Department.

Figure A-3. USDA Forest Service, Intermountain Region (1 page).

10/14/13

State of Wyoming Mail - Comments on draft Recreation UAA



Lindsay Patterson <lindsay.patterson@wyo.gov>

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## Comments on draft Recreation UAA

1 message

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**Bevenger, Greg -FS** <gbevenger@fs.fed.us>

Mon, Sep 23, 2013 at 10:12 AM

To: "Lindsay.Patterson@wyo.gov" <Lindsay.Patterson@wyo.gov>

Cc: "Carlson, Joan Y -FS" <jycarlson@fs.fed.us>

Lindsay – I only have a few comments for you to consider.

Editorial – p. 28, section 3.5, paragraph 1, sentence 3 I believe should say 160,000 not 170,000...

Editorial – p. 34, section 6.0, paragraph 1, last sentence the number 77,946 514 I believe should be fixed... my guess is it should read 77,514...

Food for thought – consider stream temperature as a means for isolating primary... probably too late now and I know this was considered indirectly with a conclusion there's still a chance for ingestion but I think that risk is very low until stream temperature warms up mid-way down the falling limb of streams with a snowmelt dominated hydrograph (late July or so)... the temperature data Dan Isaacs, RMRS, is collecting may be a good data set... details at:

[http://www.fs.fed.us/rm/boise/AWAE/projects/stream\\_temp/stream\\_temperature\\_climate\\_aquatics\\_blog.html](http://www.fs.fed.us/rm/boise/AWAE/projects/stream_temp/stream_temperature_climate_aquatics_blog.html)

Please call if you have questions... thanks for the opportunity to comment...

*Gregory S. Bevenger, Regional Hydrologist*

*USDA Forest Service, Intermountain Region*

*324 25<sup>th</sup> Street, Ogden, UT 84401*

*801.625.5755 (desk)*

*801.917.0641 (cell)*

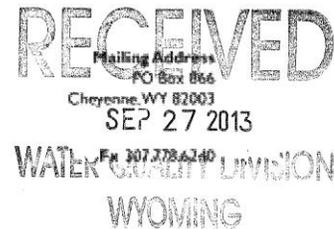
<https://mail.google.com/mail/u/0/?ui=2&ik=c54279a1ed&view=pt&cat=UAA%20Recreation&search=cat&th=1414b988bb221ebd>

1/2

Figure A-4. Wyoming Mining Association (2 pages).

Physical Address  
2601 Central Avenue  
Cheyenne, WY 82007

Ph 307.635.0331



September 24, 2013

Ms. Lindsay Patterson  
Wyoming Department of Environmental Quality  
Water Quality Division  
Herschler Building 4-W  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

**RE: Draft Categorical Use Attainability Analysis for Recreation**

Dear Ms. Patterson:

The Wyoming Mining Association (WMA) would like to take the opportunity to comment on the Draft Categorical Use Attainability Analysis (DCUAA) for Recreation. The Wyoming Mining Association is a statewide trade organization that represents and advocates for 39 mining company members producing bentonite, coal, trona and uranium, as well as one company currently developing rare earth minerals. WMA also represents 129 associate member companies, two railroads and 180 individual members.

WMA members operate a variety of mining facilities in WY and support the State's efforts to develop a method to identify streams that do not support primary contact recreation use and the reclassification of these streams. After reviewing the draft DCUAA, we would like to suggest a couple of additional improvements which would help improve the accuracy of the model. Please see discussion below.

*Primary Contact Due to Access Classification*

The use of census blocks to determine the population accessibility to streams can be misleading and cause stream segments to be classified incorrectly. The census blocks do not provide a true representation of the actual population density within the block. An improvement could be made to this determination factor through the use of aerial photography which is readily available via the internet. Aerial photography could be used as a final step to determine the census block accuracy around the perimeter where the blocks generally overstate the actual population density.

*Identification of Low Flow Streams in Wyoming*

The DCUAA uses depth of flow and watershed area to identify "low flow" streams where primary contact recreation is not an attainable use. The draft methodology provides a reasonable method to streamline this determination. However, there appear to be streams that should have been classified as low flow which were not. Comments submitted by member mining companies provide specific details.

Identification of low flow stream segments could be further improved through the use of USGS stream flow data. Site specific stream flow data collected by many companies could also be used when available to ensure that the correct classification is made.

[www.wma-minelife.com](http://www.wma-minelife.com)

*Playas*

On the electronic map associated with the DCUAA, numerous large isolated playas are shown as lakes and ponds with a primary contact status. These playas are shown separately as internal drainage basins on USGS topographic maps. These playas should be removed from the exhibit or classified separately and as secondary contact features.

*Conclusion*

WMA appreciates the opportunity to submit these comments on the DCUAA for Recreation. Improvements to the DCUAA methodology should be made to ensure that the streams are correctly classified. Improvements should include the use of aerial photography in the determination, use of actual flow data, where available, for making the low flow determination, and to show playas on the map and classify them separately from lakes and ponds.

Sincerely,  
WYOMING MINING ASSOCIATION



Marion Loomis  
Executive Director

Figure A-5. Peabody Energy (9 pages).



**RECEIVED**  
Peabody Powder River Operations, LLC  
Caller Box 3034  
Gillette, Wyoming 82717-3034  
(307) 687-3900  
SEP 26 2013  
WATER QUALITY DIVISION  
WYOMING

September 24, 2013

Ms. Lindsay Patterson  
Wyoming Department of Environmental Quality  
Water Quality Division  
Herschler Building 4-W  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

**RE: Draft Categorical Use Attainability Analysis for Recreation**

Dear Ms. Patterson:

Peabody Energy wishes to comment on the Draft Categorical Use Attainability Analysis (DCUAA) for Recreation. Peabody Energy operates four active coal mines in Campbell and Converse Counties and maintains a closed mine site near Hanna. The Use Attainability Analyses for Recreation can have a profound effect on the water quality criteria applicable to these mines if it is incorrectly constructed.

*Primary Contact Due to Access Classification*

It is difficult to determine how the WDEQ/WQD arrived at the Primary Contact Due to Access classification for a number of streams in the Gillette and Hanna areas based on the criteria listed in the text and since the census blocks are not shown on the electronic map included with the DCUAA. It is probable that there are many more examples of a similar nature. Many of the streams listed as Primary Contact Due to Access are more than 1.0 mile from populated areas. Rather than using census blocks that are created to improve the efficiency of census data acquisition, and which can grossly misrepresent population density, it is better to use aerial photo information to determine the Primary Contact Due to Access classifications since that information is more determinative of population density, less subjective, and is readily available on the electronic map.

*Porcupine Creek*

Lower Porcupine Creek in southeastern Campbell County and northeastern Converse County is classified as Primary Contact Due To Flow, based on average flow of 7.24 cfs as estimated by the National Hydrologic Dataset (NHD). Under the DCUAA, the flow threshold for determining Primary Contact Due to Access is 6.0 cfs. Peabody's North Antelope Rochelle Mine has maintained continuous flow monitors on Porcupine Creek upstream and downstream of the mine since 1980. The data is in the possession of the Wyoming Department of Environmental Quality / Land Quality Division. At the upstream station, GS-1, there have been 8,220 mean daily flow measurements averaging 0.148 cfs. The primary period of flow occurred when large amounts of coal bed methane discharge was generated upstream of the mine. Total flow to the mine has averaged less than 10 acre-feet per year despite the upstream drainage area of over 100 square miles. This low flow total is attributed to low precipitation, sandy soils, and the very large amount and volume of stock ponds on the creek and tributaries upstream of the mine. .

At the downstream station, GS-5, mean daily flow from 8,201 measurements has averaged 0.352 cfs. Most of this flow occurred between 1983 and 1999 when the mine was discharging large amounts of pit water. Porcupine Creek downstream of the mine is frequently dry with discontinuous stagnant pools that are very saline. Porcupine Reservoir, near the confluence of Porcupine and Antelope Creeks, is also usually dry and is only utilized by livestock and wildlife.

#### *Rawhide and Little Rawhide Creeks*

Rawhide Creek, north of Gillette, is also classified as Primary Contact Due To Flow, based on average flow of 8.95 cfs as estimated by the NHD. Little Rawhide Creek, a tributary of Rawhide Creek, is listed as primary by extension (to Rawhide Creek). Peabody's Rawhide Mine has maintained continuous flow monitors since 1979 on Rawhide Creek upstream and downstream of the mine as well as continuous monitoring on Little Rawhide Creek between 1982 and 1993. The data is also in the possession of the Wyoming Department of Environmental Quality/Land Quality Division.

At station USRC, upstream of the Rawhide Mine on Rawhide Creek, mean daily flow since 1980 has averaged 2.20 cfs. At station L-Rawhide, on Little Rawhide Creek at the confluence with Rawhide Creek, the mean daily flow between 1982 and 1993 averaged 0.41 cfs. And, at station DSRC, downstream of the Rawhide Mine on Rawhide Creek near the confluence with the Little Powder River, mean daily flow since 1979 has averaged 3.11 cfs.

For Porcupine, Rawhide, and Little Rawhide Creeks, actual flow data should be used rather than the NHD estimates as this data is much more accurate. Actual USGS flow monitoring data should also be used for streams across Wyoming for flow determination where it is available.

#### *Playas*

On the electronic map associated with the DCUAA, numerous large isolated playas are shown as lakes and ponds with a primary contact status. These playas are shown separately as internal drainage basins on USGS topographic maps. We request that these playas be removed from the exhibit or classified separately.

#### *Conclusion*

Peabody Energy appreciates the opportunity to comment on the Draft Categorical Use Attainability Analysis for Recreation. We request that WDEQ/WQD revise the determination method for the Primary Recreation Due to Access classification to include aerial photography in the determination, to use actual flow data, where available, for determining the Primary Recreation Due to Flow classification, and to show playas on the map and classify them separately from lakes and ponds.

Please call me at 307-687-3924 or e-mail me at [pmurphree@peabodyenergy.com](mailto:pmurphree@peabodyenergy.com) if you have any questions or comments.

Sincerely,



Philip A. Murphree  
Senior Hydrologist



Peabody Powder River Operations, LLC  
Caller Box 3034  
Gillette, Wyoming 82717-3034  
(307) 687-3900

RECEIVED  
SEP 26 2013  
WATER QUALITY DIVISION  
WYOMING

September 24, 2013

Ms. Lindsay Patterson  
Wyoming Department of Environmental Quality  
Water Quality Division  
Herschler Building 4-W  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

**RE: Request for Recreational Use Attainability Determination for Dry Fork Little Powder River, Campbell County**

Dear Ms. Patterson:

Peabody Energy recently reviewed the Draft Categorical Use Attainability Analysis for Recreation (Draft CUAA). One of the streams that our Rawhide Mine, located north of Gillette, discharges to is the Dry Fork of the Little Powder River (Dry Fork). The Draft CUAA places this stream in the "Primary Contact Recreation due to Access" category. Dry Fork does not meet the requirements or thresholds for a primary contact recreation stream. Moreover, the classification could result in water quality standards which are lower than the native stream conditions at various times of the year. Peabody requests that WDEQ/WQD conduct a Use Attainability Analysis to reclassify Dry Fork for secondary contact recreation.

The mine's primary discharge point to Dry Fork currently has an e-coli limit of 630 colonies / 100 mL between April 1 and September 30. By listing the stream as primary contact recreation, the future limit will be lowered to 126 colonies / 100 mL between May 1 and September 30. E-coli concentrations may often exceed 126 colonies /100 mL in natural water bodies during the summer in Campbell County, especially where waterfowl and wildlife are common or livestock grazing is practiced.

The Main Reservoir at Rawhide Mine receives discharge from the mine's sewage system as well as runoff from land on which grazing occurs. Natural biologic activity in the reservoir water and sediments and contributing stream channels generates e-coli at various times of the year, sometimes in excess of the 126 colonies / 100 ml. Maintaining e-coli concentrations below this standard during the warm periods between spring and fall without the input of large amounts of chlorine may not be possible. The expected difficulty in meeting this standard will be compounded by the residual chlorine discharge limit that the mine is obligated to meet.

Under the Draft CUAA, Dry Fork is considered a primary contact stream due to access. The access determination was apparently made because the stream is within 1.0 mile of a census block with greater than 100 persons per square mile population density and the possibility that the stream could be easily accessed by children or others. This census

block cuts across subdivisions in and around Gillette. However, as will be demonstrated in this document, there is little public access to Dry Fork. Furthermore, there are few pools available for recreation opportunities, the stream is isolated from significantly populated areas, and average flow is below the 6 cubic feet per second (cfs) threshold considerable suitable in the Draft CUAA for primary contact recreation.

*Setting and Land Ownership, Use, and Access*

Dry Fork begins in the clinker (scoria or porcelanite) hills near the Dry Fork Mine and in the uplands south of the Dry Fork Mine. Flow from Moyer Spring in the clinker hills creates the majority of the perennial flow in Dry Fork. Most of the upper reaches of the Dry Fork drainage basin are on the permit areas of the Dry Fork and Rawhide Mines and the Dry Fork Power Plant. Public access to these permitted areas is restricted. Photos 1 and 2 show aerial photos of the Dry Fork vicinity.

Moyer Reservoir, located on Dry Fork at the Dry Fork Mine in the SE1/4SE1/4 of Section 24, T51N, R72W and is fed primarily by water from Moyer Spring (shown in Photo 3). Mine staff report that the reservoir is permitted for fishing by mine employees and their families, Although the reservoir is stocked annually, the fish cannot survive downstream of the reservoir in the shallow, vegetation-choked stream. Average flow from the spring through the reservoir is approximately 1.4 cfs according to the Dry Fork Mine.

Downstream of the Rawhide Mine, Dry Fork flows through grazing lands to the confluence with the Little Powder River located on the lands of the Mader Family. Nearly all of the lands adjoining Dry Fork, including grazing, irrigated, and industrial lands, are fenced from public access. Except for state sections, all of the lands along Dry Fork are private. The Dry Fork floodplain is used for grazing, except within the active mine areas.



**Photo 1: Dry Fork in Right Portion of 2013 Aerial Photo Flowing North Past Dry Fork (Bottom Right) and Rawhide (Upper Left) Mines. Heritage Village Subdivision in Bottom Center of Photo. Section Lines Provide Scale**



**Photo 2: 2012 Aerial Photo of Dry Fork at Rawhide Mine. Dry Fork Power Plant in Lower Center of Photo and Section Lines Added for Scale.**



**Photo 3: Moyer Reservoir in SE1/4 SE1/4 Section 24, T51N, R72W. The reservoir is primarily fed by water from Moyer Spring.**

*Stream Flow and Geomorphology*

Flow has been measured on Dry Fork at the Rawhide Mine since 1978. The flow meters operate between April 15 and October 15, which including WDEQ's potential recreation period. This data is on file with the Wyoming Department of Environmental Quality/Land Quality Division. At station UDFC, near the mine's upstream permit boundary, the average flow since 1978 has been 0.97 cfs. At UDFC, average flow has been greater than 6 cfs 0.3 percent of the 6,844 days of measurement, flow has been greater than 3 cfs 1.4 percent of the time, and flow has been less than 1 cfs 73 percent of the time. At station DDFC, near the mine's downstream permit boundary, the average flow has been 1.73 cfs. At DDFC, flow has been greater than 6 cfs 1.1 percent of the 6,425 days of measurement, greater than 3 cfs 9.0 percent of the time, and less than 1 cfs 62 percent of the time.

Throughout the course of Dry Fork, the stream is deeply incised with thick vegetation in most sections of the stream channel. The flow depth in most of the stream is usually less than 1.5 feet. The total drainage area of Dry Fork is approximately 17 square miles and the length of the main stem is approximately 4.7 miles. South of the Dry Fork Mine, the drainage area is primarily composed of grassy swales with few defined channels. Photos 4 through 6 show Dry

Fork from downstream of Moyer Spring to just downstream of the confluence with Little Powder River. The flow characteristics and geomorphology of this portion of the stream are not sufficient to support primary recreation on Dry Fork.

*Isolation of Dry Fork from Populated Areas*

Except for the lands of the Mader family, there are no residences in the vicinity of the defined stream channel of Dry Fork. The closest Gillette subdivision, Heritage Village, is approximately 4.2 miles from a tributary of Dry Fork and 5.1 miles from the main channel. The subdivision can be seen on Photo 1. Due to fencing of the surrounding lands at the mine sites and power plant, there is no access to the stream from the smaller subdivided lands surrounding Gillette.



**Photo 4: Dry Fork Upstream of Rawhide Mine and WY State Highway 59. Burlington Northern Santa Fe Railroad Tracks and Dry Fork Mine Visible in Photo.**



**Photo 5: Dry Fork Downstream of Rawhide Mine and WY State Highway 59. Rawhide Mine Silos and Access Road Visible in Photo.**



**Photo 6: Dry Fork Passing Through Mader Family Lands East of WY State Highway 59 Downstream of Confluence with Little Powder River.**

*Conclusion*

Dry Fork Little Powder River does not meet the definition of a stream for Primary Contact Recreation due to Access category. The actual average flows fall well below the threshold needed to support primary recreation. Ownership and use of the lands adjacent to the channel provide little or no opportunity for the public to access these lands. Moreover, the population density of the area adjacent to the stream is grossly overstated by inappropriate use of census block data. Therefore, the WDEQ/WQD should conduct a Use Attainability Analysis to reclassify Dry Fork Little Powder River for secondary contact recreation.

Please call me at 307-687-3924 or e-mail me at [pmurphree@peabodyenergy.com](mailto:pmurphree@peabodyenergy.com) if you have any questions or comments.

Sincerely,

Philip A. Murphree  
Senior Hydrologist

Figure A-6. Environmental Protection Agency (2 pages).



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8**

1595 Wynkoop Street  
DENVER, CO 80202-1129  
Phone 800-227-8917  
<http://www.epa.gov/region08>

September 25, 2013

Ref: 8EPR-EP

Lindsay Patterson  
Division of Water Quality  
Wyoming Department of Environmental Quality  
Herschler Building 4W  
122 W. 25<sup>th</sup>, 4<sup>th</sup> Floor  
Cheyenne, WY 82002

Dear Ms. Patterson:

The U.S. Environmental Protection Agency (EPA) has reviewed the Wyoming Department of Environmental Quality's (WDEQ) August 6, 2013 public notice of the Draft Categorical Use Attainability Analysis for Recreation and supporting documentation. The draft UAA uses Geographic Information System (GIS) data to identify streams with insufficient flow to attain a primary contact recreation use.<sup>1</sup> In general, the EPA's preliminary thinking is that WDEQ's approach would be consistent with 40 CFR § 131.10(g)(2). We appreciate the efforts of WDEQ to address our comments throughout the three years of dialogue about this project.

The EPA regulations at 40 CFR part 131 interpret and implement Clean Water Act (CWA) section 101(a)(2) and 303(c)(2)(A) to require that the uses specified in section 101(a)(2) of the CWA, which includes "recreation in and on the water," are presumed attainable unless a state or tribe affirmatively demonstrates through a UAA that the use is not attainable as provided by one of the six factors at 40 CFR § 131.10(g).<sup>2</sup> To support an attainability decision under 131.10(g), the EPA's suggested approach is for states to also consider a suite of factors, such as actual use, existing water quality, water quality potential, access, recreational facilities, location, safety considerations, and physical conditions.<sup>3</sup> In Wyoming, currently all waters of the state are designated for primary contact during the summer recreation season (May 1 through September 30) unless a site-specific UAA was completed and the use change to secondary contact recreation was approved by the EPA. The scope of the Draft Categorical UAA for Recreation is limited to low flow streams (mean annual flow < 6 cubic feet/second). Lakes, reservoirs, and ponds are not included in the UAA and remain designated for primary contact recreation. In addition, no full recreational use removals are proposed. Where the GIS data layers representing flow, populated places, schools, campgrounds, and recreation areas indicate a stream cannot attain primary contact recreation, the state is proposing to adopt secondary contact recreation. The practical effect of changing the designated use from primary to secondary contact recreation is that the applicable *E. coli*

<sup>1</sup> Protects humans from gastrointestinal illness where there is the potential for ingestion or immersion. See *Wyoming Water Quality Rules and Regulations*, Chapter 1, Section 2.

<sup>2</sup> See 63 Fed. Reg. 36742, 36749 (July 7, 1998) and 78 Fed. Reg. 54518, 54522 (September 4, 2013).

<sup>3</sup> See 63 Fed. Reg. 36742, 36756 (July 7, 1998).

criterion changes from a geometric mean of 126 organisms per 100 milliliters to a geometric mean of 630 organisms per 100 milliliters during the summer recreation season.

Our understanding is that following the close of the current comment period (September 30, 2013), WDEQ will make revisions based on comments received and provide another public comment period. The EPA is particularly interested in seeing the public feedback on pools within the low flow streams addressed by the UAA that are used for or would support primary contact recreation. Our understanding is that WDEQ proposed primary and secondary use designations based on the best information available to the state, but feedback from people that live near the streams at issue is critical in making the right environmental decision. We anticipate that some parties may take issue with the conservatism of the model, and we want to emphasize that such conservatism was a key factor in the EPA supporting this innovative approach, both in terms of the flow methodology and the buffer zones around populated areas and areas where children may be present.

Primary contact recreation typically includes activities where ingestion is likely and there is a high degree of bodily contact with the water, including swimming, bathing, wading and water play by children. Children may be more exposed and/or more sensitive to pathogens in recreational waters. Children exhibit behaviors that increase their exposure to environmental contaminants, and the immature immune systems of children can also leave them particularly vulnerable to the effects of environmental agents. Therefore, the EPA supports WDEQ's use of a buffer system that appropriately protects this vulnerable population.

As WDEQ acknowledges in the UAA, recreational uses change over time. This is one reason why it is important the public remain engaged after WDEQ completes its public process for this UAA. Pursuant to the *Wyoming Water Quality Rules and Regulations*, Chapter 1, Sections 33 and 34, "any person at any time" may petition WDEQ for a designated use change and we encourage parties to work closely with WDEQ to ensure sufficient data are collected and submitted.

In summary, the EPA's preliminary thinking is that WDEQ's draft approach for identifying streams with insufficient flow to support a primary contact recreation use would be consistent with 40 CFR § 131.10(g)(2). The EPA will consider the public comments and the final submission of the state prior to making a final decision under CWA § 303(c). If you have any questions, please call Tonya Fish on my staff at (303) 312-6832.

Sincerely,



Sandra Spence, Chief  
Water Quality Unit

Figure A-7. Wyoming Association of Conservation Districts (2 pages).



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**Wyoming Association of Conservation Districts**  
517 E. 19th Street - Cheyenne, WY 82001 - Phone: 307-632-5716 - Fax: 307-638-4099  
www.conservewy.com

September 26, 2013

Lindsay Patterson  
Wyoming Department of Environmental Quality  
Herschler Building, 4-W  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

*RE: Categorical Use Attainability Analysis for Recreation; August 2013 draft*

Dear Ms. Patterson,

The Wyoming Association of Conservation District has reviewed the August 6, 2013 public notice of the Draft Categorical Use Attainability Analysis for Recreation and supporting documentation. The Association welcomes the opportunity to review this draft and its associated criteria and commends the Department of Environmental Quality for this innovative approach to addressing the recreation use support designations of Wyoming's waters. As DEQ is aware, the local Conservation Districts have invested considerable resources to assist with the development of this model and to assist DEQ in verifying the accuracy level based on collection of data and information. Specifically, the Districts collected site specific data and information on 720 randomly selected sites to validate the models assumptions.

The Association has received feedback from districts who have reviewed their field data collected on the randomly selected sites in 2010 to the categorization presented in the UAA model and they have found a high level of accuracy and correlation between the statewide UAA and the site specific data collected. In fact, one district reported a 100 percent accuracy level. WACD believes there will be isolated incidents where a more thorough site specific UAA may be necessary however this will be limited.

The Association would suggest the following criteria be evaluated in the model:

**Page 30: Section 4.2 Data Layers, Buffers, and Weightings and Table 1. Datasets, buffers, and weighting used in the categorical UAA for recreation**

**COMMENT:**

CONSERVATION – DEVELOPMENT – SELF-GOVERNMENT

*“Buffers distances were based on a general understanding of distances children and / or members of the public travel from roads, trails, and recreation sites.”*

WACD agrees with the datasets and the majority of the buffers of various distances methodology used to identify default primary 24k areas and 100k NHD streams for primary contact recreation. However, WACD questions the 2.5 Mile Buffer distance and weighting criteria for Established Recreation Areas, Trailheads and Dispersed Campsites which overlap with private lands and exhibit low flows. WACD believes that in these instances where 2.5 mile buffers overlay with private lands, and exhibit less than 2 cfs the weighting criteria's should be 0.

**Page 33: Section 5.0 Extensions**

**COMMENT:**

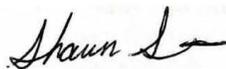
WACD recommends in situations where an extension's headwaters are located on private lands and exhibit less than 2 cfs that the criteria for that segment be changed to Secondary Contact Recreation or that the weighting for that segment be listed at 0.

**Page 37; 7.0 CONCLUSIONS**

**COMMENT:** WACD appreciates the opportunity for site specific UAA's to be submitted should a recreation use designation be inaccurate.

Again, DEQ should be commended for this effort. We look forward to continue to work with DEQ on the mutual goal of maintaining and improving Wyoming's watershed health. This effort will ensure that the time, energy and resources are spent in an appropriate manner to protect the human health of Wyoming's citizens.

Sincerely,



Shaun Sims  
President

Cc: WACD Board of Directors  
Conservation Districts  
Wyoming Department of Agriculture

Figure A-8. Wyoming Department of Agriculture (1 page).



Wyoming  
DEPARTMENT OF Agriculture

Matthew H. Mead, *Governor*  
Jason Fearneyhough, *Director*  
2219 Carey Ave. • Cheyenne, WY 82002  
Phone: (307) 777-7321 • Fax: (307) 777-6593  
Web: agriculture.wy.gov • Email: wda1@wyo.gov

---

*The Wyoming Department of Agriculture is dedicated to the promotion and enhancement of Wyoming's agriculture, natural resources and quality of life.*

September 27, 2013

Wyoming Department of Environmental Quality  
Water Quality Division  
Attn: Lindsay Patterson  
122 West 25<sup>th</sup> Street  
Herschler Building, 4<sup>th</sup> Floor West  
Cheyenne, WY 82002

Dear Ms. Patterson,

Following are the Wyoming Department of Agriculture's (WDA) comments pertaining to the Wyoming Department of Environmental Quality (WDEQ) Draft Use Attainability Analysis (UAA) Model for Recreation.

Our comments are specific to our mission within state government: dedication to the promotion and enhancement of Wyoming's agriculture, natural resources, and quality of life. As this project impacts our agriculture industry, our natural resources, and the welfare of our citizens, we believe it is important you continue to inform us of proposed actions and decisions and continue to provide us the opportunity to express pertinent issues and concerns.

The WDA supports the WDEQ Draft UAA for Recreation, which identifies streams in the state not supporting primary contact recreational activities such as swimming based on insufficient flow and distance from recreation sites frequented by the public. The UAA provides a significant opportunity to designate water bodies as secondary points of contact recreation as intermittent, ephemeral and smaller water bodies that truly are not primary points of contact recreation. If approved this UAA for Recreation model would greatly decrease the need for future formal UAA's. We also believe the design of this model adequately errs on the side of primary contact recreation when evaluating streams for human protection.

We strongly support WDEQ in the development of their proposed UAA Model for Recreation. We believe the approval of this strategy will not only benefit the general public through the continued listing of primary recreation contact streams, but also through the decreased need of future UAA's on streams having very little to no likelihood for being primary contact streams. We appreciate the opportunity to comment and are willing to assist in any way possible.

Sincerely,

A handwritten signature in blue ink that reads 'Jason Fearneyhough'. The signature is fluid and cursive, with the first name being the most prominent.

Jason Fearneyhough  
Director

JF/jc

CC: Governor's Policy Office  
Wyoming Association of Conservation districts  
Wyoming Board of Agriculture

Wyoming Stock Growers Association  
Wyoming Wool Growers

*Equal Opportunity in Employment and Services*

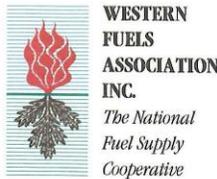
**BOARD MEMBERS**

Jana Ginter, *District 1* • Jim Hodder, *District 2* • Shaun Sims, *District 3* • John Moore, *District 4* • Alison Lass, *District 5*  
Bryan Brost, *District 6* • Jim Price, Jr., *District 7*

**YOUTH BOARD MEMBERS**

Patrick Zimmerer, Southeast • Richard Schlenker, Northwest • John Hansen, Southwest • Cameron Smith, Northeast

Figure A-9. Western Fuels Association, Inc. (10 pages).



RECEIVED  
SEP 30 2013  
WATER QUALITY DIVISION  
WYOMING  
September 26, 2013

Ms. Lindsay Patterson  
Wyoming Department of Environmental Quality  
Water Quality Division  
Herschler Building 4-W  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

**RE: Request for Recreational Use Attainability Determination for Dry Fork Little Powder River and Moyer Creek, Campbell County.**

Dear Ms. Patterson:

Western Fuels Association recently reviewed the Draft Categorical Use Attainability Analysis for Recreation (Draft CUAA). Two of the streams that our Dry Fork Mine, located north of Gillette, discharge into are the Dry Fork of the Little Powder River (Dry Fork), and Moyer Creek. The Draft CUAA places both streams in the "Primary Contact Recreation due to Access" category. We believe neither are primary contact recreation streams. Moreover, the classification could result in water quality standards which are lower than the native stream conditions at various times of the year. Western Fuels requests a change in the designation for both these streams.

While the mine does not currently discharge effluent containing e-coli limit, the mine has an approved mine life of approximately 70 more years. We expect we may need to discharge sewage effluent at some future date, and are concerned that this primary contact for recreation designation could result in a lowering of the allowable limits for e coli to levels that are difficult for us to meet in the future. We are aware that at the Rawhide Mine, which is located immediately downstream of the Dry Fork Mine, their primary discharge point to Dry Fork currently has an e-coli limit of 630 colonies / 100 mL between April 1 and September 30. By listing the stream as primary contact recreation, their future limit will be lowered to 126 colonies / 100 mL between May 1 and September 30. E-coli concentrations may often exceed 126 colonies /100 mL in natural water bodies during the summer in Campbell County, especially where waterfowl and wildlife are common or livestock grazing is practiced. The Rawhide Mine is concerned about their ability to meet this low standard in the future. We are also concerned that it may affect our ability to obtain permits and meet discharge standards from our facility in the future.

Under the Draft CUAA, Dry Fork and Moyer are considered a primary contact stream due to access. The access determination was apparently made because the streams are within 1.0 mile of a census block with greater than 100 persons per square mile population density and the possibility that the streams could be easily accessed by children or others. This census block cuts across subdivisions in and around Gillette. However, as will be demonstrated in this document, there is no public access to any portion of the Dry Fork or Moyer. Furthermore, there are few pools available for recreation opportunities, the streams are isolated from significantly populated areas, and

1 | Page

Powder River Basin Operations Office ■ 2201 S. Douglas Highway, Suite 130 ■ Gillette WY 82718 ■ Telephone 307/682-8051 ■ Fax 307/686-6355

average flow for both are below the 6 cubic feet per second (cfs) threshold considerable suitable in the Draft CUA for primary contact recreation. Based on these limiting factors, we request that WDEQ/WQD conduct a Use Attainability Analysis to reclassify both Dry Fork and Moyer Creek for secondary contact recreation.

*Setting and Land Ownership, Use, and Access*

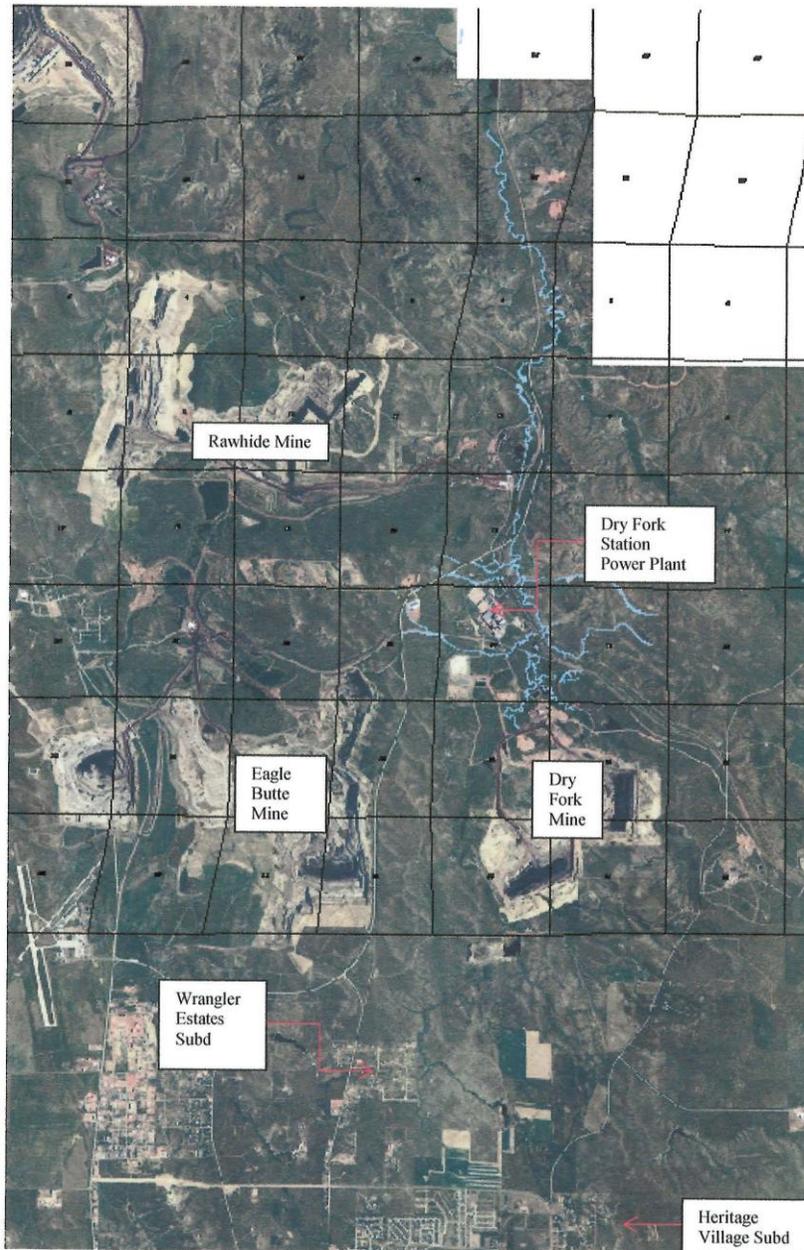
Dry Fork begins in the clinker (scoria or porcelanite) hills near the Dry Fork Mine and in the uplands south of the mine. Flow from Moyer Spring in the clinker hills creates the majority of the perennial flow in Dry Fork. All of the upper reaches of the Dry Fork channel are on the permit areas or lands owned by the Dry Fork and Rawhide Mines and the Dry Fork Station Power Plant. All lands within mine and power plant permit areas are blocked from public access, as required by the air permits for the both types of facilities. There is no public access to any reaches of these two creeks from their headwaters to well beyond the mine permit boundaries, many miles north of the subdivisions. Photos 1 and 2 are aerial photos showing the Dry Fork vicinity.

Moyer Reservoir, located on Moyer Creek at the Dry Fork Mine in the SE1/4 SE1/4 of Section 24, T51N, R72W and permitted for recreational fishing by mine employees and their families, is fed primarily by water from Moyer Spring (shown in Photo 3). The fish in the reservoir are stocked annually and cannot survive downstream of the reservoir in the shallow vegetation choked stream. Average flow from the spring through the reservoir is approximately 0.9 cfs, as measured at CR-1 station.

Dry Fork Mine has strict rules on the use of the Moyer Reservoir for fishing. Access is strictly limited to those individuals employed by the mine and their immediate families. All must pass through the mine's security facility prior to be allowed in to the pond. No wading, swimming, or drinking of the water are allowed. The mine has installed a walkway over the creek, and has requirements to use the provided walkway to cross the creek. Wash up facilities are provided. This privately stocked and privately managed facility is not accessible to the public. Dry Fork Mine is under no obligation to allow this fishing program, and can close the pond at any time. It will be permanently closed if that is what the WQD requires to prevent either creek from being classified as primary contact use attainability.

Moyer Creek merges into, and becomes the main water source for the Dry Fork while still on the Dry Fork Mine. Downstream of the Dry Fork Mine, the Dry Fork flows through mine owned and access restricted grazing lands to the point where it enters the Rawhide Mine. From the Rawhide Mine, the Dry Fork confluence with the Little Powder River located on the lands of the Mader Family. Nearly all of the lands adjoining Dry Fork, including grazing, irrigated, and industrial lands, are fenced from public access. There are no public access areas along the flowing portions of the Dry Fork or Moyer Creek. The Dry Fork and Moyer Creek floodplain are used for grazing, except within the active mine areas.

As shown on photo 1, the Dry Fork and Moyer Creek are located approximately 3 miles from the nearest subdivision (the Wrangler Estates subdivision). The Wrangler Estates subdivision homes are the nearest public dwellings to these creeks. Three miles is well beyond the one mile requirement for primary contact recreation use attainability classification.



**Photo 1: Dry Fork in Right Portion of 2013 Aerial Photo Flowing North Past Dry Fork (Bottom Right) and Rawhide (Upper Left) Mines. Heritage Village Subdivision in Bottom Center of Photo. Section Lines Provide Scale**



**Photo 2: 2012 Aerial Photo of Dry Fork at Rawhide Mine. Dry Fork Power Plant in Lower Center of Photo and Section Lines Added for Scale.**



**Photo 3: Moyer Reservoir in SE1/4 SE1/4 Section 24, T51N, R72W. The reservoir is primarily fed by water from Moyer Spring.**

#### *Stream Flow and Geomorphology*

Flow has been measured on both Dry Fork and Moyer at the Dry Fork Mine since the late 1970's. The flow meters operate between April 15 and October 15, which includes WDEQ's potential recreation period. This data is on file with the Wyoming Department of Environmental Quality/Land Quality Division. The monitors confirm that the Dry Fork is ephemeral until it merges with Moyer Creek.

##### *a. Moyer Creek*

Moyer Creek is only about 1 mile in length before it merges into and becomes part of the Dry Fork Little Powder River. It is entirely situated on Dry Fork Mine property. It's total contributing drainage basin is about 2 square miles. Moyer Creek is spring fed, with the spring originating on Dry Fork Mine property, and the spring being fed from scoria clinker (porcelenaite) formations. The stream is incised with thick vegetation in most sections of the stream channel. The flow depth in most of the stream is usually less than 1.0 feet (See Photo 4). There are three pools on along Moyer Creek. Two are formed by the DFM CR-1 and CR-2 flow recording

stations. The third is the Moyer Reservoir discussed previously. All are in the Dry Fork Mine permit boundary, restricted from public access.

Monitor CR-1 is the most reliable recording monitor along Moyer Creek. The best available flow information for station CR-1 is found in the WDEQ/LQD August 2013 CHIA for the Dry Fork Mine Amendment 2 (CHIA 33), summarized as follows:

*The corrected mean daily discharge record for Moyer Springs at station CR-1 is plotted on **Figure 49**. The record confirms the relatively consistent flow of the springs over time. The average daily flow for the period of record is 0.89 cfs, with a standard deviation of 0.16 cfs. Flows at the station are dominated from discharge from the springs, as very few runoff events are apparent from the hydrograph. The maximum mean daily discharge of 5.96 cfs occurred in July 1982 (**Figure 49**); the same storm also caused high runoff on stations downstream on the Dry Fork LPR.*

(please see CHIA 33 to view Figure 49). According to a summary of the flow data provided by the LQD, Station CR-1 on Moyer Creek flow rates were above 3 cfs only 0.01% of the time (from 1979 – 2012), and were never above 6 cfs.

Dry Fork Mine CR-2 monitor is located in Moyer Creek before the confluence with the Dry Fork Little Powder River. It is not as reliable a monitor and is not normally used for flow analysis by the LQD. According to a recent analysis by LQD of the flows at Station CR-2, for the period from 2000 through 2012, CR-2 shows mean daily flow rates below 3 cfs for all but 11.7% of the time. Flows were below 6 cfs for all readings except 0.6% of the readings.



**Photo 4: Moyer Creek downstream of CR-1, before confluence with Dry Fork Powder River. Dry Fork Mine loadout facility visible in Photo.**

b. Dry Fork Little Powder River

CHIA 33 discusses the flows in the Dry Fork Little Powder River above the confluence with Moyer Creek, as follows:

*Streamflow monitored on the Dry Fork LPR at Eagle Butte Mine station EB-11 upstream of the confluence with Moyer Springs Creek illustrate the effect of Moyer Springs on the flow regime of the Dry Fork LPR. From April 2000 to September 2008, flow was only recorded during 25 days, or 0.4 percent of the period.*

The Dry Fork Mine CR-4 monitor is located in the Dry Fork after the confluence with Moyer Creek, downstream of the Dry Fork Mine, and upstream of the Rawhide Mine. This is also not a very reliable monitor, and is not typically used by LQD for flow analysis purposes. According to a recent summary of the Station CR-4 data, for the period from 2000 through 2012, CR-4 shows average daily flow rates below 3 cfs for all but 4.9% of the time. Flows were below 6 cfs for all readings except 1.1% of the readings.

Downstream of the Dry Fork Mine, the Rawhide Mine operates several monitors. CHIA 33 contains the following summary of the downstream Rawhide Mine stations UDFC and DDFC:

*Monitoring at UDFC and DDFC from 2000 to 2011 showed that flows were mostly perennial during the seven month period when the gages were active (April through October), and this flow regime is similar to the baseline period at the stations. Flows averaged 0.97 cfs at UDFC and 2.79 cfs at DDFC over the 2000-2011 period. The average for UDFC is very similar to the average from the baseline period, while the DDFC average is approximately 65 percent higher than the baseline average. The Rawhide Mine indicates that pit pumpage can supplement flows, although peak flows are attenuated due to storage reservoirs (Rawhide Mine Permit, 2013). In addition, six events with mean daily flows greater than 50 cfs occurred from 2006 to 2011. A storm with 3.31 inches of precipitation in May 2007 resulted in a maximum mean daily discharge of 347 cfs at DDFC. The maximum peak discharges for this event were 514 cfs at UDFC and 882 cfs at DDFC (Rawhide Mine Permit, 2013). The 882 cfs at DDFC is approximately a 25 to 50-year event, as predicted by the regression equations of Miller (2003).*

Throughout the course of Dry Fork, the stream is deeply incised with thick vegetation in most sections of the stream channel. The flow depth in most of the stream is usually less than 1.5 feet. The total drainage area of Dry Fork is approximately 17 square miles and the length of the main stem is approximately 4.7 miles. South of the Dry Fork Mine, the drainage area is primarily composed of grassy swales with few defined channels. Photos 4 through 6 show Dry Fork from downstream of Moyer Spring to just downstream of the confluence with Little Powder River. The flow characteristics and geomorphology of this portion of the stream are not sufficient to support primary recreation on Dry Fork.



**Photo 5: Dry Fork Downstream upstream of merger with Moyer Creek, on Dry Fork Mine property.**



**Photo 6: Dry Fork at confluence with Moyer Creek, on Dry Fork Mine property.**



**Photo 7: Dry Fork downstream of confluence with Moyer Creek, on Dry Fork Mine property.**

*Isolation of Dry Fork from Populated Areas*

Except for the lands of the Mader family, there are no residences in the vicinity of the defined stream channel of Dry Fork. As shown on Photo 1, the closest Campbell County subdivision, Wrangler Estates, is located about 3 miles from the flowing portion of the Dry Fork. The closest Gillette subdivision, Heritage Village, is approximately 4 miles from the Dry Fork channel. Photo 8 illustrates the surface control around Moyer Creek and the Dry Fork due to the Dry Fork and Rawhide Mines. Due to fencing of the surrounding lands at the mine sites and power plant, there is no access to either stream from the residential lands surrounding Gillette.



**Photo 8: Dry Fork and Moyer Creek on Dry Fork Mine owned property. The small pond to the right of the silos is the DFM facilities pond and is not fed by any stream. The small stream beyond this facilities pond is the Dry Fork Little Powder River. The larger pond behind the silos is Moyer Reservoir, which is fed by Moyer Creek. Note the confluence of Moyer Creek and the Dry Fork Little Powder River just beyond Moyer Reservoir. Also note that for all reaches shown in this photo, both creeks are on lands owned by Dry Fork Mine, with the Dry Fork Station power plant, Burlington Northern Railroad, and Rawhide Mine shown in the distance.**

*Conclusion*

We believe that Dry Fork and Moyer Creek should not be classified as primary contact recreation as there is no flow sufficient to support primary recreation and no opportunity for the public to access the lands surrounding the stream channels. Therefore, we request that the WDEQ/WQD conduct a Use Attainability Analysis to reclassify Dry Fork and Moyer Creek for secondary contact recreation.

Please call me at (307) 682-8051 Ext 15 or e-mail me at [bgoodnough@westernfuels.org](mailto:bgoodnough@westernfuels.org) if you have any questions or comments.

Sincerely,

Beth Goodnough  
Manager, Regulatory Affairs

Figure A-10. Campbell County Conservation District (2 pages).

**OFFICE**  
601 4J Court, Suite D  
PO Box 2577  
Gillette, WY 82717-2577  
Phone: 307-682-1824  
Fax: 307-682-3813  
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**BOARD OF SUPERVISORS**  
Travis Hakert, Chairman  
Jonathan Mau  
Lindsay Wood  
Brenda Schladweiler  
Bob Maul

September 30, 2013

Ms. Lindsay Patterson, Natural Resources Program Coordinator  
Wyoming Department of Environmental Quality  
Water Quality Division  
Herschler Building 4<sup>th</sup> Floor-West  
Cheyenne, WY 82002

RE: Draft Categorical Use Attainability Analysis for Recreation (draft CUAAR)

Dear Ms. Patterson:

Our following comments on the Wyoming Department of Environmental Quality (WDEQ) draft CUAAR are influenced by our understanding of the model used to craft the draft CUAAR, as well as the opportunities the WDEQ has provided to increase our understanding of the draft CUARR, the process, and the model created by the WDEQ in cooperation with Wyoming Conservation Districts.

The Campbell County Conservation District (CCCD) supports the model's cull of all the ephemeral draws, coulees and any physiographic feature (surface water segments) that would provide a catchment for water, snow or other precipitation event from the Primary Contact Recreation designation in Campbell County. The effect of the model is widespread and uniform in its application in Campbell County, and we support its use and reclassification therefore. We especially support the WDEQ reclassification of the Middle Prong of Wild Horse Creek.

In our District there are three (3) tributaries to the Little Powder River that are still classified as Primary Contact Recreation due to flow: Wildcat Creek, lower Horse Creek, and Cottonwood Creek. Through the CUAAR it is estimated that these streams exceed the 6.0 cfs threshold for primary contact recreation using the National Hydrologic Dataset (NHD), when in reality these waterways are ephemeral throughout their respective reaches.

When Coal Bed Natural Gas (CBNG) production (2002-2006) was at its peak a perennial mimicking flow was experienced in the streams and their tributaries described above, but as CBNG production has declined and wells are shut in or abandoned we are seeing a relative trend decrease in discharges and flow through-out Campbell County especially in the Little Powder River Watershed.

Based on our experience it would seem that areas experiencing energy production resulting in the production of subterranean water and permitted by the Wyoming Pollution Discharge Elimination Systems (WYPDES), that the WYPDES flow data may be more appropriate to use rather than the NHD data set. We do however nonetheless realize though that we may have to apply site specific use

attainability analysis (SSUAA) for these stream reaches independent of the CUAAR, and will also be applying the SSUAA for Olmstead and Wild Horse Creek.

We also request that WDEQ rededicate their capability to evaluate the SSUAAs in a timely fashion once the Environmental Protection Agency (EPA) has put its approval seal on the draft CUAAR and adoption by the WDEQ. In reviewing the WDEQ WEB Map we found a segment of Little Powder River south of the Elk Creek confluence to just north of the ZV Creek confluence to be missing from the WEB Map. We also understand that even though many of the reservoirs and stock ponds in the CCCD are still classified for Primary Contact Recreation they would be a very low priority SSUAA or CUAAR processes due to sustained storage and location issues.

Lastly, we realize that the draft CUAAR may not allow for individual quantitative information and data relating to flow to be used due to the EPA "sufficiently similar" guidance. However, we suggest that the WDEQ try to incorporate a subset qualifier in the Draft CUAAR that could be used to augment a redesignation without having to use the SSUAA process whether it is for flow or public accessibility.

We thank the WDEQ for taking on the leadership role in creating the CUAAR and coordinating with the Conservation Districts of the State of Wyoming. We look forward to working with the WDEQ in future reclassification processes. If you have any questions regarding our comments, we are at your service.

Sincerely,



Timothy J. Morrison  
District Manager

Cc: Kevin Quick, CCCD Water and Range Technician  
Phil Murphree, Peabody Powder River Operations, LLC

Figure A-11. Meeteetse Conservation District (1 page).



## Meeteetse Conservation District

P.O. Box 237 • Meeteetse, WY 82433  
(307) 868-2484 • [mcd@tctwest.net](mailto:mcd@tctwest.net)

September 30, 2013

Lindsay Patterson  
Wyoming Department of Environmental Quality  
Herschler Building, 4-W  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

**RE: Categorical Use Attainability Analysis for Recreation; August 2013 draft**

Dear Ms. Patterson,

The Meeteetse Conservation District appreciates the opportunity to comment on the Draft Categorical Use Attainability Analysis for Recreation.

Conservation districts in Wyoming are governed by 5 locally elected officials and are charged specifically, pursuant to Wyoming §§ 11-16-101 et seq., with the protection of natural resources, stabilization of farming and ranching operations, protection of public lands and protection of the tax base.

The MCD first of all incorporates as its own (by reference) any comments made by the Wyoming Association of Conservation Districts (WACD). The MCD offers these additional comments in response to the Draft Categorical Use Attainability Analysis for Recreation:

**5.0 extensions:** "To help eliminate isolated primary streams, primary segments were extended upstream and downstream to the nearest 100k NHD confluence or lake, or upstream to the terminus of the stream."

**Comment:**

MCD recommends that in situations where there are no confluences upstreams in the 100k NHD that the 24k dataset should be used.

Again, the Meeteetse Conservation appreciates the opportunity to comment on the draft UAA and all of the effort DEQ has done to improve and maintain our watershed health.

*Steffen Cornell*  
Resource Specialist  
Meeteetse Conservation District  
Meeteetse, WY 82433  
Ph.: (307) 868-2484  
Fx.: (307) 868-2489  
E-Mail: [mcdrs@tctwest.net](mailto:mcdrs@tctwest.net)

Figure A-12. Lower Wind River Conservation District (3 pages).

LOWER WIND RIVER CONSERVATION DISTRICT  
508 NORTH BROADWAY  
RIVERTON, WY 82501  
307-856-7524

September 30, 2013

TO: Wyoming Department of Environmental Quality  
ATTN: Lindsay Patterson  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

RE: Comments on Draft Categorical Use Attainability Analysis for Recreation

Dear Lindsay,

The Lower Wind River Conservation District Board of Supervisors appreciates the opportunity to comment on the Draft Categorical Use Attainability Analysis for Recreation. We very much are aware of the time and effort that has been devoted to this project. We were pleased to be participants in the field verification project.

We agree that flow data should be utilized to differentiate primary from secondary recreational streams in Wyoming. However, as you pointed out on page 8, Wyoming is the third driest state in the United States of America with 97% of the state receiving less than 16 inches of precipitation per year. Intermittent and ephemeral “streams” (which we call draws and gullies) in Wyoming only flow when the snow melts in the spring or when there is a significant precipitation event. This is especially true in the Lower Wind River Conservation District where annual precipitation averages less than 10 inches. We believe that the UAA should be as accurate as possible in designating streams in Wyoming as primary or secondary recreation streams.

Many of the dry draws and gullies in Wyoming are considered “streams” by the National Hydrography Dataset (NHD) and the updated version NHDPlus. There is no actual measurement of flow in these “streams” and models are used to estimate mean annual flows. Further, mean annual flows are accumulations of monthly flow estimates and downstream flow estimates are always more than upstream flow estimates. Precipitation grids used in NHDPlus are modeled estimates. Utilizing models to estimate parameters in models leads to inaccuracy and results in over-estimated stream flows in dry areas (<10 inches of precipitation per year) in Wyoming where we have vast watersheds but very little precipitation. The mean annual flow estimates on your UAA map for intermittent and ephemeral “streams” are 10-20 times too high. We believe that using stream order, watershed area and extrapolated data without precipitation data for “streams” present only at the 24k scale is an inaccurate method to evaluate flow conditions. We would like to see actual precipitation values utilized in the model to calculate flow rather than using estimates of precipitation and estimates of flow.

LOWER WIND RIVER CONSERVATION DISTRICT  
508 NORTH BROADWAY  
RIVERTON, WY 82501  
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Using flow numbers for three streams in a higher than average precipitation zone in Wyoming is an inaccurate method to determine flow during the recreation season for intermittent and ephemeral “streams” in lower (<10 inches) precipitation zones. According to the water data from the Wyoming Water Resources Data System, in lower basins snowfall accounts for less than 40% of the annual precipitation. The maximum rainfall occurs in early spring. Thus, for intermittent and ephemeral streams, flows are highest during early spring and diminish or are non-existent during the summer. Since the mean annual flows in the NHD model are accumulations of monthly flows, the assumption that annual flows and recreation season flows are equal does not apply to intermittent and ephemeral streams in low (<10 inches) precipitation zones in Wyoming. At <10 inches of precipitation per year, mean daily precipitation would average less than 0.03 inches and result in no flow. We encourage the use of actual precipitation values to show that there is very little or no flow during the recreation season in low (<10 inches) precipitation zones for intermittent and ephemeral streams.

In the discussion of mean annual flow for 24k streams (part 3.5, page 28), we agree that “streams only present in the 24k NHD do not have sufficient flow to support primary contact recreation”. Further, in precipitation zones of <10 inches, these “streams” are the dry draws and gullies that only flow in infrequent and unusual precipitation events. Thus, there is no flow and these “streams” should remain secondary irrespective of access.

For the discussion of access, we again believe that in precipitation zones of <10 inches intermittent and ephemeral streams have no flow especially during the recreation season. School children and the public do not travel to these “streams” to swim because there is not enough or no water. These dry draws and gullies are not necessarily more accessible because they are on federal or state land. In many cases, they are less accessible due to private ground or rough terrain. The weighting for access due to public land is too high. Further, when people fish and swim in our area, they go to recreation destinations (lakes or streams that have fish and water in which to swim). In the Lower Wind River Conservation District, 50 “streams” were added as primary due to access. “Streams” in the 24k NHD data set in low precipitation zones (<10 inches) need to be designated secondary streams.

Because there was a decline in the agreement of stream designation by the model versus field surveys (page 34-37), extensions should not be part of the UAA. In the Lower Wind River Conservation District, 46 “streams” were added due to extensions with calculated mean annual flows of 0 to 1.1 cubic feet per second. Since mean annual flows are accumulations of calculated monthly flows, it is obvious that these streams do not flow. We do not agree that extensions need to be included for 24k streams as adding extensions was a hand process done by one person. These “streams” do not flow during the recreation season particularly in areas with less than 10 inches per year of precipitation and need to be designated as secondary recreation streams.

LOWER WIND RIVER CONSERVATION DISTRICT  
508 NORTH BROADWAY  
RIVERTON, WY 82501  
307-856-7524

Of the fifteen photographs included in the UAA (pages 20-27), only one (Figure 15) is in an area with less than 10 inches of precipitation per year. Since the 97% of the state receives less precipitation than the photos depict, we suggest that you include photos of dry draws and gullies which are typical in Wyoming. This will emphasize the point that Wyoming is the third driest state in the United States and that the majority of our “streams” do not support primary recreation.

The Table on page 34 shows designations for 100k NHD streams. On page 28, it is indicated that the 100k NHD streams are the ones “of interest in the state”. We encourage only the use of 100k streams in the UAA. However, if the 24k streams are included in the UAA, we recommend further work be done on calculating flow to include precipitation zones especially in areas of less than 10 inches per year of precipitation. These “streams” need to remain secondary as there is no flow during the recreation season. Also, designations for 24k NHD streams need to be added to the summary table if they are included in the UAA.

If you have any questions about our comments, please let us know.

Thank You,

Gavin Woody, Chairman  
Lower Wind River Conservation District

Figure A-13. Medicine Bow – Routt National Forests and Thunder Basin National Grassland (2 pages).



United States  
Department of  
Agriculture

Forest  
Service

Medicine Bow - Routt  
National Forests and Thunder  
Basin National Grassland

2468 Jackson Street  
Laramie, WY 82070-6535  
<http://www.fs.fed.us/r2/mbr>

File Code: 2530

Date: September 30, 2013

LINDSAY PATTERSON  
WDEQ - WATER QUALITY DIVISION  
122 W. 25TH STREET  
HERSCHLER BUILDING, 4-W  
CHEYENNE, WY 82002

Dear Ms. Patterson:

Please accept the following comments on the 2013 Draft Categorical Use Attainability Analysis for Recreation. First and foremost, we would like to offer overall support for the effort to categorically designate appropriate water bodies on Medicine Bow National Forest and Thunder Basin National Grassland for primary and secondary contact recreation. This effort is critical in order to best manage water quality by recognizing the vast differences in human health risks associated with the different types of waters and recreational uses on the Forest.

1. Low Flow Streams: In general, the draft methodology accurately identifies streams in the mountain regions of the Forest (Sierra Madre, Snowy Range, Pole Mtn, Laramie Peak, Spring Creek units) as primary contact recreation due to flow conditions. These designations are consistent with areas where we have observed primary contact recreation activities occurring on the Forest.
2. Low Flow Streams: In general, the draft methodology does not accurately identify streams in the plains regions of the Forest (Thunder Basin National Grassland (TBNG)) as primary contact recreation due to flow conditions. The streams identified as primary contact recreation on the TBNG generally do not support sufficient flow to allow primary contact recreation during the recreation season and we have not observed primary contact recreation activities occurring in these water bodies on the Grassland. This comment applies to the following intermittent and ephemeral streams: Duck Creek, Dry Fork Cheyenne River, Sand Creek, Antelope Creek, Bates Creek, Porcupine Creek, Cheyenne River, Little Thunder Creek, Black Thunder Creek, Lodgepole Creek, Dry Creek, Lightening Creek, Beaver Creek, South Beaver Creek. We recommend these streams be considered for designation as secondary contact recreation. Additional analysis comparing mean annual flow to mean recreation season flows using only gages located in the plains hydrological region may support our observations.
3. Access and Recreation Areas: The majority of streams designated by the access and recreation areas methodology are streams where we generally have not observed primary contact recreation activities on the Forest and Grassland. Even though access and/or recreation areas provide the opportunity for primary contact recreation activities, it has been our observations that unless there are sufficient streamflows these activities rarely if ever occur in the streams designated in the draft as primary contact recreation due to access.



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Therefore, it appears that the streams designated as primary contact recreation due to flow provide the best indication of streams we have observed with actual primary contact recreation activities occurring on the Forest (see #1 and 2 above). It would be interesting and informative to analyze and display the proportion of streams designated as primary contact recreation due to flow, which would also meet the access and recreation designation methodology. Presumably if our observations of recreation use on the Forest are correct, the vast majority of access and recreation designation streams would be streams with sufficient streamflows to support that designation.

4. Pipeline: A feature designated as primary contact recreation is a buried pipeline (Cheyenne Board of Public Utilities) and we recommend the feature be removed from the analysis. The feature begins at Lake Owen Creek (T14N, R77W, Sec 28) and terminates south of the Laramie River (T13N, R76W, Sec 6).
5. Irrigation Ditch: A feature designated as primary contact recreation is an irrigation ditch (Belvidere Ditch) and we recommend the feature be removed from the analysis. The feature begins at Haggerty Creek (T14N, R87W, Sec 25) and terminates in a tributary to Big Gulch (T13N, R88W, Sec 14).

Please feel free to contact my staff hydrologist, Dave Gloss (307.326.2510 / [dgloss@fs.fed.us](mailto:dgloss@fs.fed.us)) if you have any specific questions or desire clarification of any of these comments. Again, I support the overall effort to conduct a categorical use attainability analysis for recreation and I thank you for your efforts in that regard!

Sincerely,

*/s/ Phil Cruz*  
PHIL CRUZ  
Forest Supervisor

Figure A-14. Wyoming Farm Bureau Federation (1 page).



September 30, 2013

Lindsay Patterson  
Wyoming Department of Environmental Quality  
Herschler Building, 4-W  
122 West 25<sup>th</sup> Street  
Cheyenne, WY 82002

**RECEIVED**  
OCT 01 2013  
WATER QUALITY DIVISION  
WYOMING

Dear Ms. Patterson,

On behalf of the 2,700 agricultural producers who are members, the Wyoming Farm Bureau Federation would like to provide the following comments on the proposed August 6, 2013 draft Categorical Use Attainability Analysis (UAA) for Recreation. Water quality issues are important to our members who utilize surface and groundwater sources for food production as well as many of the recreational aspects other citizens appreciate about Wyoming. Achieving a common sense process to protect our waters makes economic sense to all of the citizens.

In addition to members who make their living producing food for the nation, many of them participate on their local Conservation District Boards and work with those local Boards to ensure proper use and husbandry of the State's natural resources.

We support the efforts of the Water Quality Division to develop a categorical UAA to determine appropriate protection levels for Wyoming surface waters. A scientific process to accurately classify Wyoming water bodies for classification as primary and secondary contact recreational waters on a statewide basis makes sense. Spending valuable resources to protect a water body as a primary contact water body when it meets the criteria for a secondary contact water body will divert those resources away from a more efficient application.

Water bodies which are intermittent or ephemeral and do not meet minimum flow levels to provide for primary contact should be excluded from those classifications.

In addition we have reviewed the draft comments of the Wyoming Association of Conservation Districts, many of whose members have worked on water quality issues for many years and some who have provided assistance with data for development of the UAA model, and we concur with their comments and suggestions on the UAA.

Thank you for this opportunity to comment.

Sincerely,

Ken Hamilton  
Executive Vice President

cc: Board      NER Chairmen      WACD  
WyFB UAA comments

P.O. Box 1348, Laramie, WY 82073 • 1.800.442.8325 • Fax 307.721.7790 • [www.wyfb.org](http://www.wyfb.org)

Figure A-15. Dubois-Crowheart Conservation District (1 page).

Lindsay,

In regards to the UAA model, I have listed the Dubois-Crowheart area concerns for your review. Reg Phillips our chairman, and I sat down and discussed that these should not be listed as primary as most are ephemeral or have very low flow. There are still others in the area, many draws and gulch's without names, that would only be listed as primary due to extension which is unnecessary as well. **[Reg S. Phillips]** To work through the process to get these watercourses out of primary designation is going to be a huge undertaking. Another issue that concerns us is that several of these draws are listed as primary due to access (BLM and State lands) and that the designation could have an impact of multiple uses such as grazing, recreation, and timber harvest. We were are hoping for a faster way to reclassify these watercourses. Is there a light at the end of the tunnel for faster processing?

Byrd Draw  
Carson Draw  
Pease Draw  
Lake Draw  
Horse Draw  
Alkalai Creek  
Little Alkalai Creek  
Mason Draw  
Little Horse Creek (Pony Creek)  
Tappan Creek  
Rifle Range Draw  
Chimney Rock Gulch  
Wagon Gulch  
Saddle Horse Draw  
Lime Kiln Draw  
Diamond Draw

Please respond to both Reg and I with your response and what we need to do on our end at your earliest convenience.

Thank you.

Ali J. Johnson  
Dubois-Crowheart Conservation District  
P.O. Box 27  
Dubois, WY 82512  
[\(307\) 455-3688](tel:(307)455-3688)  
[dccd@dteworld.com](mailto:dccd@dteworld.com)

Figure A-16. Niobrara Conservation District (2 pages).

10/15/13

State of Wyoming Mail - Categorical UAA for Recreation



Lindsay Patterson <lindsay.patterson@wyo.gov>

## Categorical UAA for Recreation

1 message

**Sturman, Heidi - NRCS-CD, Lusk, WY** <Heidi.Sturman@wy.nacdnet.net>  
To: "lindsay.patterson@wyo.gov" <lindsay.patterson@wyo.gov>

Tue, Aug 27, 2013 at 11:54 AM

Lindsay, I am in Niobrara County and had some questions on the primary classification of the Niobrara River on the web map. I understand the primary classification in the area of Lusk and Manville due to the population density. However, the rest of the river, to the NE state line, is classified as primary due to either flow or extension. When you click along the river east of Lusk the information box states a flow ranging from 6.84 cfs E. of town up to 21.164 cfs at the Duck Creek confluence, then down to 2.698 cfs at Van Tassell then back up again to 30.778 cfs at the state line. I was wondering where these flow rates came from? The Niobrara River is dry and only flows in response to precipitation events through the town of Lusk and east for several miles. Somewhere around Van Tassell there is probably some flow but nowhere near what is stated on the map. The only flow station I could find was a USGS station at the state line which ran from 1956 to 1994. The highest discharge (by water year) was 5.77cfs in 1974 with most others around 2 – 3 cfs. I also see on the map where there is a flow of 21.164 at the confluence of Duck Creek down to 2.6 at Van Tassell then back to 30.77 at the state line. This covers approximately 11 stream miles. I wondered about this much fluctuation in that distance with only the input of Van Tassell Crk. I apologize if you went over where the info came from in the webinar and I missed it. I appreciate any information you can give me. Thank you, Heidi

Heidi L. Sturman

Niobrara Conservation District

905 S. Main St.

PO Box 659

Lusk, WY 82225

307-334-3627 X111

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1/1

10/15/13

State of Wyoming Mail - Rec UAA



Lindsay Patterson <lindsay.patterson@wyo.gov>

---

## Rec UAA

1 message

---

**Sturman, Heidi - NRCS-CD, Lusk, WY** <Heidi.Sturman@wy.nacdnet.net>  
To: Lindsay Patterson <lindsay.patterson@wyo.gov>

Tue, Sep 24, 2013 at 9:55 AM

Lindsey, I have a couple more questions on some of the designations in Niobrara County.

ID # 20489 & 20490 are primary by access. The map shows a Natural or Recreation Area between the 2 draws. Both streams are weighted 100 for the Natural or Recreation area, with no other weighted factors. These are both on private land with no county road access. I was wondering what the Natural or Recreation Area was? Both of these have associated extensions as well.

ID # 19254 & 19255 are primary by access. They show weighted for Public Land 5, Natural or Recreation Area 3, Road 5. Again, I do not know what the Natural or Recreation Area is. These, as well, have extensions associated with them.

Thanks for looking at these, Heidi

Heidi L. Sturman

Niobrara Conservation District

905 S. Main St.

PO Box 659

Lusk, WY 82225

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<https://mail.google.com/mail/ca/u/0/?ui=2&ik=c54279a1ed&view=pt&cat=UAAs%2FRecreation&search=cat&th=14150af2bad53478>

1/1

Figure A-17. Justin Caudill, Wyoming Department of Agriculture (1 page).

10/14/13

State of Wyoming Mail - BLM Recreation Locations in Sweetwater Co.



Lindsay Patterson <lindsay.patterson@wyo.gov>

---

**BLM Recreation Locations in Sweetwater Co.**

1 message

---

**Justin Caudill** <justin.caudill@wyo.gov>

Tue, Aug 20, 2013 at 2:31 PM

To: Lindsay Patterson <lindsay.patterson@wyo.gov>

Lindsay,

Just checking to see if BLM's info was added to the established recreation areas for the state draft UAA document. Here are two rec. areas in the Rock Springs Field Office:

- Sweetwater Guard Station
- Sweetwater Bridge

If these do not show up let me know and I will check to see if BLM has a good data lay of their rec. sites.

Thanks!

Justin...

--

Justin Caudill  
Agriculture Program Coordinator  
Wyoming Department of Agriculture  
Rock Springs BLM Field Office  
280 N Hwy 191  
Rock Springs, WY 82901  
Office: 307-352-0378  
Cell: 307-350-5480  
justin.caudill@wyo.gov  
<http://agriculture.wy.gov>

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**APPENDIX B. SITE SPECIFIC UAAS RECEIVED BY WDEQ PRIOR TO SEPTEMBER 30, 2013 COMMENT PERIOD**

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Figure B-1. Kirby Creek UAA (6 pages)

## Recreational Use Designations Use Attainability Analysis (UAA) Worksheet

The Use Attainability Analysis (UAA) worksheet contains the following paragraph:

"There are three circumstances where it makes sense to complete a UAA and revise the recreation use classification. The first is whenever a stream is currently listed or proposed to be listed as impaired or threatened on the Wyoming 303(d) list. This is to ensure that the proposed listing is based on assessment using the appropriate pathogen criteria. The Water Quality Division will routinely complete a UAA as part of the listing documentation."

With the above paragraph in mind, the UAA worksheet has been prepared for the Kirby Creek Watershed. Before completing the UAA worksheet, I want to begin with some general information concerning the Kirby Creek Watershed.

### **I. GENERAL INFORMATION**

The Kirby Creek watershed is situated in Hot Springs County, Wyoming - a small, rural county in north-central Wyoming with a surface area of about 2,022 square miles. The county is situated in the Bighorn River watershed, encompassing its major tributaries of Red Canyon Creek, Buffalo Creek, Owl Creek, Grass Creek, Cottonwood Creek, Gooseberry Creek and Kirby Creek, the watershed involved in this proposal. Land status within the Kirby Creek watershed includes private, state, and federally administered land. The Kirby Creek Watershed (Kirby Creek Watershed below) drains a large area (~185+ square miles) east of the Bighorn River, in Hot Springs County. It is composed of numerous tributary basins - the major tributaries include East and West Kirby creeks, and Lake Creek.

The dominant land use in the watershed is agricultural – primarily cattle and sheep ranching, with very limited farming, due to the difficulty in flood-irrigating land in the watershed. During a number of landowner meetings, landowners have not identified any primary recreation activities in this watershed. Over the past three years, a water monitoring program has been in place without any observation of primary recreation occurring in this watershed. The few diversions of water from Kirby Creek and its tributaries are generally used to irrigate pasture via flood irrigation or fill reservoirs. Land within the watershed is also used for recreation, such as hunting and horseback riding. The watershed has many important wildlife habitat values including winter ranges for mule deer, antelope and elk. Oil is produced from several oil fields within the watershed, including Murphy Dome, Kirby Creek, and Red Hole fields, to name a few. Bentonite mining has taken place in the Red Hole and Monument Hill areas of the watershed. Most of the land disturbed by this mining has been reclaimed, and mining is on hold. But, some additional mining is predicted for the future. There are virtually no silviculture, urban projects or active mining projects in the watershed.

Soils in the watershed are typically derived from Cretaceous marine shale and sandstones. They have been generally classified in a Torriorthent-Arrixisols association by the USGS (1987).

Geologically, the watershed is dominated by outcrops of gray Cretaceous shale, siltstones and sandstones except for the upland foothill areas, which are dominated by Jurassic and Triassic-age strata. There are several different specific geologic formations, as well as structures (folds and faults), in the watershed. Much of the surface geology is composed of outcrops of Cretaceous-age rocks, primarily the Frontier Formation and Cody Shale, with outcrops of Mesa Verde and Meeteetse formations found only in the northern and western end of the Kirby Creek basin. Older rocks (Triassic and Jurassic-age) can be observed in the southern portions of the watershed, along uplands and foothills. Topography in the Kirby Creek area includes higher elevation uplifts of the Copper Mountain area of the eastern Owl Creek Range, foothills of that range, uplands, and riparian areas.

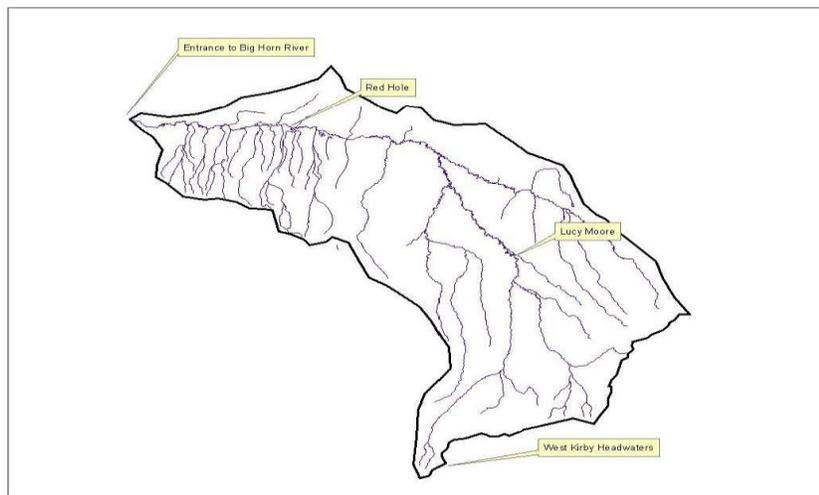
Elevations in the watershed range from ~4200 to ~7500 feet above sea level. The watershed normally receives between 6-14 inches of precipitation yearly, depending on elevation. Vegetation in the watershed is generally of the sagebrush-grass community, with riparian communities located along some draws and all perennial streams. The perennial stream segments are located in the higher elevations that are not accessible for 4 to 5 months during the winter. During the summer months the low volumes of water and lack of accessibility eliminate the use of these stream sections for primary recreation uses. Numerous small stock reservoirs are scattered throughout the watershed, as are several larger on-channel reservoirs, used for irrigation and stock watering. Land ownership includes private, state and federally-administered.

**II. Name & Location:** Identify where the stream segment starts and ends.  
Water body Name: Kirby Creek Watershed (HUC): 10080007-061-3

Headwaters Location: NW¼, NW¼ Section 33 TWP 41N RNG 91W  
Enters Big Horn River Location: SW¼, SW¼ Section 29 TWP 44N RNG 94W

**III. Maps & Photographs**

**Kirby Creek Watershed Map**



**Winter Pictures**



Picture was taken on December 7, 2006  
from the Red Hole Bridge  
by Brett Belden



Picture was taken on December 7, 2006  
looking downstream from the last Lucy  
Moore Structure by Brett Belden

**Summer Pictures**



Picture was taken on July 7, 2007  
from the Red Hole Bridge by  
Brett Belden



Picture was taken on July 7, 2007  
looking downstream from the last Lucy  
Moore Structure by Brett Belden

**IV. Primary use Factors:** If any of the following factors apply, the water should be designated for primary contact recreation. If none of the factors apply, the water is a candidate for a secondary use designation.

Check all that apply:

N/A Water is located within or flows through a federal, state, or local park or recreation area. Federal, state or local parks should not be construed to mean all public lands, but rather specifically developed and/or designated recreational use areas, such as campgrounds, public grounds, trailheads, greenways, etc..

N/A Water is a lake, reservoir or other still body of water. (Exclude small stock watering ponds).

N/A Water is within or flows through a municipality or unincorporated area high-density housing area.

N/A Water is a larger perennial stream or game fishery known to be used by sportsmen or other recreationists.

N/A Water is used or can be used for primary contact activities such as swimming, floating, rafting, canoeing or kayaking.

**Removal Factors** (only necessary when downgrading from primary to a secondary use designation).

Chapter 1, Section 33(b) requires that all petitions to lower a classification or criteria must be based on one or more of the use removal factors listed in Section 33(b)(i) through (vi). Most commonly, the factors that apply to reclassifying a water from a primary to a secondary contact designation are 33(b)(ii) or (v), though there may be unique circumstances where one of the other factors is most appropriate. These sections are shown below, and a brief narrative follows the applicable sections:

Section 33(b)(i) Naturally occurring pollutant concentrations prevent the attainment of the classification or use; or

**This section does not apply to the requested classification of secondary contact recreation of Kirby Creek.**

Section 33(b)(ii) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met: or

**Kirby Creek is an ephemeral, intermittent creek and experiences low flow conditions during the summer season. Over the past three years a water monitoring program has**

been conducted during the spring, summer and fall. Information obtained from these program results and conversation with landowners and long-time watershed residents result in these conclusions on stream conditions. The stream bed is not wide enough for primary recreational activities (such as swimming). When large amounts of water (in early spring) do flow, they flow at such a rate that it is not safe for an individual to be in the creek. Since the larger water volumes flow in the early spring, the low water and air temperature make swimming and wading uncomfortable and thus impractical.

The access to Kirby Creek is limited by the following constraints. There are less than a dozen residents once you have traveled from the confluence with the Big Horn River to the Headwaters. In the higher elevations of the watershed the presence of snow limits the accessibility and there are just a few landowners that have large land holdings and rights to graze on BLM allotments. There are no large population centers close to this watershed. There is only one all-weather access to most of the watershed. As a result of these constraints access is very limit combined with very low to non-existent water levels.

Section 33(b)(iii) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

The landowners and government land trustees have been working to install water storage facilities that will catch the spring runoff and allow the water back into the stream after the peak volume period has passed. In addition to storage, the creek is being encouraged to return to its original and longer creek bed. This provides an increased distance for the change in elevation to occur. The result is a reduction in the stream velocity.

Section 33(b)(iv) Dams, diversions, or other types of hydrologic modifications preclude the attainment for the classification or use, and it is not feasible to restore the water body to its original condition or to operate such modification in such a way that would result in the attainment of the classification or use; or

Dams, diversions, or other types of hydrologic modifications are being used along Kirby Creek to reduce the velocity of the spring run off and provide storage in the upper reaches of the watershed, reducing the relatively large amounts of the runoff with the spring thaw.

Section 33(b)(v) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of the classification or use; or

The Kirby Creek physical restraint is the lack of water being distributed throughout the year. In addition the composition of the soils do not allow for the accumulation of a rock base in the bottom of the creek.

Section 33(b)(vi) Controls more stringent than those required by Sections 301(b) and 306 of the Federal Act would result in substantial and widespread economic and social impact. This subsection shall not apply to the derivation of site-specific criteria.

This section does not apply to the requested classification of secondary contact recreation of Kirby Creek.

Explanation:

The above information is provided to support the change in classification of Kirby Creek from Primary Contact Recreation to Secondary Contact Recreation. Should additional information be required to support this action by the Wyoming Department of Environmental Quality, please advise, and we will attempt to provide the additional information.

\_\_\_\_\_  
For Kirby Creek CRM by  
James D. Kirsch, Petitioner  
PO Box 1104  
Thermopolis WY 82443  
[jdkirsch@directairnet.com](mailto:jdkirsch@directairnet.com)  
307 864 3035  
Cell phone 307 921 1690

\_\_\_\_\_  
Date

Figure B-2. Excerpts from the Nowater Creek Watershed UAA (16 pages).

**Recreational Use Attainability Analysis**  
**Nowater Creek**  
**Hot Springs and Washakie Counties, Wyoming**  
**October 19, 2009**

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**District Director,**  
**Washakie County Conservation District**

---

**District Specialist,**  
**Washakie County Conservation District**

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**District Chairman,**  
**Washakie County Conservation District**

## Introduction

This Recreational Use Attainability Analysis (UAA) petition is to recommend a change in the recreational use designation of Nowater Creek upstream of photo point 83 (See Figure 1) and its tributaries. Nowater Creek headwaters are in Hot Springs County, but most of the length of the Creek and its tributaries are located in Washakie County where it confluences with the Big Horn River.

Nowater Creek and its tributaries identified on Wyoming DEQ's Table A Surface Water Classification Table, are currently designated as a 3B waterbody, protected for primary contact recreation. This document was developed following the guidelines outlined in the procedures for recreation designations located in the Wyoming Surface Water Quality Standards Implementation Policies for Use Attainability Analysis, February 2007 (Implementation Policies). This document outlines the basic information necessary to verify that "secondary contact recreation waters" is the appropriate designation for Nowater Creek and its tributaries.

Nowater Creek does not currently, nor has it ever, supported primary contact recreation uses. The entire watershed has very limited accessibility as it is in a very remote area of Washakie County. There are no municipalities or high density housing areas in the entire watershed. Many reaches of Nowater Creek and most of the tributaries are not accessible by any roads. The roads that do exist within the watershed are largely seasonal graded dirt roads, two track roads, and gravel roads maintained by oil companies. The segment of Nowater Creek and its tributaries that are included in this petition do not attract anglers or boaters as the waterbodies do not support game fish. In this petition, we visited as many sites as were accessible by four wheel drive vehicle and have photo documentation of conditions throughout the watershed.

### I. Name and Location

**Waterbody name:** Nowater Creek

**Watershed (HUC):** 1008000708

**Upstream Location:** ¼, ¼ Section: NESE, S34, T43N, R90W; Lat, Long: 43.59368823°N, 107.61929691°W

**Downstream Location:** ¼, ¼ Section: NWSE, S31, T46N, R92W; Lat, Long: 43.91428043°N, 107.95210607°W

**Note** – All of the tributaries included on the map are being petitioned for secondary contact recreation. In addition, the following tributaries are also included on Table A of the Wyoming Surface Water Classification List:

Wildcat Gulch, East Fork Nowater Creek, Denver Jake Draw, Wagon Prong Creek, Hawks Nest Prong Creek, Mud Creek, Buck Creek, Little Sand Draw.

### II. Maps, Photographs, Tables

**Photographs will be included as attachments grouped by twelve-digit HUC as indicated:**

Figure 1: Map of Photo Points for Nowater UAA

Figure 2: Table of Photo Points and Location Information for Nowater UAA

Figure 3: BLM Rain Gauges in Nowater Watershed

Figure 4: National Climatic Data Center Precipitation Data Table

Attachment A: Nowater Creek-Wildcat Gulch (HUC 100800070809)

Attachment B: Nowater Creek-Zimmerman Draw (HUC 100800070804)

Attachment C: Mud Creek-Nowater Creek (HUC 100800070803)

Attachment D: Nowater Creek-Buck Creek (HUC 100800070801)

Attachment E: Nowater Creek-Sand Draw (HUC 100800070802)

Attachment F: Joe Henry Fork (HUC 100800070806)

Attachment G: Hawks Nest Fork (HUC 100800070805)

Attachment H: Denver Jake Draw (HUC 100800070808)

Attachment I: East Fork Nowater Creek (HUC 100800070807)

### III. Primary Use Factors:

No      *Water is located within or flows through a federal, state, or local park or recreation area. Federal, state, or local park or recreation area. Federal, state or local parks should not be construed to mean all public lands, but rather specifically developed and/ or designated recreational use areas such as campgrounds, picnic grounds, trailheads, greenways, etc.*

No      *Water is a lake, reservoir or other still body of water. (Exclude small stock watering ponds).*

No      *Water is within or flows through a municipality or unincorporated high density housing area.*

No      *Water is a larger perennial stream or game fishery known to be used by sportsmen or other recreationists.*

-Not within the segment for which the petition is concerned. There are game fish downstream of the area indicated by the attached map (at the confluence of the Big Horn River).

No      *Water is used or can be used for primary contact activities such as swimming, floating, rafting, canoeing or kayaking.*

### IV. Use Removal Factors

N/A      *(i) Naturally occurring pollutant concentrations prevent the attainment of the classification or use; or*

Yes      *(ii) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met; or*

- All of the streams included in this petition are naturally intermittent or ephemeral. Some of the streams are now artificially perennial due to oil well discharges of water. The streams receiving discharge water are still not suitable for primary contact recreation uses as there still is too little water for this use.

- N/A (iii) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
- N/A (iv) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the classification or use, and it is not feasible to restore the water body to its original condition or to operate such modification in such a way that would result in the attainment of the classification or use; or
- Yes (v) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of the classification or use; or
- Much of the area is characterized by very fine and soft substrate that make it unsuitable for wading (quicksand like substrate). Areas receiving oil well discharge water are characterized by unpleasant odors and are unattractive to potential recreationists.

## V. Precipitation Records Within the Nowater Watershed

Precipitation data has been obtained from the Worland BLM's Rain Gauge Data (Figure 3) and The National Climatic Data Center (Figure 4, below) in order to show precipitation levels in relation to photos in this report. The precipitation totals are based upon incomplete information due to inaccessibility to the site or damaged or missing gauges during different months within each year.

<b>Figure 4</b>					
<b>Yearly Precipitation Data for Worland Station (NOAA)</b>					
<b>Location: Lat. 43°58'N, Lon. 107°57'W</b>					
	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Precipitation In Inches	8.93*	3.91	4.61	8.29	5.4**
*Indicates Missing Data from Month of July					
**Current year, data only through September 30th					

# Photo Points for Nowater UAA

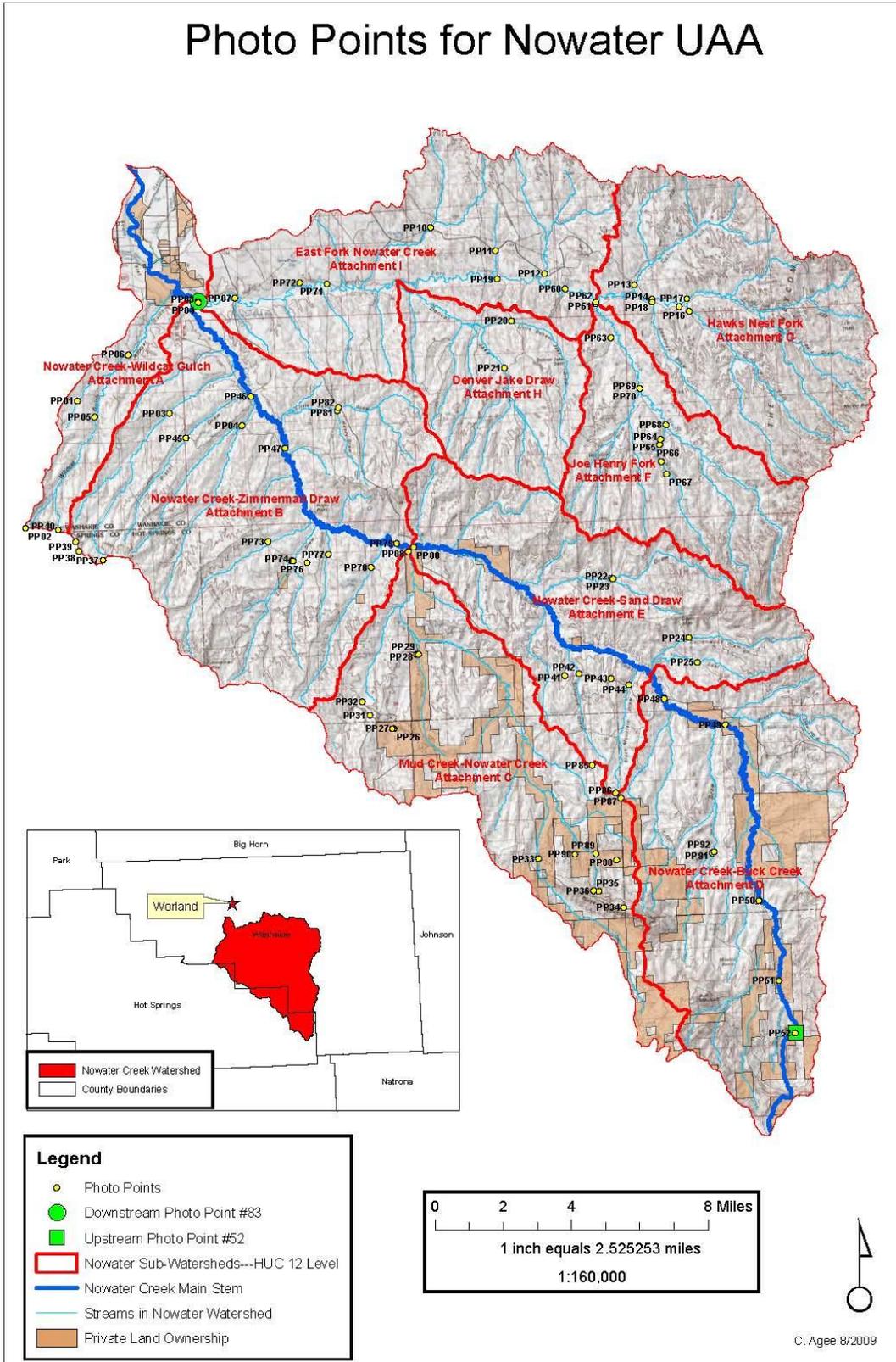
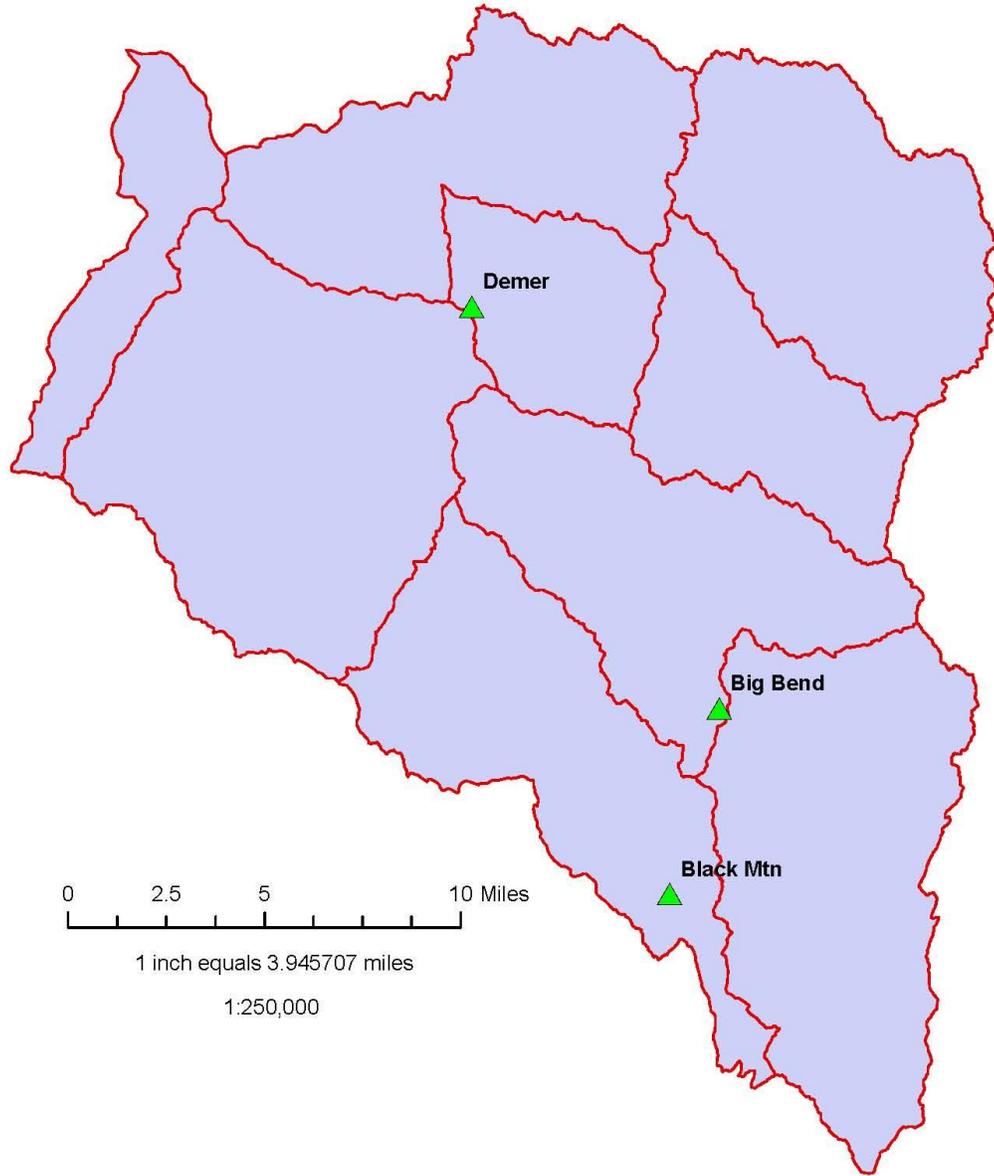


Figure #1

## PHOTO POINTS AND LOCATION INFORMATION FOR NOWATER UAA - FIGURE 2

Photo Point	Water Body Name	Photo Numbers	Hydrologic Unit 12-Digit Name	Hydrologic Unit Code Number	GPS Date and Time	Altitude	Latitude	Longitude	Y Projection	X Projection
PP07	East Fork Nowater Creek	303-306	East Fork Nowater Creek	100800070807	30-JUN-09 13:47	4200.00	43.91524066	-107.93043374	4867039.36399892	746455.38210270
PP46	Nowater Creek	289-292	Nowater Creek-Zimmerman Draw	100800070804	30-JUN-09 11:59	4247.00	43.87314406	-107.92327015	4862385.02582507	747204.81784292
PP47	Nowater Creek	295-298	Nowater Creek-Zimmerman Draw	100800070804	30-JUN-09 12:24	4279.00	43.85052675	-107.90440869	4859929.51308840	748814.46574190
PP71	East Fork Nowater	405-406	East Fork Nowater Creek	100800070807	09-JUL-09 11:35	4286.00	43.91973261	-107.87612387	4867701.92733364	750797.18191166
PP72	East Fork Nowater	407-408-409	East Fork Nowater Creek	100800070807	09-JUL-09 12:04	4340.00	43.92056468	-107.89211570	4867745.86651236	749509.76960401
PP79	Nowater Creek	422-423	Nowater Creek-Zimmerman Draw	100800070804	09-JUL-09 14:54	4411.00	43.80838313	-107.84092675	4855441.69952302	754096.06020772
PP80	Nowater Creek	424-425	Nowater Creek-Sand Draw	100800070806	09-JUL-09 15:04	4421.00	43.80647340	-107.83109503	4855259.84579995	754895.02284873
PP83	Nowater Creek	430-431	Nowater Creek-Wildcat Gulch	100800070809	09-JUL-09 15:52	4157.00	43.91428043	-107.95210607	4866868.21499349	744719.19306903
PP84	East Fork of Nowater and Nowater Creek Confluence	432-433	East Fork Nowater Creek	100800070807	09-JUL-09 15:58	4153.00	43.91377450	-107.95193969	4866812.51359654	744734.62777746

# BLM Rain Gauges in Nowater Watershed



GAUGE_NAME	2005	2006	2007	2008	2009
	ANNUAL PRECIP. INCHES				
DEMER	7.04	5.23	7.39	8.54	7.56
BIG BEND	9.03	7.71	9	9.82	9.88
BLACK MOUNTAIN	13.91	9.28	15.06	14.13	6.39*
*June-December Missing Data					

**Figure 3**

C. Agee 101/2009



Nowater-Wildcat Gulch – HUC #100800070809      Waterbody: Nowater  
Photo Point 83 – Photo #430      Downstream, Facing North (below East Fork Conf.)  
Date: July 9, 2009      Time: 15:53      Photographer: Victoria Dietz  
Comments: Intermittent Stream Channel – Flow Due to Mud Creek’s Contribution.



Nowater-Wildcat Gulch – HUC #100800070809      Waterbody: Nowater  
Photo Point 83 – Photo #431      Upstream, Facing South (below East Fork Conf.)  
Date: July 9, 2009      Time: 15:53      Photographer: Victoria Dietz  
Comments: Intermittent Stream Channel - Flow Due to Mud Creek’s Contribution.



Zimmerman Draw–HUC #100800070804  
Photo Point 46 – Photo #289

Date: June 30, 2009 Time: 12:01

Comments: Ephemeral Stream Channel – Flowing Water from Mud Creek (road dead ends here)

Waterbody: Nowater Creek  
Upstream, Facing East

Photographer: Caryn Agee



Zimmerman Draw–HUC #100800070804  
Photo Point 46 – Photo #291

Date: June 30, 2009 Time: 12:01

Comments: Ephemeral Stream Channel – Flowing Water from Mud Creek (road dead ends here)

Waterbody: Nowater Creek  
Downstream, Facing West

Photographer: Caryn Agee



Zimmerman Draw– HUC #100800070804  
Photo Point 47 – Photo #295

Date: June 30, 2009 Time: 12:26

Comments: Ephemeral Stream Channel – Flowing Water from Mud Creek (photo from bridge)

Waterbody: Nowater Creek  
Downstream, Facing South

Photographer: Caryn Agee



Zimmerman Draw– HUC #100800070804  
Photo Point 47 – Photo #297

Date: June 30, 2009 Time: 12:26

Comments: Ephemeral Stream Channel – Flowing Water from Mud Creek (photo from bridge)

Waterbody: Nowater Creek  
Upstream, Facing North

Photographer: Caryn Agee



Zimmerman Draw–HUC #100800070804

Photo Point 79 – Photo #422

Date: July 9, 2009 Time: 14:53

Comments: Perennial Stream Channel – Water from Mud Creek

Waterbody: Nowater Creek

Upstream, Facing Northeast

Photographer: Victoria Dietz



Zimmerman Draw–HUC #100800070804

Photo Point 79 – Photo #423

Date: July 9, 2009 Time: 14:53

Comments: Perennial Stream Channel – Water from Mud Creek

Waterbody: Nowater Creek

Downstream, Facing Southwest

Photographer: Victoria Dietz



Nowater Creek Sand Draw–HUC #100800070802      Waterbody: Nowater  
Photo Point 80 – Photo #424      Upstream, Facing East  
Date: July 9, 2009      Time: 15:05      Photographer: Victoria Dietz  
Comments: Ephemeral Stream Channel – Standing Water (Above Mud Creek Conf.)



Nowater Creek Sand Draw–HUC #100800070802      Waterbody: Nowater  
Photo Point 80 – Photo #425      Downstream, Facing Southwest  
Date: July 9, 2009      Time: 15:06      Photographer: Victoria Dietz  
Comments: Ephemeral Stream Channel – Dry (Above Mud Creek Conf.)



East Fork Nowater Creek–HUC #100800070807      Waterbody: Nowater  
 Photo Point 84 – Photo #432      Downstream, Facing Southwest  
 Date: July 9, 2009      Time: 15:58      Photographer: Victoria Dietz  
 Comments: Intermittent Stream Channel – Flowing Water Contributed by Mud Creek  
 (Lower Left of Photo is East Fork Nowater Channel)



East Fork Nowater Creek–HUC #100800070807      Waterbody: East Fork of Nowater  
 Photo Point 84 – Photo #433      Upstream, Facing South East  
 Date: July 9, 2009      Time: 15:59      Photographer: Victoria Dietz  
 Comments: Ephemeral Stream Channel - Dry (Just Above Confluence of Nowater)



East Fork Nowater Creek–HUC #100800070807

Photo Point 07 – Photo #303

Date: June 30, 2009 Time: 13:47

Comments: Ephemeral Stream Channel - No Flow (at concrete slab crossing)

Waterbody: East Fork of Nowater

Downstream, Facing Northwest

Photographer: Caryn Agee



East Fork Nowater Creek–HUC #100800070807

Photo Point 07 – Photo #305

Date: June 30, 2009 Time: 13:47

Comments: Ephemeral Stream Channel - Standing water (at concrete slab crossing)

Waterbody: East Fork of Nowater

Upstream, Facing East

Photographer: Caryn Agee



East Fork Nowater Creek–HUC #100800070807  
Photo Point 72 – Photo #407  
Date: July 9, 2009 Time: 12:04  
Comments: Ephemeral Stream Channel - Dry

Waterbody: East Fork of Nowater  
Downstream, Facing South West  
Photographer: Victoria Dietz



East Fork Nowater Creek–HUC #100800070807  
Photo Point 72 – Photo #409  
Date: July 9, 2009 Time: 12:04  
Comments: Ephemeral Stream Channel - Dry

Waterbody: East Fork of Nowater  
Upstream, Facing South East  
Photographer: Victoria Dietz



East Fork Nowater Creek–HUC #100800070807  
Photo Point 71 – Photo #405  
Date: July 9, 2009 Time: 11:36  
Comments: Ephemeral Stream Channel - Dry

Waterbody: East Fork of Nowater  
Upstream, Facing South East  
Photographer: Victoria Dietz



East Fork Nowater Creek–HUC #100800070807  
Photo Point 71 – Photo #406  
Date: July 9, 2009 Time: 11:36  
Comments: Ephemeral Stream Channel - Dry

Waterbody: East Fork of Nowater  
Downstream, Facing West  
Photographer: Victoria Dietz

Figure B-3. Excerpts from the Fifteenmile Creek Recreation UAA (14 pages).

**Recreational Use Attainability Analysis**  
**Fifteenmile Creek**  
**Park, Hot Springs, Big Horn and Washakie Counties, Wyoming**  
**December 14, 2009**

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**District Director,**  
**Washakie County Conservation District**

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**District Specialist,**  
**Washakie County Conservation District**

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**District Chairman,**  
**Washakie County Conservation District**

## Introduction

This Recreational Use Attainability Analysis (UAA) petition is to recommend a change in the recreational use designation of Fifteenmile Creek upstream of photo point 40 (Figure 1) and its tributaries. Fifteenmile Creek headwaters are in Park County, but most of the length of the Creek and its tributaries are located in Big Horn, Hot Springs, and Washakie County where it confluences with the Big Horn River at Worland.

Fifteenmile Creek and the majority of its tributaries identified on Wyoming DEQ's Table A Surface Water Classification Table, are currently designated as a 3B waterbody, protected for primary contact recreation. One exception is the South Fork of Fifteenmile Creek, which is currently designated as a 2AB waterbody. This document was developed following the guidelines outlined in the procedures for recreation designations located in the Wyoming Surface Water Quality Standards Implementation Policies for Use Attainability Analysis, February 2007 (Implementation Policies). This document outlines the basic information necessary to verify that "secondary contact recreation waters" is the appropriate designation for Fifteenmile Creek and its tributaries.

Fifteenmile Creek does not currently, nor has it ever, supported primary contact recreation uses. The majority of the watershed has very limited accessibility as it is in a very remote area of Washakie County. There are no municipalities or high density housing areas in the entire watershed. Many reaches of Fifteenmile Creek and most of the tributaries are not accessible by any roads. The roads that do exist within the watershed are largely seasonal graded dirt roads, two track roads, and gravel roads maintained by oil companies. The segment of Fifteenmile Creek and its tributaries that are included in this petition do not attract anglers or boaters as the waterbodies do not support game fish. In this petition, we visited as many sites as were accessible by four wheel drive vehicle and have photo documentation of conditions throughout the watershed.

### I. Name and Location

**Waterbody name:** Fifteenmile Creek

**Watershed (HUC):** 1008000711

**Upstream Location:** NW¼ SW¼, S25, T47N, R93W; Lat, Long: 44.15774°N, 108.670109°W

**Downstream Location:** NE¼ NW¼, S27, T47N, R93W; Lat, Long: 44.01234°N, 107.979399°W

**Note** – All of the tributaries included on the map are being petitioned for secondary contact recreation. In addition, the following tributaries are also included on Table A of the Wyoming Surface Water Classification List:

North Fork Fifteenmile Creek, South Fork Fifteenmile Creek, Middle Fork Fifteenmile Creek, Crooked Creek, Dry Cottonwood Creek, Rock Waterhole Creek, and Wilson Spring Creek (no point on Wilson creek).

### II. Maps, Photographs, & Figures

**Photographs will be included as attachments grouped by twelve-digit HUC as indicated:**

NOTE: The 12 digit HUC numbers used for this report were obtained from the Natural Resources Conservation Service. In the NRCS 12 digit HUC layer, some of the numbers are duplicated. However, even though this isn't the most current GIS HUC layer available, we have chosen to use it, as it is the GIS layer that was being used by WDEQ as of September, 2009.

- Attachment A: North Fork Fifteenmile Creek - HUC 100800070909
- Attachment B: Lower Fifteenmile Creek-Reservoir Creek – HUC 100800070909
- Attachment C: Upper Fifteenmile Creek-Parker Spring Draw – HUC 100800070902
- Attachment D: Lower Fifteenmile Creek-Schuster Draw – HUC 100800071001
- Attachment E: Upper Fifteenmile Creek – Badger Creek – HUC 100800070903
- Attachment F: Dry Cottonwood Creek – Fifteenmile Creek – HUC 100800070906
- Attachment G: Upper Fifteenmile Creek – Big Draw – HUC 100800070904
- Attachment H: South Fork Fifteenmile Creek – HUC 100800070909
- Attachment I: Middle Fork Fifteenmile Creek – HUC 100800070907
- Attachment J: Upper Fifteenmile Creek – Timber Creek – HUC 1008000070906

### III. Primary Use Factors:

- No      *Water is located within or flows through a federal, state, or local park or recreation area. Federal, state, or local park or recreation area. Federal, state or local parks should not be construed to mean all public lands, but rather specifically developed and/ or designated recreational use areas such as campgrounds, picnic grounds, trailheads, greenways, etc.*
- No      *Water is a lake, reservoir or other still body of water. (Exclude small stock watering ponds).*
- No      *Water is within or flows through a municipality or unincorporated high density housing area.*
- No      *Water is a larger perennial stream or game fishery known to be used by sportsmen or other recreationists.*
- No      *Water is used or can be used for primary contact activities such as swimming, floating, rafting, canoeing or kayaking.*

### IV. Use Removal Factors

- N/A      *(i) Naturally occurring pollutant concentrations prevent the attainment of the classification or use; or*
- Yes      *(ii) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met; or*
  - All of the streams included in this petition are naturally intermittent or ephemeral. In its last 2.85 stream miles before the confluence of the Big Horn River, Fifteenmile Creek

receives irrigation return flow and is used as an overflow spillway for the Big Horn Canal.  
(Between Photo Point #39 and Photo Point #40)

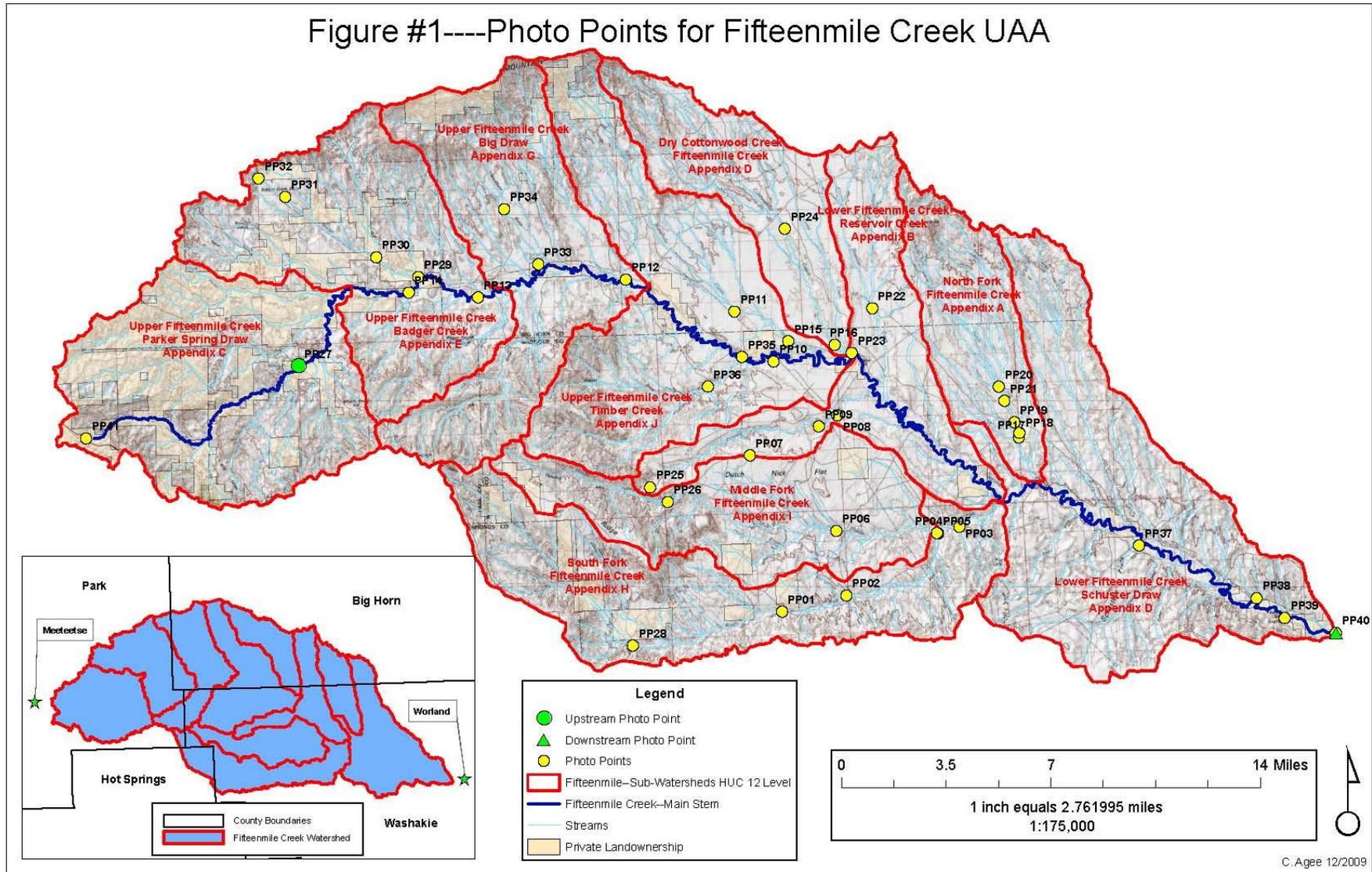
- N/A (iii) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
- N/A (iv) Dams, diversions, or other types of hydrologic modifications preclude the attainment of the classification or use, and it is not feasible to restore the water body to its original condition or to operate such modification in such a way that would result in the attainment of the classification or use; or
- Yes (v) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of the classification or use; or
- Much of the area is characterized by very fine and soft substrate that make it unsuitable for wading (quicksand like substrate).

## V. Precipitation Records Within the Fifteenmile Watershed

Precipitation data has been obtained from the Worland BLM's Rain Gauge Data (Figure 3) and The National Climatic Data Center (Figure 4, below) in order to show precipitation levels in relation to photos in this report. The precipitation totals are based upon incomplete information due to inaccessibility to the site or damaged or missing gauges during different months within each year.

<b>Figure 4</b>					
<b>Yearly Precipitation Data for Worland Station (NOAA)</b>					
<b>Location: Lat. 43°58'N, Lon. 107°57'W</b>					
	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>
Precipitation In Inches	8.93*	3.91	4.61	8.29	5.4**
*Indicates Missing Data from Month of July					
**Current year, data only through September 30th					

Figure #1----Photo Points for Fifteenmile Creek UAA

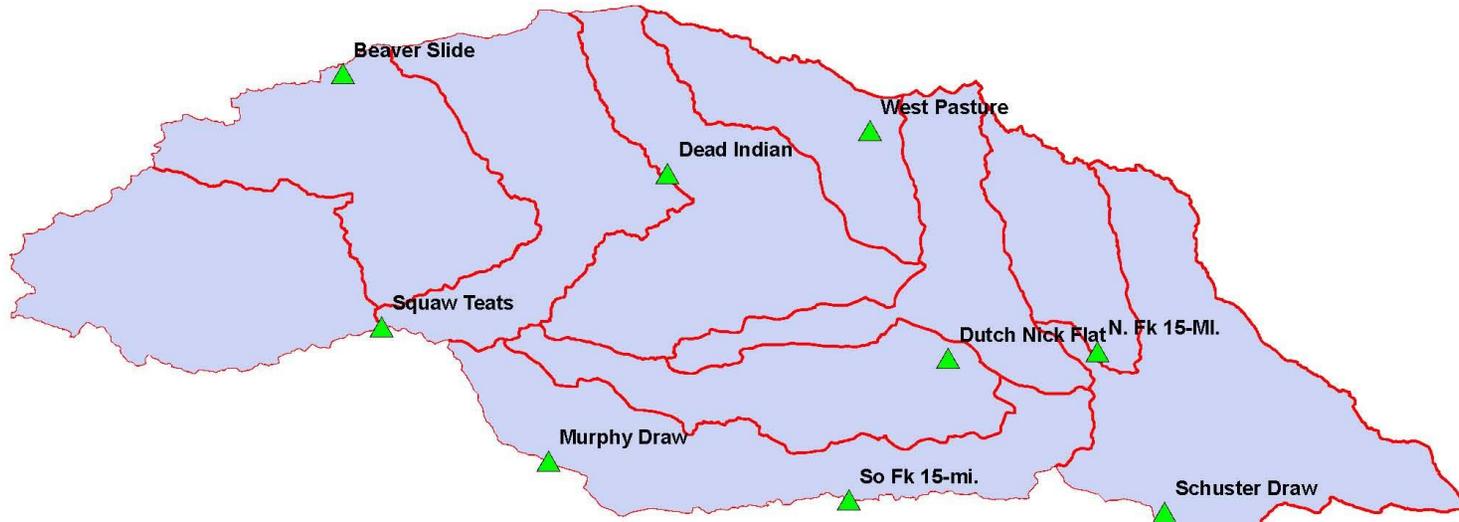


C. Agee 12/2009

**Figure 2--Photo Points and Location Information for Fifteenmile UAA**

Photo Point	Water Body Name	Photo Numbers	Hydrologic Unit 12 Digit Name	Hydrologic Unit Code Number	GPS Date and Time	Altitude	Latitude	Longitude	Y Projection	X Projections
PP10	Fifteenmile Creek	551-552	Upper Fifteenmile Creek-Timber Creek	100800070906	17-AUG-09 12:12	4521.00	44.15284448	-108.35065727	4892262.43772090	711864.99390192
PP12	Fifteenmile Creek	555-556	Upper Fifteenmile Creek-Big Draw	100800070904	17-AUG-09 13:27	4657.00	44.19471310	-108.44818071	4896666.22549367	703921.56360370
PP23	Fifteenmile Creek	581-582	Lower Fifteenmile Creek-Reservoir Creek	100800070909	18-AUG-09 10:04	4453.00	44.15577102	-108.29791959	4892724.79674867	716071.77581849
PP37	Fifteenmile Creek	625-626	Lower Fifteenmile Creek-Schuster Draw	100800071001	15-SEP-09 14:42	4232.00	44.05807064	-108.10936592	4882385.82315159	731531.22438413
PP38	Fifteenmile Creek	627-628	Lower Fifteenmile Creek-Schuster Draw	100800071001	15-SEP-09 14:58	4145.00	44.03061236	-108.03173994	4879557.18963706	737858.96610902
PP39	Fifteenmile Creek	629-630	Lower Fifteenmile Creek-Schuster Draw	100800071001	16-SEP-09 07:24	4101.00	44.02051988	-108.01347937	4878489.08251657	739362.95332180
PP40	Fifteenmile Creek	631-632	Lower Fifteenmile Creek-Schuster Draw	100800071001	16-SEP-09 07:40	4074.00	44.01234048	-107.97939898	4877680.16652813	742127.82146280

Figure #3----BLM Rain Gauges in Fifteenmile Creek Watershed



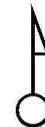
GAUGE_NAME	2005 ANNUAL PRECIP. INCHES	2006 ANNUAL PRECIP. INCHES	2007 ANNUAL PRECIP. INCHES	2008 ANNUAL PRECIP. INCHES	2009 ANNUAL PRECIP. INCHES
NORTH FORK FIFTEENMILE	8.02	4.86	4.44	6.21	6.59*
DUTCH NICK FLAT	7.94	5.33	5.5	3.95	6.4*
WEST PASTURE	7.19	3.31	5.39	6.53	6.01*
SOUTH FORK FIFTEENMILE	8.57	5.98	5.66	9.2	8.41*
SCHUSTER DRAW	9.25	5.98	5.51	8.93	8.85*
DEAD INDIAN	7.97	4.92	6.92	7.3	6.92*
BEAVER SLIDE	11.58	7.49	9.07	10.55	11.4*
SQUAW TEATS	7.86	4.52	6.07	7.83	8.39*
MURPHY DRAW	8.79	6.22	5.74	7.4	6.9*

\*Current Year Data through September 30th



1 inch equals 5.918561 miles

1:375,000



C.Agee 12/2009



Lower Fifteenmile Creek-Schuster Draw–HUC #100800071001      Waterbody: Fifteenmile Creek  
Photo Point 40 – Photo #631      Upstream, Facing West  
Date: September 16, 2009      Time: 7:40      Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - Standing Water (At Bridge Below Siphon)



Lower Fifteenmile Creek-Schuster Draw–HUC #100800071001      Waterbody: Fifteenmile Creek  
Photo Point 40 – Photo #632      Downstream, Facing North  
Date: September 16, 2009      Time: 7:41      Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - From Bridge (At Confluence with Big Horn River)



Lower Fifteemile Creek-Schuster Draw-HUC #100800071001      Waterbody: Fifteemile Creek  
Photo Point 39 – Photo #629      Upstream, Facing West  
Date: September 16, 2009      Time: 7:25      Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - Standing Water (At Syphon)



Lower Fifteemile Creek-Schuster Draw-HUC #100800071001      Waterbody: Fifteemile Creek  
Photo Point 39 – Photo #630      Downstream, Facing East  
Date: September 16, 2009      Time: 7:25      Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - Standing Water (At Siphon)



Lower Fifteemile Creek-Schuster Draw–HUC #100800071001  
Photo Point 38 – Photo #627  
Date: September 15, 2009 Time: 14:58  
Comments: Ephemeral Stream Channel - Sparse Puddles

Waterbody: Fifteemile Creek  
Downstream, Facing East  
Photographer: Tori Dietz



Lower Fifteemile Creek-Schuster Draw–HUC #100800071001  
Photo Point 38 – Photo #628  
Date: September 15, 2009 Time: 14:59  
Comments: Ephemeral Stream Channel - Sparse Puddles

Waterbody: Fifteemile Creek  
Upstream, Facing West  
Photographer: Tori Dietz



Lower Fifteenmile Creek-Schuster Draw-HUC #100800071001      Waterbody: Fifteenmile Creek  
Photo Point 37 – Photo #625      Upstream, Facing West  
Date: September 15, 2009      Time: 14:42      Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - Sparse Puddles



Lower Fifteenmile Creek-Schuster Draw-HUC #100800071001      Waterbody: Fifteenmile Creek  
Photo Point 37 – Photo #626      Downstream, Facing East  
Date: September 15, 2009      Time: 14:43      Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - Sparse Puddles



Lower Fifteenmile Creek–Reservoir Creek HUC #100800070909 Waterbody: Fifteenmile Creek  
Photo Point 23 – Photo #581 Downstream, Facing South  
Date: August 18, 2009 Time: 10:03 Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - Wet Sand Due To Recent Storm Event



Lower Fifteenmile Creek–Reservoir Creek HUC #100800070909 Waterbody: Fifteenmile Creek  
Photo Point 23 – Photo #582 Upstream, Facing West  
Date: August 18, 2009 Time: 10:04 Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - Wet Sand Due To Recent Storm Event



Upper Fifteenmile Creek-Timber Creek– HUC #100800070906      Waterbody: Fifteenmile Creek  
Photo Point 10 – Photo #551      Upstream, Facing South  
Date: August 17, 2009      Time: 12:12      Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - Slight Flow Due To Recent Storm Event



Upper Fifteenmile Creek-Timber Creek– HUC #100800070906      Waterbody: Fifteenmile Creek  
Photo Point 10 – Photo #552      Downstream, Facing North  
Date: August 17, 2009      Time: 12:12      Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - Slight Flow Due To Recent Storm Event



Upper Fifteenmile Creek-Big Draw-HUC #100800070904 Waterbody: Fifteenmile Creek  
Photo Point 12 – Photo #555 Upstream, Facing West  
Date: August 17, 2009 Time: 13:28 Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - Slight Flow Due To Recent Storm Event



Upper Fifteenmile Creek-Big Draw-HUC #100800070904 Waterbody: Fifteenmile Creek  
Photo Point 12 – Photo #556 Downstream, Facing East  
Date: August 17, 2009 Time: 13:29 Photographer: Tori Dietz  
Comments: Ephemeral Stream Channel - Slight Flow Due To Recent Storm Event

Figure B-4. Poison Creek Recreation UAA (18 pages).

Recreational Use Attainability Analysis  
Poison Creek  
Fremont County, Wyoming

Cathy Meyer

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Manager, Lower Wind River Conservation District

Rob Hendry

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Chairman, Poison Creek Steering Committee

Gavin Woody

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Chairman, Lower Wind River Conservation District

## Introduction

This Recreational Use Attainability Analysis (UAA) petition is to recommend a change in the recreational use designation of Poison Creek in Fremont County, Wyoming.

Poison Creek is currently designated as a 2AB waterbody, protected for primary contact recreation, and listed on Table A of Wyoming's Surface Water Classification List. This document was developed following the guidelines outlined in the procedures for recreation designations located in the Wyoming Surface Water Quality Standards Implementation Policies for Use Attainability Analysis, February 2007 (Implementation Policies). This document outlines the basic information necessary to verify that "secondary contact waters" is the appropriate designation for Poison Creek in Fremont County, Wyoming.

In Implementation Policies, Section VII, UAA procedures for Recreation Designations, the different designations for recreation are discussed. The policy states that "A 'Primary Contact Recreation' designation is intended to apply to those waters where there is a reasonable potential for people to engage in full body contact with the water and/or a potential to ingest small quantities." This is in contrast to those waters that are likely to be used for recreational activities that do not involve full body immersion or where a risk of ingestion is limited. Policy reads that "The 'Secondary Contact Recreation' designation is intended to apply to all waters where those circumstances do not occur."

Poison Creek is a small stream that has little to no value as recreational water. It is intermittent in nature, and dry during the greater part of the recreation season along a vast majority of its length. There is no capacity for recreational activities such as fishing, swimming, boating or other endeavors where immersion might be expected. Given the extremely limited potential for recreational activities on this waterbody, a Secondary Contact Recreation designation along with its standards would be appropriate; thus, a change of designation is recommended.

## I. Name and Location

**Waterbody Name:** Poison Creek

**Watershed (HUC):** 10080005

**Upstream Location:** Near Hiland, Wyoming (T36NR88W)

Lat Long  
N 43.0849°  
W 107.3117°

**Downstream Location:** Confluence of Poison Creek with Boysen Reservoir (T38NR94W)

Lat Long  
N 43.2382°  
W 108.1453°

## II. Maps & Photographs

See the following attached maps and photographs:

- Photo 1- Bottom section of Poison Creek, highway crossing, near the outlet of Poison Creek, looking upstream.
- Photo 2- Bottom section of Poison Creek, highway crossing, near the outlet of Poison Creek, looking downstream.
- Photo 3- Entrance of wetland where Poison Creek empties next to Boysen Reservoir, looking upstream.
- Photo 4- Poison Creek at its' location closest to the town of Shoshoni, looking upstream.
- Photo 5- Poison Creek at the location most proximate to Shoshoni, looking downstream
- Photo 6- Utility corridor crossing Poison Creek at the location most proximate the town of Shoshoni.
- Photo 7- Culverts for transmission of Poison Creek under a county road near the town of Shoshoni
- Photo 8- Poison Creek, representative location in the lower quarter of the creek, looking upstream.
- Photo 9- Poison Creek, representative location in the lower quarter of the creek, looking downstream.
- Photo 10- Representative photo of Poison Creek taken somewhere below the middle of the stream, looking downstream.
- Photo 11- Representative photo of Poison Creek taken somewhere below the middle of the stream, looking upstream.
- Photo 12- Poison Creek, above the middle section of the creek, representative location, looking upstream.
- Photo 13- Poison Creek, above the middle section of the creek, representative location, looking downstream.
- Photo 14- Photograph taken near the upper section of Poison Creek, looking upstream.
- Photo 15- Photograph taken near the upper section of Poison Creek, looking downstream.
- Figure 1. Poison Creek Watershed Map.
- Figure 2. CIR of Poison Creek proximate the town of Shoshoni.
- Figure 3. CIR and land Ownership proximate Boysen Reservoir and Shoshoni.

### III. Primary Use Factors

NO. *Water is located within or flows through a federal, state, or local park or recreation area.*

There are no designated recreational use areas in the Poison Creek watershed until it meets Boysen Reservoir. Poison Creek is not a major contributing water to the reservoir.

NO. *Water is a lake, reservoir or other still body of water.*

Poison Creek is a small, intermittent stream.

NO. *Water is within or flows through a municipality or unincorporated high density housing area.*

The town of Shoshoni is the closest municipality to the stream channel but the stream does not pass through the town.

NO. *Water is a larger perennial stream or game fishery known to be used by sportsmen or other recreationists.*

Poison Creek is not a game fishery. Wyoming Game and Fish Department records indicate that Poison Creek may support spawning of some species, but it is not a sport fishery. Recreation within the watershed is not related to aquatic activities because there is insufficient flow to support recreational activities within the stream.

NO. *Water is used or can be used for primary contact activities such as swimming, floating, rafting, canoeing or kayaking.*

The flow in Poison Creek will not support aquatic recreation activities.

### IV. Use Removal Factors

N/A. *(i) Naturally occurring pollutant concentrations prevent the attainment of the classification or use.*

YES. *(ii) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating state water conservation requirements to enable uses to be met.*

During most of the year, including the largest part of the recreational season, Poison Creek does not maintain a constant flow. The creek can have significant flows during

storm events, but during much of the year flow is insufficient to register flows on sampling equipment.

N/A . (iii) *Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place.*

N/A . (iv) *Dams, diversions, or other types of hydrologic modifications preclude the attainment of the classified use, and it is not feasible to restore the water body to its original condition or to operate such modification in such a way that would result in the attainment of the classification or use.*

YES . (v) *Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of the classification or use.*

The physical conditions of Poison Creek are such that substrates are largely sands, there are no pools or riffles, and there are no similar conditions that would either permit or encourage primary contact recreational use.

N/A . (vi) *Controls more stringent than those required by Sections 301(b) and 306 of the Federal Act would result in substantial and widespread economic and social impact. This subsection shall not apply to the derivation of site-specific criteria.*

#### **IV. List of Preparers**

Poison Creek Watershed Steering Committee

Lower Wind River Conservation District

Natural Resources Conservation Service

All of the above may be reached at  
508 North Broadway Avenue  
Riverton, WY 82501

307-856-7524 (Telephone)

307-856-2383 (FAX)



Photo 1- Bottom section of Poison Creek, highway crossing, near the outlet of Poison Creek, looking upstream. This picture was taken from the highway looking upstream toward the old railroad bridge over the creek.

UTM  
Zone 12T, 0732838 E, 4790586 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°13.928'  
W 108°07.958  
American Datum 1983 (NAD83)



Photo 2- Bottom section of Poison Creek, highway crossing, near the outlet of Poison Creek, looking downstream. This area is a wide riparian zone with little to no noticeable stream flow, becoming a wetland as Boysen Reservoir is approached.

UTM  
Zone 12T, 0732838 E, 4790586 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°13.928'  
W 108°07.958'  
American Datum 1983 (NAD83)



Photo 3- Entrance of wetland where Poison Creek empties into Boysen Reservoir. This photo was taken looking northwest toward the Owl Creek Mountains and downstream. At this location the creek feeds a large wetland/riparian area on the eastern edge of Boysen Reservoir. It should be noted that Poison Creek rarely flows to this point and that this wetland is mostly fed by groundwater and wetting related to the reservoir itself.

UTM  
Zone 12T, 0734807 E, 4797327 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°14.678'  
W 108°09.036'  
American Datum 1983 (NAD83)



Photo 4- Poison Creek at its location closest to the town of Shoshoni, looking upstream. The channel is composed of mostly fine sands, is extremely shallow, and the floodplain wide. Poison Creek flows at this point only during large runoff events.

UTM  
Zone 12T, 0734748 E, 4790261 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°13.717'  
W 108°06.546'  
American Datum 1983 (NAD83)



Photo 5  
9/23/2009  
cmeyer

Photo 5- Poison Creek at the location most proximate to Shoshoni, looking downstream. The stream channel at this location is over 20 yards wide and less than 1 foot deep. Water rarely reaches this point, with the exception of large runoff from precipitation events.

UTM  
Zone 12T, 0734748 E, 4790261 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°13.717'  
W 108°06.546'  
American Datum 1983 (NAD83)



Photo 6—Poison Creek at its location near the east edge of the town of Shoshoni looking downstream. Note the utility pole in the upper right side of the photo. This is a utility corridor which can also be seen in the previous photo running perpendicular to and under the stream bed. This illustrates that the flows are low enough that there is little danger in washing out the utility lines.

UTM  
Zone 12T, 0734748E, 4790261 N  
North American Datum 1983 (NAD83)

Lat Long  
N 43° 13.717'  
W 108°06.546'  
American Datum 1983 (NAD83)



Photo 7- Culverts for transmission of water in Poison Creek under a county road near the town of Shoshoni. As noted previously, although this stream rarely flows past this point, the watershed is large, and in high precipitation events, dangerously large amounts of water can fill the flood plain. The culverts in the background are 6 feet in diameter, allowing a man to walk through each one.

UTM  
Zone 12T, 0734748 E, 4790261 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°13.717'  
W 108°06.546'  
American Datum 1983 (NAD83)



Photo 8-This photo of Poison Creek was taken from Highway 20 about six miles east of the town of Shoshoni looking downstream. The substrates are fine sands and the flood plain is wide. No water was flowing on the day this photo was taken.

UTM  
12T, 279559.2 E, 4781279.5 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°09.129'  
W 107°42.669'  
American Datum 1983 (NAD83)



Photo 9- Representative photo of Poison Creek taken about six miles east of the town of Shoshoni, looking upstream. The channel in this location is narrow and shallow. On the day that this photo was taken, no water was flowing.

UTM  
Zone 13T, 279559.2 E, 4781279.5 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°09.129'  
W 107°42.669'  
American Datum 1983 (NAD83)



Photo 10- Poison Creek about eleven miles east of the Town of Shoshoni looking upstream. This point is the only location where noticeable flows were present on the creek. However, the depth of the water was less than four inches. In this location, the flood plain is constricted by surrounding geologic formations.

UTM  
Zone 13T, 0262501 E, 4786656 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°11.722'  
W 107°55.363'  
American Datum 1983 (NAD83)



Photo11- Poison Creek at a location approximately eleven miles east of the town of Shoshoni, looking downstream. On the day this picture was taken, this was the only site on the creek with running water the depth of which was less than four inches.

UTM  
Zone 13T, 0262501 E, 4786656 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°11.722'  
W 107°55.363'  
American Datum 1983 (NAD83)



Photo 12  
9/28/2009  
cmeyer

Photo 12- Poison Creek about twenty miles east of the town of Shoshoni from the Castle Gardens road above the middle section of the creek, looking upstream. The channel here is shallow and somewhat grassed in.

UTM  
Zone 13T, 0303108 E, 4778517 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°08.028'  
W 107°25.258'  
American Datum 1983 (NAD83)



Photo 13- Poison Creek about twenty miles east of Shoshoni from the Castle Gardens road above the middle section of the creek, looking downstream. The stream channel meanders at this location, and this picture is taken facing north, whereas the other pictures in this series face east or west.

UTM  
Zone 13T, 0303108 E, 4778517 N,  
North American Datum 1983 (NAD83)

Lat Long  
N 43°08.028'  
W 107°25.258'  
American Datum 1983 (NAD83)