

**Response to Comments on the July 2012 Draft Use Attainability Analysis for 18
Unclassified Non-Perennial Watercourses
with NPDES Permitted Facilities**

Prepared by the NMED Surface Water Quality Bureau
October 2012

In July of 2012, the Surface Water Quality Bureau (SWQB) released for public comment a Draft Use Attainability Analysis for 18 Unclassified Non-Perennial Watercourses. The comment period closed on August 28, 2012. SWQB received two comment sets as listed below.

Comments and SWQB Response

Gale Henslee (Xcel Energy).....	2
Amigos Bravos.....	2

Appendix A: Full Comment Sets

Appendix B: NMED Response to Amigos Bravos' Comments on the January 2011 of the Draft Update of New Mexico's Water Quality Management Plan

Gale Henslee Comment (Xcel Energy for Southwestern Public Service Company):

I am writing on behalf of Southwestern Public Service Company (NPDES permit NM0029131), to express support for the process and the proposed revision of the applicable water quality standards as proposed on July 27, 2012... We appreciate the effort put forth by the NMED and their subcontractor in documenting the site conditions, and support the conclusion that the standards of 20.6.4.97 NMAC are more reasonable in this case.

[See Mr. Henslee's email in *Appendix A* for the full text of his comments.]

NMED Response: Comment noted.

Amigos Bravos Comments

Comment 1. Hydrological Status of a Stream is Different from 101 (a)(2) Use Determination.

A major flaw with the Hydrology Protocol (HP) and associated expedited UAA process is that it confuses determination of the hydrological status of a stream (perennial, intermittent or ephemeral) with 101(a)(2) uses.

[See Comment 1 of Amigos Bravos' comments in *Appendix A* for the full discussion.]

Comment 2. The Draft UAA Does Not Adequately Identify Existing Uses

The intention of both the national Clean Water Act and the NM Water Quality Act is to protect water quality for all existing uses of a stream, regardless of the stream's hydrologic characteristics.

[See Comment 2 of Amigos Bravos' comments in *Appendix A* for the full discussion.]

NMED Response:

As noted by Amigos Bravos, comments 1 and 2 repeat concerns raised previously. NMED has addressed these comments in the Response to Comments on the January 2011 Draft Update of New Mexico's Water Quality Management Plan and Continuing Planning Process prepared by the NMED Surface Water Quality Bureau April 2011. See Appendix B response to Amigos Bravos General Comments III.A for full discussion.

In short, a UAA based on the Hydrology Protocol (HP) must be sufficient to demonstrate to the satisfaction of the Water Quality Control Commission (WQCC) and U.S. Environmental Protection Agency (EPA) that the use is not attainable based on the following factor "natural, ephemeral, intermittent, or low flow conditions or water levels prevent the attainment of the use..." from 40 CFR 131.10(g). As required by the NM Water Quality Management Plan, 2011 (WQMP) the HP provides a tool for evaluating this factor as it relates to flow and water level. Furthermore the HP provides mechanisms to protect current uses when they are documented – if aquatic insects or fish are observed the stream must be classified as at least "Intermittent" (NMAC 20.6.4.98) to protect this 101(a)2 use. Likewise the HP relies on documentation that the current conditions are the "natural" conditions for the watercourse in question to ensure that attainable and existing uses are protected. It is not possible for the HP or any other

procedure to “prove” that a use is not “attainable” or has not “existed”. By reviewing climatic information, water diversions, groundwater pumping and discharge information, all of which are included in the HP assessment – provides reasonable grounds to conclude that the current uses are the same as the attainable and existing uses. Simply stated, the level of detail described to evaluate existing uses by Amigos Bravos is unnecessary to reach a reasonable conclusion about the attainable, existing and current uses that can be supported by a stream.

In addition, while the HP does not require that the entire stream be surveyed, it does require consideration of satellite imagery and other information to select representative evaluation sites and to document the homogeneity of the reach (see revised discussion in the Level 1 Office Procedures and the Reach Evaluation section of the expedited UAA cover sheet). SWQB believes that requiring the type of detailed survey suggested would create an unreasonable burden of proof for many UAAs and render the HP UAA process meaningless.

Finally, Amigos Bravos’ concern that the HP would not identify Section 101(a)(2) uses is misplaced. The HP does require observations for aquatic macroinvertebrates and fish and protects these uses when observed. The examples of aquatic life that Amigos Bravos is concerned about -- amphibians, peaclams, aquatic snails, and fish that may use the stream during high flows -- all fall within the definition of the “limited aquatic life” use that will apply to any stream classified in 20.6.4.97 NMAC approved under the UAA process. Because protection will be provided for this designated use, it is not necessary in the UAA to collect specific information confirming that it exists.

Comment 3. Unable to Verify Drought Index Determination

The drought index for the one site (3 streams) that Amigos Bravos did some follow up research - the Ancho Mine sites in North Central New Mexico – appeared to be incorrect.

[See Comment 3 of Amigos Bravos’ comments in *Appendix A* for the full discussion.]

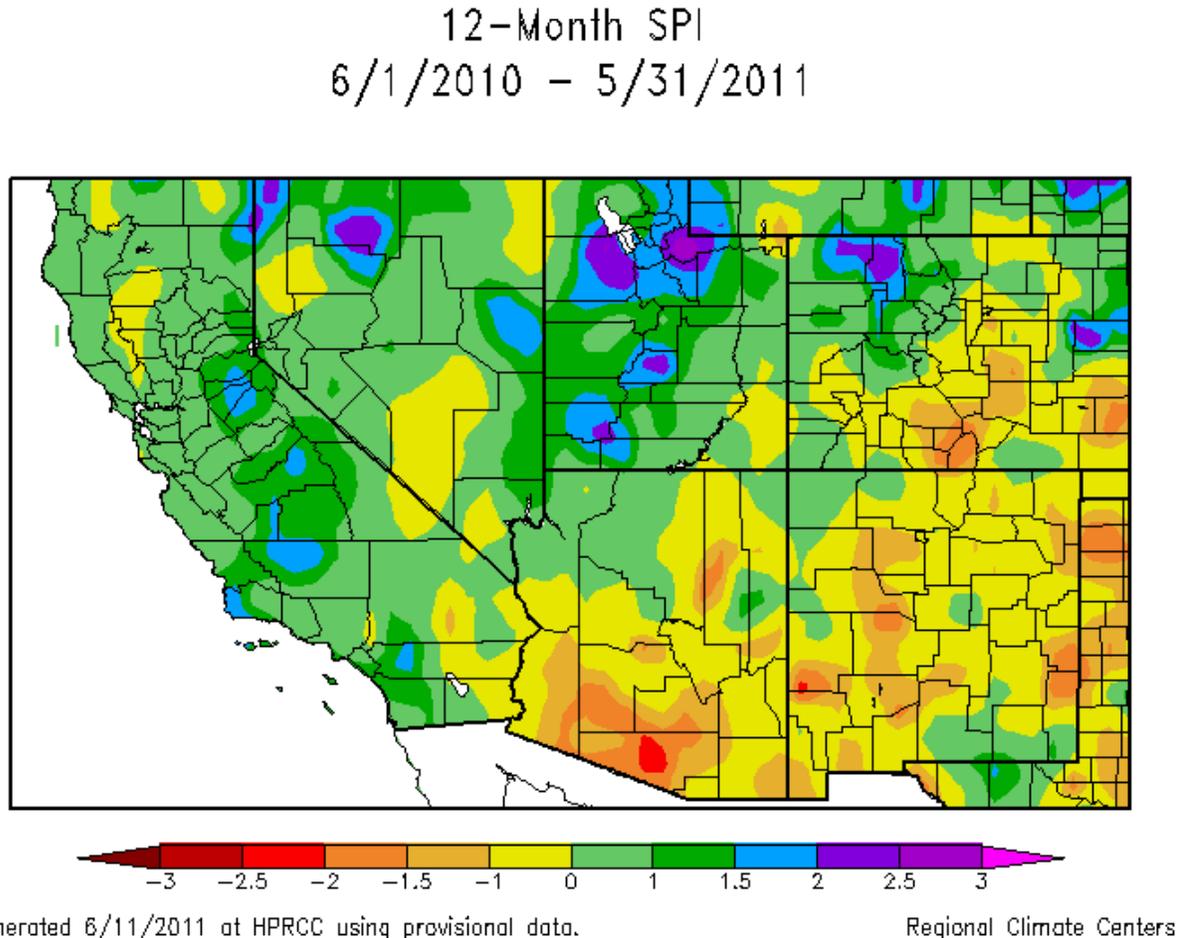
NMED Response:

Drought conditions, for the purposes of the Hydrology Protocol (HP), are defined as any time the Standardized Precipitation Index (SPI) is less than -1.5, indicating severely to extremely dry conditions (National Drought Mitigation Center (NDMC), 1995). The SPI can be calculated many ways, depending on the distribution chosen, and on which data (which years) are allowed to enter into the calculation. The NDMC uses an incomplete Beta statistical distribution and the National Climatic Data Center (NCDC) uses a Pearson III. Both of these distributions should work reasonably well but each bracket the SPI ranges differently. The NCDC will bracket areas of equal SPI into differing and sometimes smaller ranges (-1.29 to -0.8) whereas the NDMC will bracket areas of equal SPI in equally spaced divisions of 0.5 (-1.5 to -1.0). For these reasons SPI values can vary from one source to another.

While NMED realizes that the SPI can be obtained from numerous sources, the HP guidance with regards to SPI was developed specifically from the format developed by the NDMC and the High Plains Regional Climate Center (HPRCC). It is this format for SPI which lead to the SPI value of -1.5 being used to describe extreme drought conditions. Additionally, the HPRCC website provides archival maps for which different time spans and dates can be chosen. This is another reason why the SWQB emphasized the use of this source for SPI values. A specific link (www.hprcc.unl.edu/maps/current/index.php?action=update_daterange&daterange=12m) to this site is provided on page 10 of the HP. Below is the 12 month SPI for the period and site in

question. It can be determined from this map that the 12 month SPI value for the Ancho Mine sites was (-1.0 to 0.0) for period ending May 31, 2011, which would be the appropriate timeframe for field work completed in June 2011. These values are above the SPI cutoff for drought conditions in the HP.

Figure 1. 12 Month SPI



During the time of these field assessments, the HPRCC SPI site was down and the contractor requested an alternative source for the SPI and it was agreed that the NCDC SPI was an acceptable source and is the value cited on the field form for this location. As a comparison between the two different sources, the SPI range for the most recent 12 month SPI values for Ancho site results in an SPI range of (-1.29 to -0.8) from the NCDC and a SPI range of (-1.0 to 0.0) from the NDMC. Unfortunately, archival maps from the NCDC are not available.

Comment 4A. Gachupin Canyon Site Visit Indicated Wetter Conditions Than Reported in the Draft UAA

Amigos Bravos visited the Gachupin Canyon site with Rich Powell (NMED) and Cameron Twing (Trihydro) on August 21, 2012.

[See Comment 4A in Appendix A for full comment.]

NMED Response:

*Weather records for Amigos Bravos August 21 visit do not indicate rain near the site in the previous 48 hours but to reduce the sources of variability, the HP specifies that Level 1 Field Evaluation should occur during stable baseflow conditions which will vary by region and elevation of the sample reach, but is typically between late May and mid July (to avoid snowmelt) **OR** mid September and early November (to avoid monsoons). The HP has been developed based on data collections for these periods. As such the conditions between these two visits may be somewhat different.*

The HP is designed to evaluate sites during stable hydrologic conditions to reduce sources of variability. Avoiding the snowmelt or monsoon season is critical to the accurate characterization of stable baseflow conditions at a site.

Comment 4B.

The fieldwork that was conducted in this Draft UAA utilized only this first section (6 factors) of the hydrology protocol at all sites. Four of these six factors are completely dependent on the presence of water at the time of the survey. As noted early in these comments, these surveys were conducted in late June, during a typically very dry time of the year. [See Comment 4 of Amigos Bravos' comments for full discussion.]

NMED Response:

The protocol and scoring mechanism have been designed with redundancy (i.e. multiple indicators) to allow for satisfactory ratings even after a recent rainfall or during drought conditions. As the HP is based on assessing the natural flow conditions and the attainment of 101(a)(2) uses it is appropriate that these factors relate to the presence or absence of water. It is important to note that two of these factors, macroinvertebrates and fish, also relate to identifying the presence of aquatic life in the stream. NMED notes that desiccated filamentous algae have been observed when no water is present.

Comment 4C.

In addition, the 24-month SPI included above indicates that the area was in a drought.

NMED Response:

See response to Comment 3.

Comment 4D.

The lower site on Gachupin Canyon scored a 4 in Amigos Bravos application of the first section of the hydrology protocol (NMED scores was a 2). Both the "Differences in Vegetation" and the "Absence of Rooted Upland Plants in Streambed" were noted with a score of 2 to make a total of 4 for the reach. [See Comment 4 of Amigos Bravos' comments for full discussion.]

NMED Response:

The protocol and scoring mechanism have been designed with redundancy (i.e. multiple indicators) to allow for satisfactory ratings even after a recent rainfall or during drought conditions. Although Amigos Bravos has indicated wetter conditions and recorded a different score at this site during what is typically the monsoon season, they provide no further evidence to suggest that the ultimate determination of the site was anything other than ephemeral. A score of 4 on the HP at a site would initiate the collection of additional Level 1 indicators which would provide more information about the site's hydrology. NMED has not received any further documentation that a Level 1 evaluation, performed and according to the HP, had a final score higher than 9. As such the NMED determination of ephemeral at this site is unchanged.

Comment 4E.

While many of the others appear to be very ephemeral in nature from the photos included in the Draft UAA, we found that photos, unless comprehensive photos are taken of the entire segment, can be misleading. [See Comment 4 of Amigos Bravos' comments for full discussion.]

NMED Response:

This comment was previously addressed in the Response to Comments on the January 2011 Draft Update of New Mexico's Water Quality Management Plan and Continuing Planning Process prepared by the NMED Surface Water Quality Bureau April 2011. NMED's response is quoted below:

The Photodocumentation section under the Level 1 Field Procedures has been modified as follows:

... It is essential to take several photos of the sample reach, AU and/or watershed, as appropriate, to document the environmental conditions and any disturbances or modifications that are relevant to making a final hydrology determination. Multiple and varied photos will help evaluate and verify the homogeneity of the AU as well as the representativeness of the sample reach when and if a UAA is reviewed by NMED, EPA and the WQCC. ...

Comment 4F.

Our field visit also showed signs of grazing (see picture 4). In some sections there was quite a bit of manure either from buffalo or cows. Grazing was not mentioned in the Draft UAA as a hydrologic/other modification that was present at this site. [See Comment 4 of Amigos Bravos' comments for full discussion.]

NMED Response:

The cover sheet for this site indicates the presence of elk grazing as a land use observation.

Comment 4G.

In addition there is a high prevalence of head cuts and eroded banks in this reach. This indicates that there has been some sort of hydrologic modification that has resulted in the channel incising and the water table dropping. The historic conditions of this stream could very well have been drastically different and much wetter before the down cutting of the channel and the draining of the wet meadows/surrounding wetlands. This impact could be from the historic ranching practices on the property, from mining practices, from associated roads with both of these land uses, from grazing, and from a change in climate. The question, in terms of CWA applicability, is whether these changes occurred before or after 1975 and if they occurred afterwards, were there existing 101(a)(2) use in the water body since 1975. To answer these questions further (and different) study must be conducted.

[See Comment 4 of Amigos Bravos' comments for full discussion.]

NMED Response:

The most recent period of arroyo formation in the southwest, which occurred from about 1865 to 1915, has been the subject of much scientific debate. In the USGS summary paper titled "The Arroyo Problem in the Southwestern United States", the historical cycles of incision in the southwest and their possible causes are discussed. "Three factors may cause arroyo formation, but the relative contribution of each is difficult to discern. The main factor is thought to be a change in climate that produced unusually heavy rainfall. Land-use practices, such as grazing, may have enhanced arroyo formation in the southwest during the most recent period of erosion (A.D. 1865-1915). A natural cycle of erosion and deposition caused by internal adjustments to the channel system is a third possibility. While it is arguable which component has contributed the most to arroyo formation in the Southwest, it is widely accepted that climatic events, human settlement and land use, and naturally occurring internal adjustments in drainages are probable causes. The temporal coincidence of the causes may have magnified the effect of each factor." (Vogt, 2003)

It is clearly beyond the scope and intent of the UAA and HP to conduct detailed geomorphic surveys and analysis of each site but instead use what historic information is readily available to discern the relative significance of land use, climate, and natural cycles as they relate to channel incision. As most evidence in the southwest indicates that arroyo incision occurred prior to 1975 there is no evidence to indicate that the observed high banks and headcuts have altered the existing uses (those that have occurred since 1975) of Gachupin Canyon. If evidence can be found that support that channel incision is directly related to some identified source or that channel conditions have changed since 1975 then these factors could be considered in the determination of the hydrologic status of the site and the attainable uses for that site.

Comments 5.

A) Cover Sheets

None of the cover sheets are signed and dated. Amigos Bravos felt very strongly during the hydrology protocol development that these documents needed to be signed to encourage the highest level of integrity and honesty when filling out the forms. There is a signature

requirement included in the cover sheet but none of the 18 forms included in the Draft UAA are signed.

NMED Response:

As NMED is seeking public comment on these documents they are not yet final and NMED may modify the cover sheets based on additional information provided by the public. As such we feel it is appropriate to sign the cover sheet after Public Comment but before the UAA is sent to EPA for technical approval.

B) Attainable Uses

As outlined in a 2006 EPA Memorandum “UAAs are meant to assess what is attainable, is it not simply about documenting the current water quality conditions and use.” Therefore it is essential, as part of the UAA process to do a thorough analysis of what could be attainable in the water body(ies) in the future. This would involve examining the potential impact on the waterbody(ies) if land use practices were to change. For example would stream flow, aquatic habitat, or recreational opportunities be restored if impacts from land uses practices such as grazing, roads, or motorized recreation on or near stream banks were mitigated or stopped? This is an essential component of a Use Attainability Analysis that is not included in the Draft UAA.

NMED Response:

NMED understands that the UAA should consider not only current but also existing and attainable uses. This comment was previously addressed in detail in the Response to Comments on the January 2011 Draft Update of New Mexico’s Water Quality Management Plan and Continuing Planning Process prepared by the NMED Surface Water Quality Bureau April 2011. See this response in Appendix B for full discussion.

References

New Mexico Environmental Department, Statewide Water Quality Management Plan and Continuing Planning Process. December 2011.

<ftp://ftp.nmenv.state.nm.us/www/swqb/WQMP-CPP/WQMP-CPP-December2011.pdf>

Hydrology Protocol for the Determination of Uses Supported By Ephemeral, Intermittent, and Perennial Waters. New Mexico Surface Water Quality Bureau. May 2011.

<ftp://ftp.nmenv.state.nm.us/www/swqb/MAS/Hydrology/HydrologyProtocolAPPROVED05-2011.pdf>

The Arroyo Problem in the Southwestern United State, United State Geological Survey (USGS), Vogt, 2003.

<http://geochange.er.usgs.gov/sw/impacts/geology/arroyos/>

High Plains Regional Climate Center, Standardized Precipitation Index (SPI) Website

(www.hprcc.unl.edu/maps/current/index.php?action=update_daterange&daterange=12m)

Appendix A

Public Comments

From: Henslee, Gale W [mailto:Gale.Henslee@XCELENERGY.COM]
Sent: Monday, August 27, 2012 1:53 PM
To: Kougioulis, Jodey, NMENV
Cc: Metcalf, Dean R; White, Bill
Subject: Comment on Water Quality Standards for Specific Unclassified Non-Perennial Stream Segments in New Mexico

I am writing on behalf of Southwestern Public Service Company (NPDES permit NM0029131), to express support for the process and the proposed revision of the applicable water quality standards as proposed on July 27, 2012. Our facility in Eddy County, the Eddy County High Voltage Direct Current Intertie (HVDC) operates with a small discharge (approximately 2 gallons per minute, intermittently) to an unnamed, ephemeral drainage, and in fact discharges approximately one-half (0.5) mile from the nearest approach to the non-perennial (ephemeral) arroyo that was evaluated. The facility was permitted in the early 1980's and it is likely that no water from our discharges has ever reached the arroyo or made its way down the drainage to the Pecos River. However, it is assumed that if sufficient water was discharged, it would eventually make its way to the arroyo. The water discharged from the HVDC facility is and has been better in quality than the water in the Pecos River.

As a result of the application of the default standards for unclassified waters in New Mexico, (20.6.4.98 NMAC), we have had to maintain water quality in our discharge that meets the standards for wildlife habitat, primary contact, and marginal warmwater aquatic life, which are, in some cases better than the quality of drinking water standards. Consequently, we have spent a lot of time and money meeting standards that probably should have never been applied. We appreciate the effort put forth by the NMED and their subcontractor in documenting the site conditions, and support the conclusion that the standards of 20.6.4.97 NMAC are more reasonable in this case.

Sincerely,

Gale Henslee

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Principal Environmental Analyst



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VIA email to: jodey.kougioulis@state.nm.us

Dear Mr. Kougioulis,

Amigos Bravos submits the following comments on the draft *Use Attainability Analysis for Unclassified Non-Perennial Watercourses with NPDES Permitted Facilities* (Draft UAA). In 2011 Amigos Bravos submitted detailed comments on the draft Hydrology Protocol, which is the main tool utilized in the Draft UAA. Many of our concerns with the Draft UAA stem from these original concerns we had with the protocol itself. Our comments are detailed below.

1. Hydrological Status of a Stream is Different from 101 (a)(2) Use Determination.

A major flaw with the Hydrology Protocol (HP) and associated expedited UAA process is that it confuses determination of the hydrological status of a stream (perennial, intermittent or ephemeral) with 101(a)(2) uses. This confusion is demonstrated in the language of the HP itself. For example, the first sentence in the summary of the HP (page 3) states, "The Hydrology Protocol provides a methodology for distinguishing among ephemeral, intermittent and perennial streams and rivers in New Mexico". However, the first line of the second paragraph of the Summary (page 3) states, "The Hydrology Protocol was specifically developed to generate documentation of the uses supported by the hydrology of a given stream or river." While the HP does a fair job with directing the gathering of data to help determine whether a stream is ephemeral, intermittent or perennial, the HP makes broad determinations about 101(a)(2) uses and even whether these uses can be supported, without any data. The HP does not direct gathering data that would allow determinations regarding 101(a)(2) uses. For example, the only way you can determine if the stream supports amphibian reproduction is to do appropriate surveys during the monsoon season. Amigos Bravos stands firmly in the conviction that the HP, as written, outlines a process for determining only the physical characteristics of a stream, not to determine whether the stream can or does attain existing uses. While it may be useful as one piece of information in a UAA, the HP cannot possibly reach a rational or logical conclusion about 101(a)(2) uses. This is played out in the Draft UAA. While there was a detailed examination of the hydrology of the streams in question (though we do have some concerns with this process as well), examining uses of the streams was not conducted in any sort of detail. In fact, the field sheet that was filled out does not even have a place to document the absence or presence of all 101(a)(2) uses. It is not until the Cover Sheet Use Attainability Analysis For an Ephemeral Stream

document (Cover Sheet) is filled out (presumably in the office since it is electronically filled out) is there even a mention of observed uses. This presents a problem since we do not know if the person who is filling out the Cover Sheet is the same person who filled out the field sheets, or if that person was even in the field. Since the field sheet does not have any way to document whether 101(a)(2) uses were observed, how do we know the Cover Sheet is presenting an accurate picture of existing 101(a)(2) uses? This again is a flaw with conflating determining the hydrology of the stream with determining existing 101(a)(2) uses.

2. The Draft UAA Does Not Adequately Identify Existing Uses

The intention of both the national Clean Water Act and the NM Water Quality Act is to protect water quality for all existing uses of a stream, regardless of the stream's hydrologic characteristics. The Draft UAA does not satisfy the rigors of a scientifically based Use Attainability Study (UAA) as required in Clean Water Act regulations at 40 CFR 131.10(g), (j) and (k), in EPA's Water Quality Standard Handbook at chapter 2.9, and EPA's 1983 Technical Support Manual: Water body Surveys and Assessments for Conducting Use Attainability Analyses (EPA Number: 440486037). As outlined in all three of these references, a use cannot be removed if it is an existing use. An existing use is defined as "those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards" 40 CFR 131.3(e). This does not mean that the use has to be occurring in the present moment. Neither the HP nor the associated Expedited UAA Cover Sheet provides adequate analysis of existing uses, and therefore the Draft UAA is sorely lacking the appropriate information to make a use determination. To determine existing uses (which, as outlined above, contrary to the common definition of "existing", means any use that has existed, or the water quality was good enough for it to exist, in the stream since 1975) would involve speaking to local landowners and local, state, or federal land management representatives about historical (1975-Present) conditions of the stream. Land use practices (both current and historic) should be documented and their impact on the conditions of the stream should be examined. In addition, historic flow data could be collected if available, or the water body in question could be examined for signs that uses, that while they may not currently be occurring, occurred since 1975. By only examining the current conditions in the 18 streams the Draft UAA cannot make a determination whether the 101(a)(2) uses are existing uses. Determining existing 101(a)(2) uses or if these uses could be supported is not a trivial matter. Some of the data/information needed in a UAA to be able to make a determination about currently supported or potentially supported 101(a)(2) uses includes answering the following questions:

- Are there any sections of the stream with surface flows (especially during the monsoon, season) for long enough to support aquatic life?
- Are there any tinajas present in the stream?
- Are there any springs or seeps in/along the stream? If so, proper biological surveys need to be conducted.
- Are there any areas where water ponds (including stock ponds/dirt tanks) long enough to support aquatic life, including amphibian reproduction, peaclams, etc. (especially during monsoon season)? Note that peaclams are shellfish that are adapted to periods of desiccation if they can reach moist soil.
- What is the upstream and downstream connectivity? Are there perennial or intermittent waters upstream (ephemeral streams can act as travel ways for organisms,

including amphibians, during flow events)? What is the downstream connection? Can fish move into the stream during flows (ephemeral streams are used by some fish during high water flows)?

- Does the stream connect to a playa? Intermittent and ephemeral playas are some of the most biologically productive in the State because of blooms of large brachiopods (shellfish), which support thousands of shorebirds and waterfowl. Reducing water quality in an ephemeral stream that feeds a playa may destroy the productivity of the playa.
- If there are areas of ponded water (above), there need to be proper surveys to determine if any 101(a)(2) uses are currently supported, including amphibian reproduction. These surveys will need to be conducted at the appropriate time of year, generally the monsoon season. Note that many ephemeral drainages contain stock ponds/dirt tanks, which support amphibian reproduction, including state and federal endangered species.
- Have local residents and others with potential knowledge been surveyed to determine historic biological uses or recreational uses? Do people drink from this stream or use the water for domestic purposes? Do livestock use the stream?
- If there are no current 101(a)(2) uses supported, data will need to be gathered to determine if the stream can support any of these uses.

Based on the Draft UAA you cannot state conclusively that fish do not and cannot use the 13 streams in question. The Draft UAA only confirms that fish and macroinvertebrates were not present at the specific survey locations at the time of surveys, which was during the dry time of year. The downstream connection has not been examined; appropriate sections of the streams have not been sampled during high water; and water quality/chemistry data have not been collected. In addition proper surveys have not been conducted during proper conditions (i.e., wet season & flowing) and you cannot state conclusively that recreation is not and cannot be supported by these streams. Residents and others with personal and/or long term knowledge of the streams have not been interviewed to determine if the streams are used or have been used in the past for recreational and aquatic life uses.

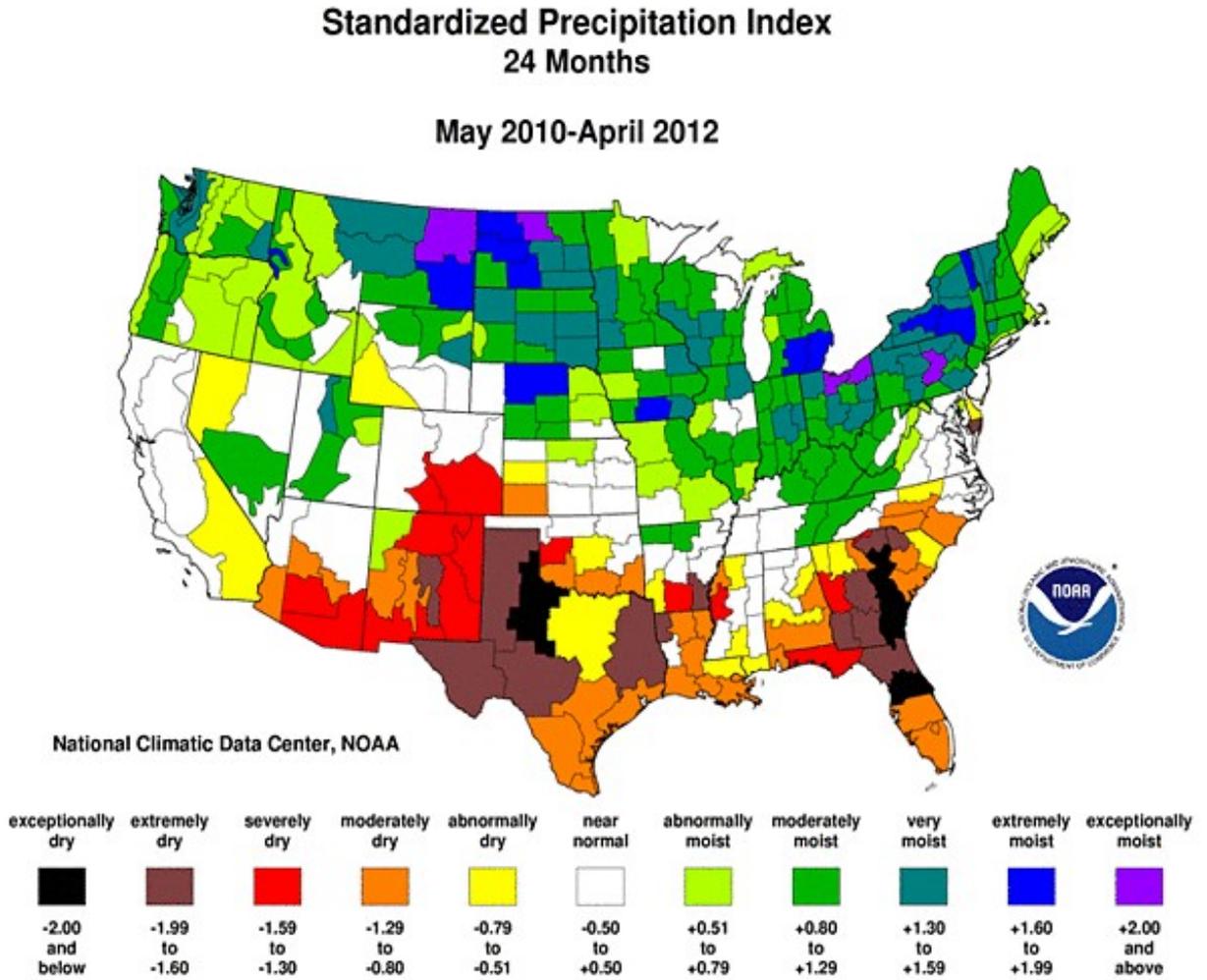
3. Unable to Verify Drought Index Determination

The drought index for the one site (3 streams) that Amigos Bravos did some follow up research - the Ancho Mine sites in North Central New Mexico – appeared to be incorrect. While we were not able to access the stand alone 12-month SPI value for April 2010-May 2011, we were able to access on the NOAA site the 24- month SPI value for April 2010 – May 2012 and the 12-month SPI value for May 2011 – April 2012. Since the field work for the Ancho Mine sites in the Draft UAA was done in June of 2011 we are assuming that the 12-month SPI value from April 2010 – May 2011 was used. While as outlined above, we were not able to locate this value on the NOAA website we did get the 24 month value which included this time period as well as the data for the other 12 months in that time period. The charts from the NOAA website are included below in Figures 1 and 2.

Figure 1 shows that the 24-month SPI for the Ancho Mine site is -1.59 to -1.30 (red color) and the most recent 12-month SPI from April 2011-May 2012 (the second half of the 24 month period) is -1.29 to -0.80 (orange color). The SPI value that is reported in the field sheet for

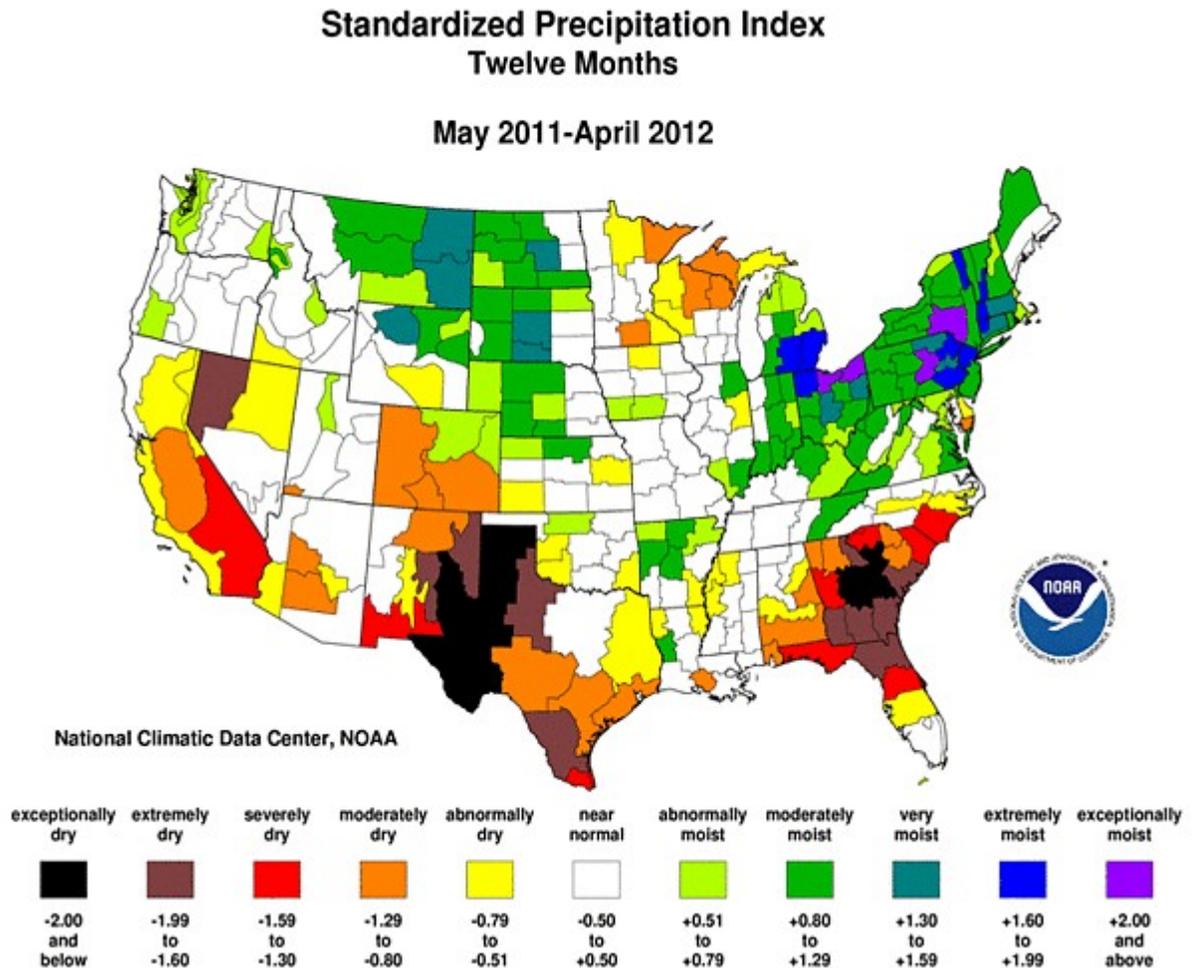
presumably the first half of this 24-month period (though the specific dates are not included in the Draft UAA or associated field sheets) is -1.29 to -0.80 (orange color). This does not make sense in light of the red findings for 24-month period. If the most recent 12 months are orange and the 24 month period is red, then the first 12 month period must have been at least red, making the value above the 1.5 cutoff identified on page 6 of the Hydrology Protocol.

FIGURE 1



(from http://www.ncdc.noaa.gov/img/climate/research/2012/apr/spi24_201204_pg.gif)

FIGURE 2



(from: http://www.ncdc.noaa.gov/img/climate/research/2012/apr/spi12_201204_pg.gif)

These charts seem to indicate that the SPI, according to the Hydrology Protocol, showed that at least the Ancho Mine streams were in drought condition, suggesting that the application of the hydrology protocol during this time perhaps did not capture the true site conditions.

4. Gachupin Canyon Site Visit Indicated Wetter Conditions Than Reported in the Draft UAA

Amigos Bravos visited the Gachupin Canyon site with Rich Powell (NMED) and Cameron Twing (Trihydro) on August 21, 2012. We drove along the entire stretch of Gachupin that was assessed in the Draft UAA. Amigos Bravos implemented the hydrology protocol at both of the 2 survey sites that were visited by NMED and their consultants when conducting the

surveys that went into the Draft UAA. At the first site Amigos Bravos had a score of 2, which was the same as the score in the Draft UAA. According to the Hydrology Protocol this should stop further examination. Amigos Bravos has serious concerns about this “auto stop” part of the protocol. Other factors, besides the 6 that were examined in this first section of the protocol, such as good sinuosity and presence of wetland plants were noted, but because of the auto stop component of the protocol they were not assessed or given weight in the determination. The fieldwork that was conducted in this Draft UAA utilized only this first section (6 factors) of the hydrology protocol at all sites. Four of these six factors are completely dependent on the presence of water at the time of the survey. As noted early in these comments, these surveys were conducted in late June, during a typically very dry time of the year. In addition, the 24-month SPI included above indicates that the area was in a drought. The presence of water in the dry time of year and during a drought is certainly not a given in an intermittent stream in New Mexico. For that matter, even perennial water bodies in New Mexico have been known to run dry under these conditions! The lower site on Gachupin Canyon scored a 4 in Amigos Bravos application of the first section of the hydrology protocol (NMED scores was a 2). Both the “Differences in Vegetation” and the “Absence of Rooted Upland Plants in Streambed” were noted with a score of 2 to make a total of 4 for the reach. The pictures included below as Photos 1-3 depict how we came up with this score. In photos 1-2 you can see a shot of the upper portion of this lower segment that clearly shows differences in vegetation along the riparian corridor.

PICTURE 1



PICTURE 2



In picture 3 you can clearly see the lack of rooted upland plants present within the streambed/thalweg.

PICTURE 3



A score of 4 indicates that further evaluation is needed.

While Amigos Bravos only had the time and resources to investigate one of the 18 watercourses included in the Draft UAA. While many of the others appear to be very ephemeral in nature from the photos included in the Draft UAA, we found that photos, unless comprehensive photos are taken of the entire segment, can be misleading. The photos of Gachupin Canyon presented in the Draft UAA presented a different hydrologic condition than those that Amigos Bravos took at the very same site. I think that this perhaps underscores the need for those who are conducting the hydrology protocol to walk the entire length of the assessed segment. This was a requirement that Amigos Bravos suggested in our comments on the hydrology protocol but it was not incorporated into the final protocol. To determine a 3 mile stretch by doing a survey at two locations without walking the length of the stretch to determine whether there are changes in the channel, the absence or presence of springs, or standing pools of water is not presenting a full and accurate picture of the water body.

Our field visit also showed signs of grazing (see picture 4). In some sections there was quite a bit of manure either from buffalo or cows. Grazing was not mentioned in the Draft UAA as a hydrologic/other modification that was present at this site.

PICTURE 4



In addition there is a high prevalence of head cuts and eroded banks in this reach (see picture 2). This indicates that there has been some sort of hydrologic modification that has resulted in the channel incising and the water table dropping. The historic conditions of this stream could very well have been drastically different and much wetter before the down cutting of the channel and the draining of the wet meadows/surrounding wetlands. This impact could be from the historic ranching practices on the property, from mining practices, from associated roads with both of these land uses, from grazing, and from a change in climate. The question, in terms of CWA applicability, is whether these changes occurred before or after 1975 and if

they occurred afterwards, were there existing 101(a)(2) use in the water body since 1975. To answer these questions further (and different) study must be conducted. Again, this goes back to the difference in documenting current hydrologic conditions and existing uses (remember existing does NOT mean current). To determine existing uses surveys of old photos, contacting past and present landowners to inquire about past conditions and looking at the site through the lens of what was once present, not only whether or not there is water in the channel during the one day that the survey is conducted.

5. Other Comments on Draft UAA

A) Cover Sheets

None of the cover sheets are signed and dated. Amigos Bravos felt very strongly during the hydrology protocol development that these documents needed to be signed to encourage the highest level of integrity and honesty when filling out the forms. There is a signature requirement included in the cover sheet but none of the 18 forms included in the Draft UAA are signed.

B) Attainable Uses

As outlined in a 2006 EPA Memorandum “UAAs are meant to assess what is attainable, is it not simply about documenting the current water quality conditions and use.” Therefore it is essential, as part of the UAA process to do a thorough analysis of what could be attainable in the water body(ies) in the future. This would involve examining the potential impact on the waterbody(ies) if land use practices were to change. For example would stream flow, aquatic habitat, or recreational opportunities be restored if impacts from land uses practices such as grazing, roads, or motorized recreation on or near stream banks were mitigated or stopped? This is an essential component of a Use Attainability Analysis that is not included in the Draft UAA.

Thank you for the opportunity to provide comments on the Draft UAA. If you have any questions about our comments please do hesitate to contact me at rconn@amigosbravos.org or at 575-758-3874. In addition, I would like to acknowledge and thank the Department and Rich Powell and Sarah Holcomb in particular for accommodating, on very short notice, our request to do a site visit. We very much appreciate the Department taking the time to facilitate communication with the landowner and for taking a day to join us on a site visit.

Sincerely,

Rachel Conn
Projects Director
Amigos Bravos

Appendix B

Response to Amigos Bravos Comment IIIA on the January 2011 Draft Update of New Mexico's Water Quality Management Plan and Continuing Planning Process

Prepared by the NMED Surface Water Quality Bureau

April 2011

Amigos Bravos General Comments III.A:

As an overarching concern, Amigos Bravos asserts that neither the Hydrology Protocol nor the expedited UAA process for ephemeral streams provides adequate data about existing and attainable Clean Water Act Section 101(a)(2) uses. The protocol confuses hydrology with determination of uses. Substantial additional information, including detailed surveys of the entire stream during wet periods and interviews with landowners and land management agencies, would be required in order to determine what aquatic life, wildlife and recreation the stream does or could support. The comments stress that existing uses cannot be removed and that attainable, not just current, uses must be investigated.

SWQB Response:

In response to Amigos Bravos' concern that the protocol is intended to identify not only hydrology but the aquatic life and recreation uses supported by the hydrology, SWQB has changed the name of the document to: *Hydrology Protocol for the Determination of Uses Supported by Ephemeral, Intermittent, and Perennial Waters*.

The level of detail described by Amigos Bravos is unnecessary to reach a reasonable conclusion about the uses that can be supported by a stream. The *Hydrology Protocol* already has two levels of detail built in. If the conclusion from the Level 1 evaluation does not arrive at a clear determination of the hydrology and type of uses supported, then the investigator must complete a Level 2 evaluation. In addition, while the *Hydrology Protocol* does not require that the entire stream be surveyed, it does require consideration of appropriate types of information to select representative evaluation sites and to document the homogeneity of the reach (see revised discussion in the Level 1 Office Procedures and the Reach Evaluation section of the expedited UAA cover sheet). SWQB believes that requiring the type of detailed survey suggested would create an unreasonable burden of proof for many UAAs and render the expedited process meaningless.

Amigos Bravos' concern that the *Hydrology Protocol* would not identify Section 101(a)(2) uses is misplaced. The examples of aquatic life that Amigos Bravos is concerned about -- amphibians, peaclams, aquatic snails, and fish that may use the stream during high flows -- all fall within the definition of the "limited aquatic life" use that will apply to any stream approved under the expedited UAA process. The definition in the water quality standards is as follows (20.6.4.7 NMAC):

"Limited aquatic life" as a designated use, means the surface water is capable of supporting only a limited community of aquatic life. This subcategory includes surface

waters that support aquatic species selectively adapted to take advantage of naturally occurring rapid environmental changes, ephemeral or intermittent water, high turbidity, fluctuating temperature, low dissolved oxygen content or unique chemical characteristics.

Because protection will be provided for this designated use, it is not necessary in the UAA to collect specific information confirming that it exists.

Amigos Bravos' underlying argument seems to be that this type of aquatic life use *should* be considered a Section 101(a)(2) use. SWQB does not disagree. However, after the 2005 triennial review, EPA informed New Mexico that the limited aquatic life use does not meet the 101(a)(2) goals, and that UAAs would be required to assign it to a stream. That is the fundamental reason for SWQB's proposal of an expedited UAA process and development of the *Hydrology Protocol*. Amigos Bravos also may believe that the water quality criteria associated with the limited aquatic life use are not sufficiently protective. The Commission considered that question when it created the designated use, and affirmed the appropriateness of the criteria during the last triennial review. This process to consider the draft WQMP/CPP is not the appropriate forum for Amigos Bravos to contest the WQCC's decisions in prior triennial reviews or object to provisions in the water quality standards.

A similar response applies to recreation. The secondary contact use will apply to any stream approved through the expedited UAA process. The definition of secondary contact in the water quality standards is as follows (20.6.4.7 NMAC):

“Secondary contact” means any recreational or other water use in which human contact with the water may occur and in which the probability of ingesting appreciable quantities of water is minimal, such as fishing, wading, commercial and recreational boating and any limited seasonal contact.

The type of recreation that could occur along or in an ephemeral stream falls within this definition. An ephemeral stream, which by definition “contains water briefly only in direct response to precipitation”, does not provide opportunity for the “prolonged and intimate human contact with the water” that characterizes the primary contact use (20.6.4.7 NMAC). The duration of flow is too short, and water levels are either too low for prolonged immersion or too hazardous during high flows. By confirming that the natural condition of a stream is ephemeral, the data requirements of the hydrology protocol are adequate to demonstrate that primary contact is not an attainable use.

Amigos Bravos is correct that a UAA should consider not only current but also existing and attainable uses. SWQB has revised the discussion in Section II.C of the WQMP/CPP to emphasize that existing uses may not be removed – see SWQB’s response to Amigos Bravos Comment II.C – part 2. With respect to attainable uses, SWQB has supplemented the discussion in Section II.C under “Technical Support for Use Attainability Analysis” as follows:

... ~~these~~ This factors [40 CFR 131.10(g)(2)] refers to a natural condition, so it is important that the UAA discuss whether the current hydrology and associated aquatic life and/or recreation uses identified by the results of the Hydrology Protocol represent the

naturally attainable uses...

Factor (2) also refers to the possibility of effluent discharges. If a new point source discharge is planned, then the UAA should assess the attainable uses given that additional flow.

SWQB has also added elements to the guidance regarding the expedited UAA process in Section II.C:

... the UAA must show that the current uses identified by the results of the Hydrology Protocol also represent the naturally attainable uses Circumstances that might affect that conclusion should be identified and discussed. Examples include drought conditions, and human alterations such as dams, ~~or~~ diversions, or land use practices. ~~or a~~ planned discharge that would increase streamflow could also potentially change the attainable uses. The Expedited UAA Cover Sheet ... calls attention to these considerations and ~~provided in the Hydrology Protocol~~ should be used for the expedited UAA process, ~~and~~ ~~a~~ Additional explanation should be attached if needed.

Finally, SWQB has made several corresponding changes to the Expedited UAA cover sheet regarding existing and attainable uses.