Exhibit 31

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 131

[EPA–HQ–OW–2010–0606; FRL–9921–21–OW]

RIN 2040–AF16

Water Quality Standards Regulatory Revisions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: EPA updates the federal water quality standards (WQS) regulation to provide a better-defined pathway for states and authorized tribes to improve water quality and protect high quality waters. The WQS regulation establishes a strong foundation for water quality management programs, including water quality assessments, impaired waters lists, and total maximum daily loads, as well as water quality-based effluent limits in National Pollutant Discharge Elimination System (NPDES) discharge permits. In this rule, EPA is revising six program areas to improve the WQS regulation's effectiveness, increase transparency, and enhance opportunities for meaningful public engagement at the state, tribal and local levels. Specifically, in this rule EPA: Clarifies what constitutes an Administrator's determination that new or revised WQS are necessary; refines how states and authorized tribes assign and revise designated uses for individual water bodies; revises the triennial review requirements to clarify the role of new or updated Clean Water Act (CWA) section 304(a) criteria recommendations in the development of WQS by states and authorized tribes, and applicable WQS that must be reviewed triennially; establishes stronger antidegradation requirements to enhance protection of high quality waters and promotes public transparency; adds new regulatory provisions to promote the appropriate use of WQS variances; and clarifies that a state or authorized tribe must adopt, and EPA must approve, a permit compliance schedule authorizing provision prior to authorizing the use of schedules of compliance for water quality-based effluent limits (WQBELs) in NPDES permits. In total, these revisions to the WQS regulation enable states and authorized tribes to more effectively address complex water quality challenges, protect existing water quality, and facilitate environmental improvements. The final rule also leads to better understanding and proper use of available CWA tools by promoting transparent and engaged public participation. This action finalizes the WQS regulation revisions initially proposed by EPA on September 4, 2013.

DATES: This final rule is effective on October 20, 2015.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA–HQ–OW–2010–0606. All documents in the docket are listed on the *http://www.regulations.gov* Web site. Although listed in the index, some information is not publicly available, *e.g.,* confidential business information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *http://www.regulations.gov* or in hard copy at the Office of Water Docket Center, EPA/DC, William Jefferson Clinton West Building, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20004. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the Office of Water Docket Center is (202) 566–2426. To view docket materials, call ahead to schedule an appointment. Every user is entitled to copy 266 pages per day before incurring a charge. The Docket Center may charge $0.15 for each page over the 266-page limit, plus an administrative fee of $25.00.

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SUPPLEMENTARY INFORMATION: The supplementary information section is organized as follows:

Table of Contents

I. General Information

A. Does this action apply to me?

The entities potentially affected by this rule are shown in the table below.

Category	Examples of potentially affected entities
States and Tribes.	States and authorized tribes responsible for administering or overseeing water quality programs.[1]
Industry	Industries discharging pollutants to waters of the United States.
Municipalities.	Publicly owned treatment works or other facilities discharging pollutants to waters of the United States.

This table is not exhaustive, but rather it provides a guide for entities that may be directly or indirectly affected by this action. Citizens concerned with water quality and other types of entities may also be interested in this rulemaking, although they might not be directly impacted. If you have questions

[1] Hereafter referred to as ''states and authorized tribes.'' ''State'' in the CWA and this document refers to a state, the District of Columbia, the Commonwealth of Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands. ''Authorized tribes'' refers to those federally recognized Indian tribes with authority to administer a CWA WQS program.

regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

B. What is the statutory and regulatory history of the federal WQS regulation?

The Clean Water Act (CWA or the Act)—initially enacted as the Federal Water Pollution Control Act Amendments of 1972 (Pub. L. 92–500) and subsequent amendments—determined the basic structure in place today for regulating pollutant discharges into waters of the United States. The objective of the CWA is ''to restore and maintain the chemical, physical, and biological integrity of the Nation's waters,'' and to achieve ''wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water'' (CWA sections 101(a) and 101(a)(2)).

The CWA establishes the basis for the water quality standards (WQS or standards) regulation and program. CWA section 303 addresses the development of state and authorized tribal WQS that serve the CWA objective for waters of the United States. The core components of WQS are designated uses, water quality criteria that support the uses, and antidegradation requirements. Designated uses establish the environmental objectives for a water body and water quality criteria [2] define the minimum conditions necessary to achieve those environmental objectives. The antidegradation requirements provide a framework for maintaining and protecting water quality that has already been achieved.

CWA section 301 establishes pollutant discharge restrictions for point sources. Specifically, it provides that ''the discharge of any pollutant by any person shall be unlawful'' except in compliance with the terms of the Act, including industrial and municipal effluent limitations specified under CWA sections 301 and 304 and ''any more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedule of compliance, established pursuant to any [s]tate law or regulations.''

The CWA gives states and authorized tribes discretion on how to control pollution from nonpoint sources. Although the CWA includes specific requirements for the control of pollution from certain discharges, state and authorized tribal WQS established pursuant to CWA section 303 apply to the water bodies themselves, regardless of the source(s) of pollution/pollutants. Thus, the WQS express the desired condition and level of protection for a water body, regardless of whether a state or authorized tribe chooses to place controls on nonpoint source activities, in addition to point source activities required to obtain permits under the CWA. Section 303(c) of the Act also requires that states and authorized tribes hold a public hearing to review their standards at least once every three years (*i.e.,* triennial review), and that EPA review and approve or disapprove any new or revised state and authorized tribal standards. Furthermore, if EPA disapproves a state's or authorized tribe's WQS under CWA sections 303(c)(3) and 303(c)(4)(A), or if the Administrator makes a determination under CWA section 303(c)(4)(B) that a new or revised WQS is necessary, EPA must propose and promulgate federal standards for a state or authorized tribe, unless the state or authorized tribe develops and EPA approves its own WQS first.

EPA established the core of the WQS regulation in a final rule issued in 1983. That rule strengthened provisions that had been in place since 1977 and codified them as 40 CFR part 131.[3] In support of the 1983 regulation, EPA issued a number of guidance documents, such as the *Water Quality Standards Handbook* (WQS Handbook),[4] that provide guidance on the interpretation and implementation of the WQS regulation and on scientific and technical analyses that are used in making decisions that would impact WQS. EPA also developed the *Technical Support Document for Water Quality-Based Toxics Control* [5] that provides additional guidance for implementing state and authorized tribal WQS.

EPA modified the 40 CFR part 131 regulation twice since 1983. First, in 1991 pursuant to section 518 of the Act, EPA added §§ 131.7 and 131.8 which extended to Indian tribes the opportunity to administer the WQS program and outlined dispute resolution mechanisms.[6] Second, in 2000, EPA finalized § 131.21(c)–(f), commonly known as the ''Alaska Rule,'' which specifies that new and revised standards adopted by states and authorized tribes and submitted to EPA after May 30, 2000, become applicable standards for CWA purposes only when approved by EPA.[7]

In 1998, EPA issued an Advance Notice of Proposed Rulemaking (ANPRM) to discuss and invite comment on over 130 aspects of the federal WQS regulation and program, with the goal of identifying specific changes that might strengthen water quality protection and restoration, facilitate watershed management initiatives, and incorporate evolving water quality criteria and assessment science into state and authorized tribal WQS programs.[8] Although EPA chose not to move forward with a rulemaking after the ANPRM, EPA identified a number of high priority issue areas for which the Agency developed guidance, provided technical assistance, and continued further discussion and dialogue to ensure more effective program implementation. This action is part of EPA's ongoing effort to clarify and strengthen the WQS program.

C. What environmental issues do the final changes to the federal WQS regulation address?

Since EPA first established the WQS regulation in 1983, the regulation has acted as a powerful force to prevent pollution and improve water quality by providing a foundation for a broad range of water quality management programs. Since 1983, however, diverse and complex challenges have arisen, including new types of contaminants, pollution stemming from multiple sources, extreme weather events, hydrologic alteration, and climate change-related impacts. These challenges necessitate a more effective, flexible and practicable approach for the implementation of WQS and protecting water quality. Additionally, extensive experience with WQS implementation by states, authorized tribes, and EPA revealed a need to update the regulation to help meet these challenges.

This rulemaking revises the requirements in six program areas: (1) Administrator's determination that new or revised WQS are necessary, (2) designated uses, (3) triennial reviews, (4) antidegradation, (5) WQS variances, and (6) permit compliance schedule authorizing provisions.

The provisions related to designated uses help states and authorized tribes restore and maintain resilient and

[2] Under CWA section 304(a), EPA publishes recommended water quality criteria guidance that consists of scientific information regarding concentrations of specific chemicals or levels of parameters in water that protect aquatic life and human health. CWA section 303(c) refers to state and authorized tribal water quality criteria that are subject to EPA review and approval or disapproval.

[3] 54 FR 51400 (November 8, 1983).

[4] First edition, December 1983; second edition, EPA 823–B–94–005a, August 1994.

[5] First edition, EPA 440/4–85–032, September 1985; revised edition, EPA 505/2–90–001, March 1991.

[6] 56 FR 64893 (December 12, 1991).

[7] 65 FR 24641 (April 27, 2000).

[8] 63 FR 36742 (July 7, 1998).

robust ecosystems by requiring that states and authorized tribes evaluate and adopt the highest attainable use when changing designated uses. The rule provides clearer expectations for when an analysis of attainability of designated uses is or is not required. Such clarity allows for better and more transparent communication among EPA, states, authorized tribes, stakeholders and the public about the designated use revision process, and the appropriate level of protection necessary to meet the purposes of the CWA.

This rule ensures better protection and maintenance of high quality waters that have better water quality than minimally necessary to support propagation of fish, shellfish, and wildlife, and recreation in and on the water. Through protection of habitat, water quality, and aquatic community structure, high quality waters are better able to resist stressors, such as atmospherically deposited pollutants, emerging contaminants, severe weather events, altered hydrology, or other effects resulting from climate change. This rule strengthens the evaluation used to identify and manage high quality waters and increases the opportunities for the public and stakeholders to be involved in the decision-making process. Specifically, there must be a transparent, public, robust evaluation before any decision is made to allow lowering of high quality water. Thus, this rule will lead to better protection of high quality waters.

The rule addresses WQS variances and permit compliance schedules, which are two CWA tools which can be used where WQS are not being attained. The provisions related to WQS variances allow states and authorized tribes to address water quality challenges in a transparent and predictable way. The rule also includes provisions for authorizing the use of permit compliance schedules to ensure that a state or authorized tribal decision to allow permit compliance schedules includes public engagement and transparency. These two tools help states and authorized tribes focus on making incremental progress in improving water quality, rather than pursuing a downgrade of the underlying water quality goals through a designated use change, when the current designated use is difficult to attain.

Lastly, the Administrator's determination and triennial review provisions in this rule promote public transparency and allow for effective communication among EPA, states, authorized tribes, and stakeholders to ensure WQS continue to be consistent with the CWA and EPA's implementing regulation. Meaningful and transparent involvement of the public is an important component of triennial review when making decisions about whether and when criteria will be adopted or revised to protect designated uses. The rule provides more clearly defined and transparent requirements, so that states and authorized tribes consider the latest science as reflected in the CWA section 304(a) criteria recommendations, and the public understands the decisions made.

D. How was this final rule developed?

In developing this rule, EPA considered the public comments and feedback received from stakeholders. EPA provided a 120-day public comment period after the proposed rule was published in the **Federal Register** on September 4, 2013.[9] In addition, EPA held two public webinars, a public meeting, and a tribal consultation to discuss the contents of the proposed rule and answer clarifying questions in order to allow the public to submit well-informed comments.

Over 150 organizations and individuals submitted comments on a range of issues. EPA also received 2,500 letters from individuals associated with mass letter writing campaigns. Some comments addressed issues beyond the scope of the proposed rulemaking. EPA did not expand the scope of the rulemaking or make regulatory changes to address the substance of these comments. In each section of this preamble, EPA discusses certain public comments so that the public is fully aware of its position. For a full response to these and all other comments, see EPA's Response to Comments document in the official public docket.

In addition, EPA met with all stakeholders who requested time to discuss the contents of the proposed rule. Such discussions occurred with members of state and tribal organizations and the environmental community. Records of each meeting are included in the official public docket.

E. When does this action take effect?

This regulation is effective October 20, 2015. For judicial review purposes, this rule is promulgated as of 1 p.m. EST (Eastern Standard Time) on the effective date, which will be 60 days after the date of publication of the rule in the **Federal Register**.

States and authorized tribes are subject to the requirements of this final rule on the effective date of the rule. EPA's expectation is that, where a new or revised requirement necessitates a change to state or authorized tribal WQS, such revisions will occur within the next triennial review that the state or authorized tribe initiates after publication of the rule.

As a general matter, when EPA reviews new or revised state or authorized tribal WQS it reviews the provisions to determine whether they are consistent with the CWA and regulation applicable at the time of EPA's review. However, for a short period of transition, EPA will review the provisions and approve or disapprove based on whether they are consistent with the CWA and the relevant part 131 regulation that is in effect prior to the final rule's effective date if (1) they were submitted before the effective date of this final rule or (2) if a state or authorized tribe has held its public hearing(s) and the public comment period has closed before the effective date of this rule and the state or authorized tribe has submitted the new or revised WQS within nine months of the effective date of this final rule. This approach is reasonable for the transition period because EPA recognizes that states and authorized tribes may have invested a significant amount of resources drafting new or revised WQS for the public to comment on without the benefit of knowing EPA's final rule requirements and the state or authorized tribe may not have had sufficient notice to alter the WQS prior to submission to EPA. It would be inefficient and unfair for the state or authorized tribe to have to re-propose and re-start the rulemaking process when it can address the issue in the next triennial review consistent with the final rule. In addition, changing the applicable federal standards that will be basis of EPA's review after the public has put in the effort to provide constructive comments to the state or authorized tribe would be inefficient and could render the comments obsolete. Nine months is a reasonable timeframe to accommodate states and authorized tribes that have legislative processes such that new or revised WQS cannot be submitted to EPA until the legislature has passed the regulation at its soonest legislative session after close of the public comment period. Except for the circumstances outlined in this paragraph regarding the transition period, EPA will work with states and authorized tribes to ensure that new or revised WQS meet the requirements of the final rule.

In the event that a court sets aside any portion of this rule, EPA intends for the remainder of the rule to remain in effect.

[9] See Water Quality Standards Regulatory Clarifications, 78 FR 54517 (September 4, 2013).

II. Rule Revisions Addressed in This Rule

EPA provides a comparison document showing the revisions made by this final rule, and a second document showing the revisions made between the proposed and final rule. EPA has posted both documents at *http://water.epa.gov/lawsregs/lawsguidance/wqs_index.cfm*.

A. Administrator's Determinations That New or Revised WQS Are Necessary

What does this rule provide and why?

Open communication among states, tribes and EPA facilitates the sharing of information to ensure that WQS continue to adequately protect waters as new challenges arise. However, the public has occasionally mistaken such communication from EPA for a ''determination'' by the Administrator that new or revised WQS are necessary under CWA section 303(c)(4)(B) (hereafter referred to as ''Administrator's determination'').[10]

With the clarification provided by this rule, stakeholders and the public can readily distinguish Administrator's determinations from routine EPA communications on issues of concern and recommendations regarding the scope and content of state and authorized tribal WQS. This rule minimizes the potential for stakeholders to misunderstand EPA's intent with its communications and allows EPA to provide direct and transparent feedback. It will also preserve limited resources that would otherwise be spent resolving the confusion through litigation.

An Administrator's determination is a powerful tool, and this rule ensures that it continues to be used purposefully and thoughtfully. This rule contains two requirements related to an Administrator's determination at § 131.22(b). The first requirement provides that, in order for a document to constitute an Administrator's determination, it must be signed by the Administrator or duly authorized delegate. The second requirement is that such a determination must include a statement that the document is an Administrator's determination for purposes of section 303(c)(4)(B) of the Act. This requirement makes clear that this provision applies to Administrator's determinations made under CWA section 303(c)(4)(B) rather than determinations made under CWA section 303(c)(4)(A).

Section 303(c)(4) of the Act provides two different scenarios under which the Administrator has the authority to ''promptly prepare and publish proposed regulations setting forth a revised or new water quality standard for the navigable waters involved'' following some sort of determination. Section 303(c)(4)(A) of the Act gives EPA the authority to propose regulations where states or authorized tribes have submitted new or revised WQS that the Administrator ''determines'' are not consistent with the Act. In this instance, EPA disapproves new or revised WQS and specifies the changes necessary to meet CWA requirements. If a state or authorized tribe fails to adopt and submit the necessary revisions within 90 days after notification of the disapproval determination, EPA must promptly propose and promulgate federal WQS as specified in CWA section 303(c)(4)(A) and 40 CFR 131.22(a). This action does not address or affect this authority.

Absent state or authorized tribal adoption or submission of new or revised WQS, section 303(c)(4)(B) of the CWA gives EPA the authority to determine that new or revised WQS are necessary to meet the requirements of the Act. Once the Administrator makes such a determination, EPA must promptly propose regulations setting forth new or revised WQS for the waters of the United States involved, and must then promulgate such WQS, unless a state or authorized tribe adopts and EPA approves such WQS first.

Commenters expressed concern that the proposed rule was not clear with respect to which of these authorities was addressed in this rule. EPA's final rule makes clear that these requirements only refer to Administrator's determinations under CWA section 303(c)(4)(B).

Based on comments, EPA reviewed the use of the term ''states'' throughout the regulation and found that, in § 131.22(b), this term did not accurately describe the scope of waters for which the CWA provides authority to the EPA Administrator. Thus, consistent with CWA section 303(c)(4), this rule provides that the Administrator may propose and promulgate a regulation applicable to one or more ''navigable waters,'' as that term is defined in CWA section 502(7) after determining that new or revised WQS are necessary to meet the requirements of the CWA. Consistent with the statute's plain language, this authority applies to all navigable waters located in any state or in any area of Indian country.[11]

What did EPA consider?

EPA considered finalizing the revision to § 131.22(b) as proposed. However, EPA decided it was important to clarify that this provision only addresses Administrator's determinations made pursuant to section 303(c)(4)(B) of the Act, which was not clear given the comments received. EPA also considered foregoing revisions to § 131.22(b) altogether. However, this option would not meet EPA's policy objective, described previously, which many commenters supported.

What is EPA's position on certain public comments?

Some commenters requested that EPA clarify whether this revision will affect the petition process under section 553(e) of the Administrative Procedure Act (APA) (5 U.S.C. 553(e)). This action does not affect the public's ability to petition EPA to issue, amend, or repeal a rule. Nor does this action affect the Agency's obligations for responding to an APA petition or the ability of a petitioner to challenge the Agency for unreasonable delay in responding to a petition. In the event that the Administrator grants a petition for WQS rulemaking and makes an Administrator's determination that new or revised WQS are necessary, this provision does not affect the obligation the Agency has to promptly propose and promulgate federal WQS.

Some commenters requested that EPA clarify how the Administrator delegates authority. The laws, Executive Orders, and regulations that give EPA its authority typically, but not always, indicate that ''the Administrator'' shall or may exercise certain authorities. In order for other EPA management officials to act on behalf of the Administrator, the Administrator must delegate the authority granted by Congress or the Executive Branch. The Administrator may do so by regulation or through the Agency's delegation process by signing an official letter that is then maintained as a legal record of authority.

B. Designated Uses

What does this rule provide and why?

CWA section 303(c)(2)(A) requires that new or revised WQS shall consist

[10] A listing of Administrator's determinations that new or revised WQS are necessary to meet the requirements of the CWA pursuant to section 303(c)(4)(B) can be found at: *http://water.epa.gov/scitech/swguidance/standards/wqsregs.cfm#federal* under the heading ''Federal Clean Water Act Determinations that New or Revised Standards Are Necessary.'' EPA intends to post future Administrator's determinations pursuant to CWA section 303(c)(4)(B) to its Web site.

[11] Indian country is defined at 18 U.S.C. 1151. A prior example of federally promulgated WQS in Indian country can be found at 40 CFR 131.35, federally promulgated WQS for the Colville Confederated Tribes Indian Reservation (54 FR 28625, July 6, 1989).

of designated uses and water quality criteria based on such uses. It also requires that such WQS shall protect the public health or welfare, enhance the quality of the water, and serve the purposes of the Act. Section 101(a) of the CWA provides that the ultimate objective of the Act is to restore and to maintain the chemical, physical, and biological integrity of the Nation's waters. The national goal in CWA section 101(a)(2) is water quality that provides for the protection and propagation of fish, shellfish, and wildlife and for recreation in and on the water ''wherever attainable.'' EPA's WQS regulation at 40 CFR part 131, specifically §§ 131.10(j) and (k), interprets and implements these provisions through requirements that WQS protect the uses specified in CWA section 101(a)(2) unless states and authorized tribes show those uses are unattainable through a use attainability analysis (UAA) consistent with EPA's regulation, effectively creating a rebuttable presumption of attainability.[12] This underlying requirement remains unchanged by this rule. EPA discussed the 1983 requirements and the rebuttable presumption in the preamble to the proposed rule as background discussion of the existing regulatory requirements. The revisions to § 131.10 establish the additional requirement to adopt the highest attainable use (HAU) after demonstrating that CWA section 101(a)(2) uses are not attainable.

CWA section 303(c)(2)(A) also requires states and authorized tribes to establish WQS ''taking into consideration their use and value'' for a number of purposes, including those addressed in section 101(a)(2) of the Act. EPA's final 1983 regulation at § 131.10(a) implements this provision by requiring that the ''[s]tate must specify appropriate water uses to be achieved and protected'' and that the ''classification of the waters of the [s]tate must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation.''

The revisions to the designated use requirements improve the process by which states and authorized tribes designate and revise uses to better help restore and maintain resilient water quality and robust aquatic ecosystems. The revisions reduce potential confusion and conflicting interpretations of the regulatory requirements for establishing designated uses that can hinder environmental progress. Designated uses drive state and authorized tribal criteria development and water quality management decisions. Therefore, clear and accurate designated uses are essential in maintaining the actions necessary to restore and protect water quality and to meet the goals and objectives of the CWA.

The CWA distinguishes between two broad categories of uses: uses specified in section 101(a)(2) of the Act and uses specified in section 303(c)(2) of the Act. For the purposes of this final rule, the phrase ''uses specified in section 101(a)(2) of the Act'' refers to uses that provide for the protection and propagation of fish,[13] shellfish, and wildlife, and recreation in and on the water, as well as for the protection of human health when consuming fish, shellfish, and other aquatic life. A ''sub-category of a use specified in section 101(a)(2) of the Act'' refers to any use that reflects the subdivision of uses specified in section 101(a)(2) of the Act into smaller, more homogenous groups for the purposes of reducing variability within the group.[14] A ''non-101(a)(2) use'' is a use that is not related to the protection or propagation of fish, shellfish, wildlife or recreation in or on the water. Non-101(a)(2) uses include those listed in CWA section 303(c)(2), but not those listed in CWA section 101(a)(2), including use for public water supply, agriculture, industry, and navigation.

For uses specified in section 101(a)(2) of the Act, this rule clarifies when a UAA is and is not required. This rule also makes clear that once a state or authorized tribe has rebutted the presumption of attainability by demonstrating through a required UAA that a use specified in section 101(a)(2) of the Act is not attainable, it must adopt the HAU, as defined in this rule. The HAU requirement supports adoption of states' and authorized tribes' WQS to enhance the quality of the water and to serve the purposes of the Act, including ensuring water quality that provides for uses described in CWA section 101(a)(2) where attainable and to restore and maintain the chemical, physical and biological integrity of the Nation's waters.

For non-101(a)(2) uses, this rule provides that a UAA is not required when a state or authorized tribe removes or revises a non-101(a)(2) use, but clarifies that states and authorized tribes must still submit documentation consistent with CWA section 303(c)(2)(A) to support the state or authorized tribe's action. This requirement recognizes that states' and authorized tribes' decisions about non-101(a)(2) uses must be consistent with the statute and transparent to the public and EPA. This rule also provides a regulatory definition for a non-101(a)(2) use at § 131.3(q). Non-101(a)(2) uses are separate and distinct from uses specified in CWA section 101(a)(2) and sub-categories of such uses.

To clarify when a UAA is and is not required, this rule revises § 131.10(g) and (j) so that when the provisions are read together, it is clear that the factors at § 131.10(g) are only required to be considered when the state or authorized tribe must conduct a UAA under § 131.10(j). In addition, this rule revises § 131.10(k) into new § 131.10(k)(1) and (2) to eliminate a possible contradiction with § 131.10(j)(2), as described in the preamble to the proposed rule.[15]

Section 131.10(j) describes when a UAA is required. Section 131.10(k) specifies when a UAA is not required. Further, the definition of a UAA at § 131.3(g) says that a UAA ''is a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in § 131.10(g).'' Section 131.10(g) provides that states and authorized tribes may remove a designated use if they can demonstrate that attaining a designated use is not feasible because of one of six specified factors.

EPA revises § 131.10(j)(1) to clarify that a UAA is required whenever a state or authorized tribe designates uses for the first time that do not include the uses specified in section 101(a)(2) of the Act. Section 131.10(j)(1) also clarifies that a UAA is required where a state or authorized tribe has previously designated uses that do not include the

[12] EPA's 1983 regulation and ''the rebuttable presumption stemming therefrom'' have been upheld as a ''permissible construction of the statute'' (*Idaho Mining Association* v. *Browner,* 90 F. Supp. 2d 1078, 1097–98 (D. Idaho 2000)).

[13] To achieve the CWA's goal of ''wherever attainable . . . protection and propagation of fish . . . '' all aquatic life, including aquatic invertebrates, must be protected because they are a critical component of the food web.

[14] A sub-category of a use specified in section 101(a)(2) of the Act is not necessarily less protective than a use specified in section 101(a)(2) of the Act. For example, a cold water aquatic life use is considered a use sub-category, but provides ''for the protection and propagation of fish, shellfish and wildlife,'' consistent with CWA section 101(a)(2). On the other hand, a secondary contact recreation use (*i.e.,* a use, such as wading or boating, where there is a low likelihood of full body immersion in water or incidental ingestion of water) is considered a use sub-category, but does not provide ''for recreation in and on the water,'' consistent with CWA section 101(a)(2).

[15] See 78 FR 54525 (September 4, 2013).

uses specified in section 101(a)(2) of the Act.[16] EPA revises § 131.10(j)(2) to clarify that a UAA is required when removing or revising a use specified in section 101(a)(2) of the Act as well as when removing or revising a sub-category of such a use. These revisions also clarify that when adopting a sub-category of a use specified in section 101(a)(2) of the Act with less stringent criteria, a UAA is only required when the criteria are less stringent than the previously applicable criteria. EPA made corresponding revisions to § 131.10(g) to explicitly reference § 131.10(j). This rule also includes editorial changes to § 131.10(g) that are not substantive in nature. Lastly, EPA establishes a new § 131.10(k)(1) and (2) to explain when a UAA is not required.

To ensure that states and authorized tribes adopt WQS that continue to serve the Act's goal of water quality that provides for the uses specified in section 101(a)(2) of the CWA to the extent attainable and enhance the quality of the water, this rule revises § 131.10(g) to provide that where states and authorized tribes adopt new or revised WQS based on a required UAA, they must adopt the HAU as defined at § 131.3(m). These new requirements make clear that states and authorized tribes may remove unattainable uses, but they must retain and designate the attainable use(s). The final regulation does not prohibit states and authorized tribes from removing a designated use specified in CWA section 101(a)(2) or a sub-category of such a use, altogether, where demonstrated to be unattainable. For example, a state or authorized tribe may remove an aquatic life use if it can demonstrate through a UAA that no aquatic life use or sub-category of aquatic life use is attainable. EPA expects such situations to be rare; however to clarify that this outcome is possible, EPA adds a sentence to the definition of HAU at § 131.3(m) to make explicit that where the state or authorized tribe demonstrates the relevant use specified in section 101(a)(2) of the Act and sub-categories of such a use are not attainable, there is no required HAU to be adopted. If a state or authorized tribe removes the designated use, altogether, and in the same action adopts another designated use in a different broad use category (*e.g.,* agricultural use, recreational use), it may appear as though the state or authorized tribe intends the newly adopted use to be the HAU. In fact, this is a separate state or tribal decision in the same rulemaking.

The concept of HAU is fundamental to the WQS program. Adopting a use that is less than the HAU could result in the adoption of water quality criteria that inappropriately lower water quality and could adversely affect aquatic ecosystems and the health of the public recreating in and on such waters. For example, a state or authorized tribe may be able to demonstrate that a use supporting a particular class of aquatic life is not attainable. However, if some less sensitive aquatic organisms are able to survive at the site under current or attainable future conditions, the state's or authorized tribe's WQS are not continuing to serve the goals of the CWA by removing the aquatic life use designation and applicable criteria altogether without adopting an alternate CWA section 101(a)(2) use or sub-category of such a use that is feasible to attain, and the criteria that protect that use. EPA's regulation at §§ 131.5(a)(2), 131.6(c), and 131.11(a) explicitly requires states and authorized tribes to adopt water quality criteria that protect designated uses.

Commenters expressed concern that the proposed definition of HAU used overly subjective terminology that would make it difficult for states and authorized tribes to adopt an HAU that would not be challenged by stakeholders. The definition of HAU at § 131.3(m) includes specific terms to ensure that the resulting HAU is clear to states, authorized tribes, stakeholders and the public.

First, the word ''modified'' makes clear that when adopting the HAU, the state or authorized tribe is adopting a different use within the same broad CWA section 101(a)(2) use category, if any such use is attainable. For example, if a state or authorized tribe removes a warm water aquatic life use, then the HAU is a modified version of the warm water aquatic life use, such as a ''limited warm water aquatic life use.'' The definition makes clear that states and authorized tribes are not required to determine whether one broad use category is better than another (*e.g.,* to determine that a recreation use is better than an aquatic life use).

Second, EPA adds the phrase ''based on the evaluation of the factor(s) in § 131.10(g) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability'' to the final HAU definition to be clear that the HAU is the attainable use that results from the process of determining what is not attainable. For example, where the state or authorized tribe demonstrates that a use cannot be attained due to substantial and widespread economic and social impacts, the state or authorized tribe may then determine the HAU by considering the use that is attainable without incurring costs that would cause a substantial and widespread economic and social impact consistent with § 131.10(g)(6). Although the definition continues to include the terms ''highest'' and ''closest to,'' which some commenters said were subjective terms, the new definition does not necessarily mean that the use with the most numerically stringent criteria must be designated as the HAU. The CWA does not require states and authorized tribes to adopt designated uses to protect a level beyond what is naturally occurring in the water body. Therefore, a state's or authorized tribe's determination of the HAU must take into consideration the naturally expected condition for the water body or waterbody segment. For example, Pacific Northwest states provide specific levels of protection for different life stages of salmonids. While the different life stages require different temperature criteria, the designated use with the most numerically stringent temperature criterion may not be required under § 131.11(a) to protect the HAU, if the life stage that temperature criterion protects does not naturally occur in that water body or waterbody segment.

When conducting a UAA and soliciting input from the public, states and authorized tribes need to consider not only what is currently attained, but also what is attainable in the future after achievable gains in water quality are realized. EPA recommends that such a prospective analysis involve the following:

- Identifying the current and expected condition for a water body;
- Evaluating the effectiveness of best management practices (BMPs) and associated water quality improvements;
- Examining the efficacy of treatment technology from engineering studies; and
- Using water quality models, loading calculations, and other predictive tools.

The preamble to the proposed rule also provided several examples of how states and authorized tribes can articulate the HAU. These examples include using an existing designated use framework, adopting a new statewide sub-category of a use, or adopting a new sub-category of a use that uniquely recognizes the limiting condition for a specific water body (*e.g.,* aquatic life limited by naturally high levels of copper).

One example of where a state adopted new statewide sub-categories to protect

[16] This provision includes situations where a state or authorized tribe adopts for the first time, or previously designated, only non-101(a)(2) uses.

the highest attainable use was related to a class of waters the state defines as ''effluent dependent waters.'' The state conducted a UAA to justify the removal of the aquatic life use in these waters. It was not feasible for these waters to attain the same aquatic life assemblage expected of waters assigned the statewide aquatic life use. The state identified the highest attainable aquatic life use for these waters and created two new sub-categories (effluent-dependent fisheries and effluent-dependent non-fish bearing waters) with criteria that are sufficiently protective of these uses. These EPA-approved sub-categories reflect the aquatic life use that can be attained in these waters, while still protecting the effluent dependent aquatic life.

Some commenters expressed concern with the difficulty of articulating a specific HAU because doing so may require additional analyses. Where this may be the case, an alternative method of articulating the HAU can be for a state or authorized tribe to designate for a water body a new or already established, broadly defined HAU (*e.g.,* limited aquatic life use) and the criteria associated with the best pollutant/parameter levels attainable based on the information or analysis the state or authorized tribe used to evaluate attainability of the designated use. This is reasonable because the state or authorized tribe is essentially articulating that the HAU reflects whatever use is attained when the most protective, attainable criteria are achieved.

One example where a state used this alternative method involved adoption of a process by which the state can tailor site-specific criteria to protect the highest attainable use as determined by a UAA. EPA approved the state's adoption of a broad ''Limited Use'' and the subsequent adoption of a provision to allow the development of site-specific criteria for certain pollutants to protect that use. The ''Limited Use'' shares the same water quality criteria as the state's full designated use for recreation and fish and wildlife protection ''except for any site-specific alternative criteria that have been established for the water body.'' Such site-specific criteria are limited to numeric criteria for nutrients, bacteria, dissolved oxygen, alkalinity, specific conductance, transparency, turbidity, biological integrity, or pH. The state restricts application of the ''Limited Use'' to waters with human induced physical or habitat conditions that prevent attainment of the full designated use for recreation and fish and wildlife protection, and to either (1) wholly artificial waters, or (2) altered water bodies dredged and filled prior to November 28, 1975. Through this process, the state is able to articulate the HAU by identifying the most protective, attainable criteria that can be achieved.

Where a state or authorized tribe does not already have a statewide use in their regulation that is protective of the HAU, the state or authorized tribe will need to find an approach that meets the requirements of the CWA and § 131.10(g). States and authorized tribes are not limited by the examples described in this section and can choose a different approach that aligns with their specific needs, as long as their preferred approach is protective of the HAU and is consistent with the CWA and § 131.10.[17]

As an example of how a UAA informs the identification of the HAU, consider a state or authorized tribe with a designated aquatic life use and associated dissolved oxygen criterion. The state or authorized tribe determines through a UAA that a particular water body cannot attain its designated aquatic life use due to naturally occurring dissolved oxygen concentrations that prevent attainment of the use (*i.e.,* the use is not attainable pursuant to § 131.10(g)(1)). Such an analysis also shows that the low dissolved oxygen concentrations are not due to anthropogenic sources, but rather due to the bathymetry of the water body. The state or authorized tribe then evaluates what level of aquatic life use is attainable in light of the naturally low dissolved oxygen concentration, as well as any data that were used to evaluate attainability (*e.g.,* biological data). The state or authorized tribe concludes that the naturally low dissolved oxygen concentration precludes attainment of the full aquatic life use, and requires an alternative dissolved oxygen criterion that protects the ''highest'' but limited aquatic life that is attainable. Once this analysis is complete and fully documented in the UAA, the state or authorized tribe would then designate the HAU and adopt criteria to protect that use.

To clarify what is required when a state or authorized tribe adopts new or revised non-101(a)(2) uses, this rule finalizes a new paragraph (3) at § 131.10(k) to specify that states and authorized tribes are not required to conduct a UAA whenever they wish to remove or revise a non-101(a)(2) use, but must meet the requirements in § 131.10(a). This rule defines a non-101(a)(2) use at § 131.3(q) as: ''any use unrelated to the protection and propagation of fish, shellfish, wildlife or recreation in or on the water.'' While the CWA specifically calls out the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water as the national goal, wherever attainable, this does not mean that non-101(a)(2) uses are not important. This rule revises § 131.10(a) to be explicit that where a state or authorized tribe is adopting new or revised designated uses other than the uses specified in section 101(a)(2) of the Act, or removing designated uses, it must submit documentation justifying how its consideration of the use and value of water for those uses listed in § 131.10(a) appropriately supports the state's or authorized tribe's action. EPA refers to this documentation as a ''use and value demonstration.'' These requirements are consistent with EPA's previously existing regulation at §§ 131.10(a) [18] and 131.6.[19] A UAA can also be used to satisfy the requirements at § 131.10(a).

EPA encourages states and authorized tribes to work closely with EPA when developing a use and value demonstration. States and authorized tribes must consider relevant provisions in § 131.10, including downstream protection (§ 131.10(b)) and existing uses of the water (§ 131.10(h)(1)). EPA recommends states and authorized tribes also consider a suite of other factors, including, but not limited to:

- Relevant descriptive information (*e.g.,* identification of the use that is under consideration for removal, location of the water body/waterbody

[17] Section 131.10(c) provides that states and authorized tribes ''*may* adopt sub-categories of a use. . .'' (emphasis added). This provision generally allows states and authorized tribes to adopt sub-categories of the uses specified in the CWA. This rule is finalizing revisions to § 131.10(g) to specify that when a state or authorized tribe conducts a UAA required by § 131.10(j), and the state or authorized tribe revises its WQS to something other than a use specified in section 101(a)(2) of the Act, the state or authorized tribe must adopt the highest attainable modified aquatic life, wildlife, and/or recreation use (*i.e.,* a sub-category of an aquatic life, wildlife, and/or recreation use). Where a UAA is not required by § 131.10(j), the state or authorized tribe retains discretion to choose whether to adopt sub-categories of uses per § 131.10(c).

[18] Section 131.10(a) already provided that states and authorized tribes ''must specify appropriate water uses to be achieved and protected'' and that the ''classification of the waters of the [s]tate must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation'').

[19] Section 131.6(a) and (b) already provided that states and authorized tribes must submit to EPA for review ''use designations consistent with the provisions of sections 101(a)(2) and 303(c)(2) of the Act'' and ''[m]ethods used and analyses conducted to support WQS revisions.''

segment, overview of land use patterns, summary of available water quality data and/or stream surveys, physical information, information from public comments and/or public meetings, anecdotal information, etc.),

- Attainability information (*i.e.,* the § 131.10(g) factors as described previously, if applicable),
- Value and/or benefits (including environmental, social, cultural, and/or economic value/benefits) associated with either retaining or removing the use, and
- Impacts of the use removal on other designated uses.

As an example of what a use and value demonstration for a non-101(a)(2) use can look like, consider a small water body that a state or authorized tribe generically designated as a public water supply as part of a statewide action. The state or authorized tribe decides there is no use and value in retaining such a use for that water body. The state or authorized tribe could provide the public and EPA with documentation that public water supply is not an existing use (*e.g.,* there is no evidence that the water body was used for this purpose and the water quality does not support this use); the nearby population uses an alternative drinking water supply; and projected population trends suggest that the current supply is sufficient to accommodate future growth. States and authorized tribes must make this documentation available to the public prior to any public hearing, and submit it to EPA with the WQS revision.

What did EPA consider?

In developing this rule, EPA considered foregoing the revisions to § 131.10(g), (j), and (k), but this option would not clarify when a UAA is or is not required and thus not accomplish the Agency's objectives. EPA considered finalizing the revisions to § 131.10(g), (j), and (k)(1) and (2) as proposed; however, in response to comments received, EPA made revisions to better accomplish its objectives.

EPA considered foregoing the HAU requirement at § 131.10(g), but this option would not support the adoption of WQS that continue to serve the purposes of the Act and enhance the quality of the water. EPA also considered finalizing the requirement as proposed but not finalizing a regulatory definition; however, the absence of a regulatory definition could lead to confusion and hinder environmental protection.

EPA considered not specifying what is required when removing or revising a non-101(a)(2) use in the final rule; however, multiple commenters indicated that EPA's proposed rule only specified that a UAA is not required to remove or revise a non-101(a)(2) use and did not specify what is required. Given the confusion about existing requirements, EPA decided to make the requirement explicit in § 131.10(a) and (k)(3).

What is EPA's position on certain public comments?

Numerous commenters disagreed with EPA's position that the consumption of aquatic life is a use specified in section 101(a)(2) of the Act and requested that EPA document the rationale for this position. Based on the CWA section 303(c)(2)(A) requirement that WQS protect public health, EPA interprets the uses under section 101(a)(2) of the Act to mean that not only can fish and shellfish thrive in a water body, but when caught, they can also be safely eaten by humans.[20]

EPA first articulated this interpretation in the 1992 National Toxics Rule.[21] For example, EPA specified that all waters designated for even minimal aquatic life protection (and therefore a potential fish and shellfish consumption exposure route) are protected for human health. EPA also described its interpretation in the October 2000 Human Health Methodology.[22] Consistent with this interpretation, most states have adopted human health criteria as part of their aquatic life uses, as the purpose of the criteria is to limit the amount of a pollutant in aquatic species prior to consumption by humans. However, states and authorized tribes may also choose to adopt human health criteria as part of their recreational uses, recognizing that humans will consume fish and shellfish after fishing, which many states consider to be a recreational use. EPA leaves this flexibility to states and authorized tribes as long as the waters are protecting humans from adverse effects of consuming aquatic life, unless the state or authorized tribe has shown that consumption of aquatic life is unattainable consistent with EPA's regulation.

EPA also received comments requesting clarification on existing uses. EPA notes that in addressing these comments, EPA is not reopening or changing the regulatory provision at § 131.10(h)(1). The proposed change to § 131.10(g) simply referred back to the requirement that is housed in § 131.10(h)(1) and was not intended to change requirements regarding existing uses. This is also the case in the final rule. The WQS regulation at § 131.3(e) defines an existing use 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.'' EPA provided additional clarification on existing uses in the background section of the proposed preamble,[23] as well as in a September 2008 letter from EPA to the State of Oklahoma.[24] Specifically, EPA explained that existing uses are known to be ''actually attained'' when the use has actually occurred *and* the water quality necessary to support the use has been attained. EPA recognizes, however, that all the necessary data may not be available to determine whether the use actually occurred or the water quality to support the use has been attained. When determining an existing use, EPA provides substantial flexibility to states and authorized tribes to evaluate the strength of the available data and information where data may be limited, inconclusive, or insufficient regarding whether the use has occurred and the water quality necessary to support the use has been attained. In this instance, states and authorized tribes may decide that based on such information, the use is indeed existing.

Some commenters expressed concern that this interpretation supports the removal of a designated use in a situation where the use has actually occurred but the water quality necessary to protect the use has never been attained, as well as in a situation where the water quality has been attained but the use has not actually occurred. Such an interpretation may be contrary to a state's or authorized tribe's environmental restoration efforts or water quality management goals. For example, a state or authorized tribe may designate a highly modified water body for primary contact recreation even though the water quality has never been attained to support such a use. In this situation, if the state or authorized tribe exercises its discretion to recognize such an existing use, then consistent with EPA's regulation the designated use may not be removed.

[20] *http://water.epa.gov/scitech/swguidance/standards/upload/2000_10_31_standards_shellfish.pdf.*

[21] 57 FR 60859 (December 22, 1992). See also 40 CFR 131.36.

[22] *http://water.epa.gov/scitech/swguidance/standards/criteria/health/methodology/index.cfm; Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health,* see pages 4–2 and 4–3.

[23] 78 FR 54523 (September 4, 2013).

[24] *http://water.epa.gov/scitech/swguidance/standards/upload/Smithee-existing-uses-2008-09-23.pdf.*

If a state or authorized tribe chooses not to recognize primary contact recreation as an existing use in this same situation, the state or authorized tribe still must conduct a UAA to remove the primary contact use. The state or authorized tribe may only remove the primary contact recreation use if the use is not an existing use or if more stringent criteria are being added; the use cannot be attained by implementing effluent limits required under sections 301(b) and 306 of the Act and by implementing cost-effective and reasonable best management practices for nonpoint source control (§ 131.10(h)(1) and(2)); and the state or authorized tribe can demonstrate that one of the factors listed at § 131.10(g) precludes attainment of the primary contact recreation use. The combination of all the requirements at § 131.10 ensures that states and authorized tribes designate uses consistent with the goals of the Act unless the state or authorized tribe has demonstrated that such a use is not attainable. It also requires states and authorized tribes to maintain uses that have actually been attained.

C. Triennial Reviews

What does this rule provide and why?

The CWA and EPA's implementing regulation require states and authorized tribes to hold, at least once every three years, a public hearing for the purpose of reviewing applicable WQS (*i.e.* a triennial review). The CWA creates a partnership between states and authorized tribes, and EPA, by assigning states and authorized tribes the primary role of adopting WQS (CWA sections 101(b) and 303), and EPA the oversight role of reviewing and approving or disapproving state and authorized tribal WQS (CWA section 303(c)). Consistent with this partnership, the statute also assigns EPA the role of publishing national recommended criteria to assist states and authorized tribes in establishing water quality criteria in their WQS (CWA section 304(a)(1)). States and authorized tribes have several options for developing and adopting chemical, physical and biological criteria. They may use EPA's CWA section 304(a) criteria recommendations, modify EPA's CWA section 304(a) criteria recommendations to reflect site-specific conditions, or establish criteria using other scientifically defensible methods. Ultimately, states and authorized tribes must adopt criteria that are scientifically defensible and protective of the designated use to ensure that WQS continue to ''protect the public health or welfare, enhance the quality of water and serve the purposes of'' the Act (CWA section 303(c)(2)(A)).

In some cases, states and authorized tribes do not transparently communicate with the public their consideration of EPA's CWA section 304(a) criteria recommendations when deciding whether to revise their WQS. As a result, the public may be led to believe that states and authorized tribes are not considering some of the latest science that is reflected in EPA's new or updated CWA section 304(a) criteria recommendations. To ensure public transparency and clarify existing requirements, the final rule contains two revisions to the triennial review requirements at 40 CFR 131.20(a). First, the rule requires that if states and authorized tribes choose not to adopt new or revised criteria during their triennial review for any parameters for which EPA has published new or updated criteria recommendations under CWA section 304(a), they must explain their decision when reporting the results of their triennial review to EPA under CWA section 303(c)(1) and 40 CFR 131.20(c). Second, the rule clarifies the ''applicable water quality standards'' that states and authorized tribes must review triennially.

The first revision addresses the role of EPA's CWA section 304(a) criteria recommendations in triennial reviews. While states and authorized tribes are not required to adopt EPA's CWA section 304(a) criteria recommendations, they must consider them. EPA continues to invest significant resources to examine evolving science for the purpose of updating existing and developing new CWA section 304(a) criteria recommendations to help states and authorized tribes meet the requirements of the Act. Those recommendations are based on data and scientific judgments about pollutant concentrations and environmental or human health effects.[25]

EPA's proposed rule, requiring states and authorized tribes to ''consider'' EPA's new or updated CWA section 304(a) criteria recommendations, raised several commenter questions and concerns about how states and authorized tribes were to ''document'' such consideration.

Commenters also expressed concern that EPA was overstepping its authority by dictating how states and authorized tribes conduct their triennial reviews and by requiring states and authorized tribes to adopt EPA's CWA section 304(a) criteria recommendations. This rule focuses on how a state or authorized tribe explains its decisions to EPA (and the public) rather than on how the state or authorized tribe conducts its review. The CWA section 304(a) criteria are national recommendations, and states or authorized tribes may wish to consider site-specific physical and/or chemical water body characteristics and/or varying sensitivities of local aquatic communities. While states and authorized tribes are not required to adopt the CWA section 304(a) criteria recommendations, they are required under the Act and EPA's implementing regulations to adopt criteria that protect applicable designated uses and that are based on sound scientific rationale. Since EPA revises its CWA section 304(a) recommendations periodically to reflect the latest science, it is important that states and authorized tribes consider EPA's new or updated recommendations and explain any decisions on their part to not incorporate the latest science into their WQS.

An important component of triennial reviews is meaningful and transparent involvement of the public and intergovernmental coordination with local, state, federal, and tribal entities. Communication with EPA (and the public) about these decisions provides opportunities to assist states and authorized tribes in improving the scientific basis of its WQS and can build support for state and authorized tribal decisions. Such coordination ultimately increases the effectiveness of the state and authorized tribal water quality management processes. Following this rulemaking, when states and authorized tribes conduct their next triennial review they must provide an explanation for why they did not adopt new or revised criteria for parameters for which EPA has published new or updated CWA section 304(a) criteria recommendations since May 30, 2000.[26] During the triennial reviews that follow, states and authorized tribes must do the same for criteria related to parameters for which EPA has published CWA section 304(a) criteria recommendations since the states' or authorized tribes' most recent triennial review. This requirement applies regardless of whether new or updated CWA section 304(a) criteria recommendations are

[25] EPA's compilation of national water quality criteria recommendations, published pursuant to CWA section 304(a), can be found at: *http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm.*

[26] WQS adopted and submitted to EPA by states and authorized tribes on or after May 30, 2000, must be approved by EPA before they become effective for CWA purposes, including the establishment of water quality-based effluent limits or development of total maximum daily loads (40 CFR 131.21, 65 FR 24641, April 27, 2000).

more stringent or less stringent than the state's or authorized tribe's applicable criteria because all stakeholders should know how the state or authorized tribe considered the CWA section 304(a) criteria recommendations when determining whether to revise their own WQS following a triennial review. A state's or authorized tribe's explanation may be situation-specific and could involve consideration of priorities and resources. EPA will not approve or disapprove this explanation pursuant to CWA section 303(c) nor will the explanation be used to disapprove new or revised WQS that otherwise meet the requirements of the CWA. Rather, it will inform both the public and EPA of the state's or authorized tribe's plans with respect to adopting new or revised criteria in light of the latest science. EPA strongly encourages states and authorized tribes to include their explanation on a publically accessible Web site or some other mechanism to inform the public of their decision.

The second revision addresses confusion expressed in public comments regarding the meaning of § 131.20(a) so that states, authorized tribes and the public are clear on the scope of WQS to be reviewed during a triennial review. By not addressing this issue directly in the proposal, EPA may have inadvertently created ambiguity by implying that the only criteria states and authorized tribes need to re-examine during a triennial review are those criteria related to the parameters for which EPA has published new or updated CWA section 304(a) criteria recommendations. However, EPA's intent was not to qualify the initial sentence in § 131.20(a) regarding ''applicable water quality standards'' (which are all WQS either approved or promulgated by EPA for a state or tribe) but to supplement it by adding more detail regarding the triennial review of any and all existing criteria established pursuant to 40 CFR 131.11. Thus, the final rule clarifies what the regulation means by ''applicable water quality standards.'' [27]

When conducting triennial reviews, states and authorized tribes must review all applicable WQS adopted into state or tribal law pursuant to §§ 131.10–131.15 [28] and any federally promulgated WQS.[29] Applicable WQS specifically include designated uses (§ 131.10), water quality criteria (§ 131.11), antidegradation (§ 131.12), general policies (§ 131.13), WQS variances (§ 131.14), and provisions authorizing the use of schedules of compliance for WQBELs in NPDES permits (§ 131.15).[30] If, during a triennial review, the state or authorized tribe determines that the federally promulgated WQS no longer protect its waters, the state or authorized tribe should adopt new or revised WQS. If EPA approves such new or revised WQS, EPA would withdraw the federally promulgated WQS because they would no longer be necessary.

Some states and authorized tribes target specific WQS during an individual triennial review to balance resources and priorities. The final rule does not affect states' or authorized tribes' discretion to identify such priority areas for action. However, the CWA and EPA's implementing regulation require the state or authorized tribe to hold, at least once every three years, a public hearing [31] for the purpose of reviewing applicable WQS, not just a subset of WQS that the state or authorized tribe has identified as high priority. In this regard, states and authorized tribes must still, at a minimum, seek and consider public comment on all applicable WQS.

What did EPA consider?

EPA considered finalizing the revision to § 131.20(a) as proposed. However, given public commenters' confusion and concerns, as discussed previously, EPA ultimately rejected this option. EPA also considered foregoing revisions to § 131.20(a) altogether. However, this option would not ensure that states and authorized tribes adopt criteria that reflect the latest science, and thus EPA rejected it.

What is EPA's position on certain public comments?

One commenter requested a longer period than three years for states and authorized tribes to consider new or updated CWA section 304(a) criteria recommendations because it was neither reasonable nor feasible to conduct a comprehensive review and rulemaking in this timeframe, including the public participation component. Other commenters suggested that EPA allow triennial reviews to occur ''periodically,'' while some suggested that nine or 12 years would be a more appropriate frequency of review.

Although EPA acknowledges the challenges (*e.g.,* the legal and administrative processes, resource constraints) that states and authorized tribes may experience when conducting triennial reviews, the three-year timeframe for triennial review comes directly from CWA section 303(c)(1). EPA has no authority to provide a longer timeframe for triennial reviews.

D. Antidegradation

One of the principal objectives of the CWA is to ''*maintain* the chemical, physical and biological integrity of the Nation's waters.'' [32] Congress expressly affirmed this principle of ''antidegradation'' in the Water Quality Act of 1987 in CWA sections 101(a) and 303(d)(4)(B). EPA's WQS regulation has included antidegradation provisions since 1983. In particular, 40 CFR 131.12(a)(2) includes a provision that protects ''high quality'' waters (*i.e.,* those with water quality that is better than necessary to support the uses specified in section 101(a)(2) of the Act.)

Maintaining high water quality is critical to supporting economic and community growth and sustainability. Protecting high water quality also provides a margin of safety that will afford the water body increased resilience to potential future stressors, including climate change. Degradation of water quality can result in increased public health risks, higher treatment costs that must be borne by ratepayers and local governments, and diminished aquatic communities, ecological diversity, and ecosystem services. Conversely, maintaining high water quality can lower drinking water costs, provide revenue for tourism and recreation, support commercial and recreational fisheries, increase property values, create jobs and sustain local communities.[33] While preventing degradation and maintaining a reliable source of clean water involves costs, it can be more effective and efficient than

[27] EPA published the *What is a New or Revised Water Quality Standard Under CWA 303(c)(3) Frequently Asked Questions* (EPA–820–F–12–017, October 2012) to consolidate EPA's interpretation (informed by the CWA, EPA's implementing regulation at 40 CFR part 131, and relevant case law) of what constitutes a new or revised WQS that the Agency has the CWA section 303(c)(3) authority and duty to approve or disapprove (*http://water.epa.gov/scitech/swguidance/standards/upload/cwa303faq.pdf*).

[28] Definitions adopted by states and authorized tribes are considered WQS when they are inextricably linked to provisions adopted pursuant to §§ 131.10–131.15.

[29] Any WQS that EPA has promulgated for a state or tribe are found in 40 CFR part 131, subpart D. See also: *http://water.epa.gov/scitech/swguidance/standards/wqsregs.cfm#proposed.*

[30] This rule finalizes § 131.14 (WQS Variances) and § 131.15 (Provisions Authorizing the Use of Schedules of Compliance for WQBELs in NPDES permits). For detailed discussion about these sections, see sections II.E and II.F of this document, respectively.

[31] For detailed discussion about this final rule for § 131.20(b), related to public participation, see section II.G of this document.

[32] See CWA section 101(a) (emphasis added).

[33] *http://water.epa.gov/polwaste/nps/watershed/upload/economic_benefits_factsheet3.pdf; Economic Benefits of Protecting Healthy Watersheds* (EPA 841–N–12–004, April 2012).

investing in long-term restoration efforts or remedial actions.

This rule revises the antidegradation regulation to enhance protection of high quality waters and to promote consistency in implementation. The new provisions require states and authorized tribes to follow a more structured process when making decisions about preserving high water quality. They also increase transparency and opportunities for public involvement, while preserving states' and authorized tribes' decision-making flexibility. The revisions meet the objectives of EPA's proposal, although EPA made some changes to the regulatory language after further consideration of the Agency's policy objectives and in response to public comments.

This rule establishes requirements in the following areas: Identification of high quality waters, analysis of alternatives, and antidegradation implementation methods. In addition to the substantive changes described in the following section, this rule also includes editorial changes that are not substantive in nature. For a detailed discussion of EPA's CWA authority regarding antidegradation, see the preamble to the proposed rule at 78 FR 54526 (September 4, 2013).

Identification of Waters for High Quality Water (Tier 2) Protection

What does this rule provide and why?

Tier 2 refers to a decision-making process by which a state or authorized tribe decides how and how much to protect water quality that exceeds levels necessary to support the uses specified in Section 101(a)(2) of the Act. The final rule at § 131.12(a)(2)(i) provides that states and authorized tribes may identify waters for Tier 2 protection on either a parameter-by-parameter or a water body-by-water body basis. The rule also specifies that, where states and authorized tribes identify waters on a water body-by-water body basis, states and authorized tribes must involve the public in any decisions pertaining to when they will provide Tier 2 protection, and the factors considered in such decisions. Further, states and authorized tribes must not exclude water bodies from Tier 2 protection solely because water quality does not exceed levels necessary to support all of the uses specified in CWA section 101(a)(2). This rule requires that states' and authorized tribes' antidegradation policies be consistent with these new requirements.

States and authorized tribes typically use one of two approaches to identify high quality waters consistent with the CWA. States and authorized tribes using a parameter-by-parameter approach generally identify high quality waters at the time an entity proposes the activity that would lower water quality. Under this approach, states and authorized tribes identify parameters for which water quality is better than necessary to support the uses specified in CWA section 101(a)(2) and provide Tier 2 protection for any such parameters. Alternatively, states and authorized tribes using a water body-by-water body approach generally identify waters that will receive Tier 2 protection by weighing a variety of factors, in advance of any proposed activity. States and authorized tribes can identify some waters using a parameter-by-parameter approach and other waters using a water body-by-water body approach.

The 1983 WQS regulation did not specify which approach states and authorized tribes must use to identify waters for Tier 2 protection. In the 1998 ANPRM, EPA articulated that either approach, when properly implemented, is consistent with the CWA, and described advantages and disadvantages to both approaches. A parameter-by-parameter approach can be easier to implement, can be less susceptible to challenge, and can result in more waters receiving some degree of Tier 2 protection. The ANPRM also articulated: ''[t]he water body-by-water body approach, on the other hand, allows for a weighted assessment of chemical, physical, biological, and other information (*e.g.,* unique ecological or scenic attributes). In this regard, the water body-by-water body approach may be better suited to EPA's stated vision for the [WQS] program . . . This approach also allows for the high quality water decision to be made in advance of the antidegradation review . . ., which may facilitate implementation. A water body-by-water body approach also allows [s]tates and [t]ribes to focus limited resources on protecting higher-value [s]tate or [t]ribal waters. The water body-by-water body approach can . . . preserve high quality waters on the basis of physical and biological attributes, rather than high water quality attributes alone.''

Because the original WQS regulation did not provide specific requirements regarding use of the water body-by-water body approach, it was possible for states and authorized tribes to identify high quality waters in a manner inconsistent with the CWA and the intent of EPA's implementing regulation. In some cases, states and authorized tribes have used the water body-by-water body approach without documenting the factors that inform the decision or informing the public. For example, some states or authorized tribes have excluded waters from Tier 2 protection entirely based on the fact that the water was included on a CWA section 303(d) list for a single parameter without allowing an opportunity for the public to provide input.

This rule reaffirms EPA's support for both approaches. The new regulatory requirements included at § 131.12(a)(2)(i) only apply to the water body-by-water body approach because they are unnecessary for the parameter-by-parameter approach. States and authorized tribes using the parameter-by-parameter approach provide Tier 2 protection to all chemical, physical, and biological parameters for which water quality is better than necessary to protect the uses specified in CWA section 101(a)(2). Because the identification of waters that are high quality with respect to relevant parameters would occur in the context of allowing a specific activity, the level of protection is already subject to any public involvement required for that activity. For example, an NPDES permit writer calculating WQBELs would use available data and information about the water body to determine whether assimilative capacity exists for the relevant parameters. The state or authorized tribe would then provide Tier 2 protection for all parameters for which assimilative capacity exists. The draft permit would reflect the results of the Tier 2 review, hence providing an opportunity for public involvement.

The requirement at § 131.12(a)(2)(i) regarding public involvement increases the transparency of and accountability for states' and authorized tribes' water quality management decisions. The final rule is consistent with the CWA and the WQS regulation's emphasis on the public's role in water quality protection. A key part of a state's or authorized tribe's antidegradation process involves decisions on how to manage high water quality, a shared public resource. Commenters expressed concern that the proposed rule did not require states and authorized tribes to engage the public on decisions when implementing a water body-by-water body approach. Consequently, the public would not know the factors a state or authorized tribe considered in deciding that the water body did not merit Tier 2 protection, which would limit the public's ability to provide constructive input during the permit's public notice and comment period.

To provide for well-informed public input and to aid states and authorized tribes in making robust decisions, EPA

recommends states and authorized tribes document their evaluation of the Tier 2 decision, including the factors considered and how those factors were weighed. The case of *Ohio Valley Envtl. Coalition* v. *Horinko* demonstrates why it is important for states and authorized tribes to articulate the rationale for their decisions.[34] In this case, the U.S. District Court for the Southern District of West Virginia considered whether the record contained sufficient evidence to justify EPA's approval of the state's exclusion of particular water bodies from Tier 2 protection. The state had classified some CWA section 303(d) listed waters as waters to receive Tier 2 protection, while it had excluded other similar waters with similar impairments from Tier 2 protection. The Court found the administrative record insufficient to support EPA's decision to approve the state's classification because the state's CWA section 303(d) listing was the only evidence related to the water quality of those river segments. The Court did not opine on whether, in a different factual situation, categorically excluding waters from Tier 2 protection based on CWA section 303(d) impairments would be consistent with the CWA.

To minimize the administrative processes associated with this rule, EPA uses the phrase ''opportunity for public involvement'' rather than ''public participation.'' ''Public participation'' at 40 CFR 131.20(b)[35] refers to a state or authorized tribe holding a public hearing for the purpose of reviewing WQS. With this rule, EPA provides states and authorized tribes the flexibility to engage the public in a way that suits the state or authorized tribe and the public. For example, a state or authorized tribe could develop lists of waters that will and will not receive Tier 2 protection along with descriptions of the factors considered in making each of those decisions and post that information on its Web site. To obtain public input, the state or authorized tribe could share these lists during a triennial review and/or during revision of antidegradation implementation methods. Such an approach has the advantage of streamlining both the decision-making and public involvement processes. As another example, a state could use the NPDES process to engage the public at the time it drafts a permit that would allow a lowering of water quality. The state would document the relevant information related to its decision in the permit fact sheet provided to the public and specifically request comment on its Tier 2 protection decision.

States and authorized tribes can provide additional avenues for public involvement by providing structured opportunities for the public to initiate antidegradation discussions. For example, a state or authorized tribe could provide a petition process in which citizens request Tier 2 protection for specific waters, and those citizens could provide data and information for a state's or authorized tribe's consideration. Also, states and authorized tribes can establish a process to facilitate public involvement in identifying waters as Outstanding National Resource Waters (ONRWs).

An additional requirement at § 131.12(a)(2)(i) provides that states and authorized tribes must not exclude a water body from the protections in § 131.12(a)(2) solely because water quality does not exceed levels necessary to support all of the uses specified in CWA section 101(a)(2). For a discussion on why such an approach is inconsistent with the Act, see the preamble to the proposed rule at 78 FR 54527 (September 4, 2013). Thus, when considering whether to exclude waters from Tier 2 protection, states and authorized tribes must consider the overall quality of the water rather than whether water quality is better than necessary for individual chemical, physical, and biological parameters to support all the uses specified in CWA section 101(a)(2). The rule provides for a decision-making process where states and authorized tribes consider water quality and reasons to protect water quality more broadly. This can lead to more robust evaluations of the water body, and potentially more waters receiving Tier 2 protection. To make a decision to exclude a water body from Tier 2 protection, states and authorized tribes must identify the factors considered which should include factors that are rooted in the goals of the CWA, including the chemical, physical, and biological characteristics of a water body. Where states and authorized tribes wish to consider CWA section 303(d) listed impairments, it would be important that they also consider all other relevant available data and conduct an overall assessment of a water's characteristics. It would also be important that states and authorized tribes consider the public value of the water. This includes the water's impact on public health and welfare, the existing aquatic and recreational uses, and the value of retaining ecosystem resilience against the effects of future stressors, including climate change. For additional information on this overall assessment, see the preamble to the proposed rule at 78 FR 54527 (September 4, 2013).

This requirement is consistent with the proposed rule. However, to accurately articulate the requirement, and to remain consistent with § 131.12(a)(2), the final rule text reflects that for a water to have available assimilative capacity for which to provide Tier 2 protection, the water quality must ''exceed'' the levels necessary (*i.e.,* be better than necessary) to support the uses specified in CWA section 101(a)(2). Commenters stated that some members of the public could misinterpret the phrase ''high quality waters'' in the proposal to include waters that *meet* but do not *exceed* the water quality necessary to support the uses specified in CWA section 101(a)(2). The final rule replaces ''high quality waters'' with the phrase ''waters for the protections described in (a)(2) of this section.'' The final rule also says waters cannot be excluded from Tier 2 protection solely ''because water quality does not exceed levels necessary to support all of the uses specified in section 101(a)(2) of the Act'' instead of ''because not all of the uses specified in CWA section 101(a)(2) are attained,'' as stated in the proposal.

Where water quality is better than necessary to support all of the uses specified in CWA section 101(a)(2), § 131.12(a)(2) requires states and authorized tribes to provide Tier 2 protection. Where water quality is not better than necessary to support all of the uses specified in CWA section 101(a)(2), the final rule does not require states and authorized tribes to provide Tier 2 protection for the water body. However, in instances where states and authorized tribes lack data and information on the water quality to make individual water body conclusions, EPA recommends that they provide all or a subset of their waters with Tier 2 protection, by default. Doing so will increase the probability that these waters will maintain a level of resiliency to future stressors.

This rule requires states' and authorized tribes' antidegradation policies (which are legally binding state and authorized tribal provisions subject to public participation) to be consistent with the new requirements related to identifying waters for Tier 2 protection. Since states and authorized tribes must provide for public participation on their antidegradation policies, placing their requirements for identification of high quality waters in their antidegradation policies increases accountability and transparency. The proposed rule

[34] *Ohio Valley Envtl. Coal.* v. *Horinko,* 279 F. Supp. 2d 732, 746–50 (S.D. W. Va. 2003).

[35] See section II.G for more information on the final rule change related to public participation.

articulated that states and authorized tribes must design their implementation methods to achieve the requirements for identifying high quality waters. Commenters questioned whether the proposed requirement for identifying high quality waters was mandatory, since the proposal did not require states and authorized tribes to adopt the requirement into their legally binding policies. Some commenters suggested requiring states and authorized tribes to adopt all implementation methods into binding provisions. While some states and authorized tribes find adoption of their implementation methods to be helpful, others view it as burdensome. EPA determined that while adopting implementation methods increases accountability and transparency, states and authorized tribes could still provide this accountability and transparency for identification of waters for Tier 2 protection without a requirement to adopt implementation methods. Therefore, the final rule requires antidegradation policies to be consistent with the provision at § 131.12(a)(2)(i). States and authorized tribes have the discretion and flexibility to adopt antidegradation provisions that address other aspects of antidegradation that are not specifically addressed in § 131.12(a). Where a state or authorized tribe chooses to include antidegradation implementation methods in non-binding guidance, the methods must be consistent with the applicable state or authorized tribal antidegradation requirements that EPA has approved. Consistent with § 122.44(d)(1)(vii)(a), permits must derive from and comply with all applicable WQS. Otherwise, EPA could have a basis to object to the permits.

What did EPA consider?

EPA considered not revising § 131.12(a)(2) and continuing to provide no new regulatory requirements for identification of waters for Tier 2 protection. EPA also considered prohibiting the water body-by-water body approach. Providing no regulatory requirements would continue to allow states and authorized tribes to implement a water body-by-water body approach that is potentially inconsistent with the CWA, while prohibiting the water body-by-water body approach would limit states' and authorized tribes' flexibility to prioritize their waters for Tier 2 protection. EPA rejected these options in favor of a more balanced approach by placing conditions on how states and authorized tribes use their discretion to better ensure protection of high quality waters.

EPA considered finalizing the rule as proposed, without a requirement for public involvement in decisions about whether to provide Tier 2 protection to a water body; however, EPA found that public involvement is critical for increasing accountability and transparency and included the requirement in the final rule. EPA also considered providing for an EPA approval or disapproval action under CWA section 303(c) of states' and authorized tribes' decisions on whether to provide Tier 2 protection to each water. EPA ultimately decided not to include such a requirement because of concern that it would add more administrative and rulemaking burden for states and authorized tribes than EPA determined was necessary to ensure public involvement. EPA considered specifying precisely which waters must receive Tier 2 protection. However, EPA did not include such specificity in the rule because there are multiple ways that states and authorized tribes can make well-reasoned decisions on Tier 2 protection based on case-specific facts.

Analysis of Alternatives

What does this rule provide and why?

The final rule at § 131.12(a)(2)(ii) provides that before allowing a lowering of high water quality, states and authorized tribes must find, after an analysis of alternatives, that such a lowering is necessary to accommodate important economic or social development in the area in which the waters are located. That analysis must evaluate a range of non-degrading and less degrading practicable alternatives. For the purposes of this requirement, the final rule at § 131.3(n) defines ''practicable'' to mean ''technologically possible, able to be put into practice, and economically viable.'' When an analysis identifies one or more such practicable alternatives, states and authorized tribes may only find that a lowering is necessary if one such alternative is selected for implementation. This rule requires that states' and authorized tribes' antidegradation policies must be consistent with these new requirements.

Section 131.12(a)(2)(ii) requires a structured analysis of alternatives, which will increase transparency and consistency in states' and authorized tribes' decisions about high water quality. The new requirement makes the analysis of alternatives an integral part of a state's or authorized tribe's finding that degradation of high quality water is ''necessary.'' Such an analysis provides states and authorized tribes with a basis to make informed and reasoned decisions, assuring that degradation only occurs where truly necessary. This rule refers to ''analysis of alternatives'' rather than ''alternatives analysis'' as in the proposal. This makes clear that the analysis required in § 131.12(a)(2)(ii) is distinct from the ''alternatives analysis'' required in other programs, such as the National Environmental Policy Act and CWA section 404 permitting.

Section 131.12(a)(2)(ii) is consistent with the proposed rule, but makes clear that states' and authorized tribes' findings that a lowering is necessary depends on both an analysis of alternatives and an analysis related to economic or social development. Commenters were concerned that the proposed rule seemed to remove the requirement at § 131.12(a)(2) for states and authorized tribes to consider whether a lowering of water quality will ''accommodate important economic or social development in the area in which the waters are located.''

This rule preserves states' and authorized tribes' discretion to decide the order in which they satisfy these requirements. A state or authorized tribe can choose to first review an analysis of economic or social development. If it finds that the proposed lowering of water quality would accommodate important economic or social development, it can then require an analysis of alternatives to see if the lowering could be prevented or lessened. If, on the other hand, a state or authorized tribe finds that the proposed lowering of water quality would not accommodate important economic or social development, it could choose to disallow lowering of water quality and terminate the Tier 2 review without ever requiring an analysis of alternatives. Similarly, a state or authorized tribe could first choose to require an analysis of alternatives and then examine an analysis of economic or social development. In this case, if a non-degrading alternative is selected for implementation, the state or authorized tribe does not need to proceed with an analysis of economic or social development.

Although states and authorized tribes are responsible for making a finding to allow a lowering of water quality based on a reasonable, credible, and adequate analysis of alternatives, states and authorized tribes themselves need not conduct the analysis of alternatives or select the alternative to be implemented. Commenters expressed concern that the proposed rule language implied that states and authorized tribes must perform the analysis themselves, when

other entities may be best positioned to analyze the alternatives. The final rule language allows states and authorized tribes to rely on analyses prepared by third parties (*e.g.,* a permit applicant). This preserves appropriate flexibility for states' and authorized tribes' decision-makers, and can bring additional resources and expertise to the analysis. States and authorized tribes remain ultimately responsible for making findings to allow degradation and for basing their decisions on adequate analyses. If the state or authorized tribe deems an initial analysis of alternatives insufficient to support a finding that a lowering of high water quality is ''necessary,'' it can request additional analyses of alternatives from the permit applicant or other entities. A state or authorized tribe can also obtain information on common practicable alternatives appropriate for a proposed activity from additional existing resources.[36]

The final rule specifies that states and authorized tribes must analyze ''practicable alternatives that would prevent or lessen the degradation,'' rather than ''non-degrading and minimally degrading practicable alternatives that have the potential to prevent or minimize the degradation,'' as proposed. While non-degrading or minimally degrading alternatives preserve high water quality to a greater extent, in cases where no minimally-degrading alternatives exist, a less degrading alternative will still provide a margin of protection for the high quality water. The final rule requires a broader, more complete analysis.

To enhance clarity and provide for consistency in implementation, this rule finalizes a definition of the word ''practicable.'' The definition embodies a common sense notion of practicability—*i.e.,* an alternative that can actually be implemented under the circumstances. Because ''practicable'' appears in other contexts related to water quality, the definition at § 131.3(n) is only applicable for § 131.12(a)(2)(ii). This definition is consistent with the one articulated in the preamble to the proposed rule,[37] but eliminates redundancy and omits ''at the site in question'' in response to commenters' concern that relocation of a proposed activity may be a less degrading alternative that the state or authorized tribe can consider.

[36] E.g., EPA's Municipal Technologies Web site, which presents technology fact sheets to assist in the evaluation of different technologies for wastewater (*http://water.epa.gov/scitech/wastetech/mtb_index.cfm*).

[37] See 78 FR 54528 (September 4, 2013).

Section 131.12(a)(2)(ii) provides for preservation of high water quality by requiring a less degrading practicable alternative to be selected for implementation, if available, before states and authorized tribes may find that a lowering of water quality is necessary. This requirement applies even if the analysis identifies only one alternative. States and authorized tribes must still make a finding that a lowering is necessary if the analysis does not identify any practicable alternatives that lessen degradation. On the other hand, if the analysis results in choosing an alternative that avoids degradation, a state or authorized tribe need not make a finding. Regardless of the number of alternatives identified, the analysis should document a level of detail that reflects the significance and magnitude of the particular circumstances encountered, to provide the public with the necessary information to understand how the state or authorized tribe made its decision.

EPA chose not to require implementation of the least degrading practicable alternative to allow states and authorized tribes the flexibility to balance multiple considerations. Some alternatives to lowering water quality can have negative environmental impacts in other media (*e.g.,* air, land). For example, incinerating pollutants rather than discharging the pollutants to surface waters could adversely impact air quality and energy use, and land application of pollutants could have adverse terrestrial impacts. EPA recommends that states and authorized tribes consider cross-media impacts and, where possible, seek alternatives that minimize degradation of water quality and also minimize other environmental impacts.

The final rule requires states' and authorized tribes' antidegradation policies (which are legally binding provisions subject to public participation) to be consistent with the new requirements related to analysis of alternatives. As with the provision on identification of waters for Tier 2 protection at § 131.12(a)(2)(i), EPA determined that antidegradation policies must be consistent with the federal regulation on analysis of alternatives at § 131.12(a)(2)(ii) to increase accountability and transparency.

What did EPA consider?

EPA considered finalizing the proposed rule without alteration. EPA did not choose this option in light of commenters' suggestions to clarify the language in order to avoid confusion as to who is responsible for conducting the analysis. EPA also rejected an option to forego any revisions related to an analysis of alternatives, as this would not provide clarification regarding what type of analysis supports states' or authorized tribes' decisions that a lowering of water quality is ''necessary,'' thus risking a greater loss of water quality.

Antidegradation Implementation Methods

What does this rule provide and why?

The rule at § 131.12(b) requires states' and authorized tribes' antidegradation implementation methods (whether or not those methods are adopted into rule) to be consistent with their antidegradation policies and with § 131.12(a). This rule also requires states and authorized tribes to provide an opportunity for public involvement during the development and any subsequent revisions of antidegradation implementation methods, and to make the methods available to the public.

Finally, this rule adds § 131.5(a)(3) to explicitly specify that EPA has the authority to determine whether the states' and authorized tribes' antidegradation policies and any adopted antidegradation implementation methods[38] are consistent with the federal antidegradation requirements at § 131.12. This revision does not expand EPA's existing CWA authority, rather it ensures § 131.5 is consistent with §§ 131.6 and 131.12.

The public involvement requirement at § 131.12(b) increases transparency, accountability, and consistency in states' and authorized tribes' implementation. EPA proposed a requirement that implementation methods be publicly available. As EPA discussed in the preamble to the proposed rule, CWA section 101(e) provides that ''public participation in the development, revision, and enforcement of any regulations, standard, effluent limitation, plan, or program established . . . under this Act shall be provided for, encouraged, and assisted . . .'' Thus, this rule also provides for public involvement during development or revision of implementation methods. A state or authorized tribe may decide to offer more than one opportunity to most effectively engage the public. States and authorized tribes can use various mechanisms to provide such

[38] See *http://water.epa.gov/scitech/swguidance/standards/cwa303faq.cfm. What is a New or Revised Water Quality Standard Under CWA 303(c)(3) Frequently Asked Questions* (EPA–820–F–12–017, October 2012).

opportunities, including a public hearing, a public meeting, a public workshop, and different ways of engaging the public via the Internet, such as webinars and Web site postings. If a state or authorized tribe adopts antidegradation implementation methods as part of its WQS or other legally binding provisions, the state's or authorized tribe's own public participation requirements and 40 CFR part 25 and § 131.20(b) of the federal regulation, will satisfy this requirement.

Section 131.5(a)(3) makes explicit EPA's authority to review states' and authorized tribes' antidegradation policies and any adopted antidegradation implementation methods and to determine whether those policies and methods are consistent with § 131.12. EPA recommends states and authorized tribes adopt binding implementation methods to provide more transparency and consistency for the public and other stakeholders and to increase accountability. States and authorized tribes may find that the Continuing Planning Process provisions described at CWA section 303(e) and § 130.5 can facilitate the state's or authorized tribe's establishment and maintenance of a process for WQS implementation consistent with the requirements of the final rule.

Here, EPA clarifies the terms ''antidegradation policy'' and ''antidegradation implementation methods.'' For the purposes of § 131.12, states' and authorized tribes' ''antidegradation policies'' must be adopted in rule or other legally binding form, and must be consistent with the requirements of § 131.12(a). EPA originally promulgated this requirement in 1983. ''Antidegradation implementation methods'' refer to any additional documents and/or provisions in which a state or authorized tribe describes methods for implementing its antidegradation policy, whether or not the state or authorized tribe formally adopts the methods in regulation or other legally binding form. If a state or authorized tribe does not choose to adopt the entirety of its implementation methods, EPA recommends, at a minimum, adopting in regulation or other legally binding form any antidegradation program elements that substantively express the desired instream level of protection and how that level of protection will be expressed or established for such waters in the future.

What did EPA consider?

EPA considered not adding § 131.5(a)(3). EPA rejected this option in light of commenters' suggestions to clarify the extent of EPA's authority. EPA also considered not adding § 131.12(b) or establishing § 131.12(b), as proposed. However, public involvement in the development and implementation of states' and authorized tribes' antidegradation implementation methods is fundamental to meeting the CWA requirements to restore and maintain water quality. EPA considered revising the rule to require that all states and authorized tribes adopt the entirety of their antidegradation implementation methods in regulation to improve accountability and transparency, as some commenters suggested. EPA did not make this change because it would limit states' and authorized tribes' ability to easily revise their implementation methods in order to adapt and improve antidegradation protection in a timely manner. Some states and authorized tribes have difficulty adopting their methods because of resource constraints, state or tribal laws, or complex rulemaking processes. Instead of requiring adoption of implementation methods, the final rule achieves more accountability by establishing specific requirements for states' and authorized tribes' antidegradation policies regarding two key aspects of Tier 2 implementation.

What is EPA's position on certain public comments?

Commenters requested clarification concerning whether states and authorized tribes must change their approaches to antidegradation to be consistent with the final rule. Where a state or authorized tribe already has established antidegradation requirements consistent with this rule, EPA does not anticipate the need for further changes.

Many commenters requested clarification concerning whether the proposed rule affects states' and authorized tribes' ability to use *de minimis* exclusions. Some states and authorized tribes use *de minimis* exclusions to prioritize and manage limited resources by excluding activities from Tier 2 review if they view the activity as potentially causing an insignificant lowering of water quality. This allows states and authorized tribes to use their limited resources where it can have the greatest environmental impact. Although EPA did not propose any revisions related to defining or authorizing *de minimis* exclusions, some commenters requested that EPA finalize a rule that explicitly accepts them, and others asked EPA to prohibit them. Section 131.12—including the revisions in this rule—does not address *de minimis* exclusions. States and authorized tribes can use *de minimis* exclusions, as long as they use them in a manner consistent with the CWA and § 131.12.

The DC Circuit explained in *Ala. Power* v. *Costle* that under the *de minimis* doctrine, ''[c]ategorical exemptions may also be permissible as an exercise of agency power, inherent in most statutory schemes, to overlook circumstances that in context may fairly be considered *de minimis.''* [39] The Court went on to explain that the authority to create a *de minimis* provision ''is not an ability to depart from the statute, but rather a tool to be used in implementing the legislative design.'' [40] The Sixth Circuit has also explained that *de minimis* provisions are created through an ''administrative law principle which allows an agency to create unwritten exceptions to a statute or rule for insignificant or '*de minimis'* matters.'' [41]

States and authorized tribes have historically defined ''significant degradation'' in a variety of ways. Significance tests range from simple to complex, involve qualitative or quantitative measures or both, and may vary depending upon the type of pollution or pollutant (*e.g.,* the approach may be different for highly toxic or bioaccumulative pollutants). EPA does not endorse one specific approach to identifying what constitutes insignificant degradation, though EPA does recognize that one potential way a state or authorized tribe could describe its *de minimis* methodology would be to identify a ''significance threshold'' as percentage of assimilative capacity loss for a parameter or lowering of water quality that would be considered ''insignificant.'' EPA has not found a scientific basis to identify a specific percentage of loss of assimilative capacity or lowering of water quality that could reasonably be considered insignificant for all parameters, in all waters, at all times, for all activities. Depending on the water body's chemical, physical, and biological characteristics and the circumstances of the lowering of water quality, even very small changes in water quality could cause significant effects to the water body.

Courts have explained that the implied *de minimis* provision authority is ''narrow in reach and tightly bounded by the need to show that the situation

[39] *Ala. Power.* v. *Costle,* 636 F.2d. 323, 360 (D.C. Cir. 1979).

[40] *Id.*

[41] *Ky. Waterways Alliance* v. *Johnson,* 540 F.3d 466, 483 (6th Cir. 2008).

is genuinely *de minimis* or one of administrative necessity.'' [42] Accordingly, this authority only applies ''when the burdens of regulation yield a gain of trivial or no value.'' [43] Finally, a ''determination of when matters are truly *de minimis* naturally will turn on the assessment of particular circumstances, and the agency will bear the burden of making the required showing.'' [44]

Unless a state or authorized tribe can provide appropriate technical justification, it should not create categorical exemptions from Tier 2 review for specific types of activities based on a general finding that such activities do not result in significant degradation. States and authorized tribes should also consider the appropriateness of exemptions depending on the types of chemical, physical, and biological parameters that would be affected. For example, if a potential lowering of water quality contains bioaccumulative chemicals of concern, a state or authorized tribe should not apply a categorical *de minimis* exclusion because even extremely small additions of such chemicals could have a significant effect. For such pollutants, it could be possible to apply a *de minimis* exclusion on a case by case basis, but the state or authorized tribe should carefully consider any such proposed lowering prior to determining that it would be insignificant. States and authorized tribes should also consider the potential effects of cumulative impacts on the same water body to ensure that the cumulative degradation from multiple activities each considered to have a *de minimis* impact will not cumulatively add up to a significant impact. Finally, if a state or authorized tribe intends to use *de minimis* exclusions, then EPA recommends that it describe how it will use *de minimis* in its antidegradation implementation methods. This guarantees that states and authorized tribes will inform the public ahead of time about how they will use *de minimis* exemptions.

EPA also encourages states and authorized tribes to consider other ways to help focus limited resources where they may result in the greatest environmental protection. A state or authorized tribe should consider whether it will require more effort and resources to justify a *de minimis* exemption than it would take to actually complete a Tier 2 review for the activity. EPA encourages states and authorized tribes to develop ways to streamline Tier 2 reviews, rather than seeking to exempt activities from review entirely.

E. WQS Variances

What does this rule provide and why?

This rule establishes an explicit regulatory framework for the adoption of WQS variances that states and authorized tribes can use to implement adaptive management approaches to improve water quality. States and authorized tribes can face substantial uncertainty as to what designated use may ultimately be attainable in their waters. Pollutants that impact such waters can result from large-scale land use changes, extreme weather events, or environmental stressors related to climate change that can hinder restoration and maintenance of water quality. In addition, pollutants can be persistent in the environment and, in some cases, lack economically feasible control options. WQS variances are customized WQS that identify the highest attainable condition applicable throughout the WQS variance term. For a discussion of why it is important for states and authorized tribes to include the highest attainable condition, see the preamble to the proposed rule at 78 FR 54534 (September 4, 2013). States and authorized tribes could use one or more WQS variances to require incremental improvements in water quality leading to eventual attainment of the ultimate designated use.

While EPA has long recognized WQS variances as an available tool, the final rule provides regulatory certainty to states and authorized tribes, the regulated community, and the public that WQS variances are a legal WQS tool. The final rule explicitly authorizes the use of WQS variances and provides requirements to ensure that WQS variances are used appropriately. Such a mechanism allows states and authorized tribes to work with stakeholders and assure the public that WQS variances facilitate progress toward attaining designated uses. When all parties are engaged in a transparent process that is guided by an accountable framework, states and authorized tribes can move past traditional barriers and begin efforts to maintain and restore waters. As discussed in the preamble to the proposed rule at 78 FR 54531 (September 4, 2013), a number of states have not pursued WQS variances. For WQS variances submitted to EPA between 2004 and 2015, 75% came from states covered by the ''Water Quality Guidance for the Great Lakes System'' rulemaking at 40 CFR part 132. EPA attributes the Region 5 states' success in adopting and submitting WQS variances to the fact that the states and their stakeholders have had more specificity in regulation regarding WQS variances than the rest of the country. This final rule is intended to provide the same level of specificity nationally.

EPA's authority to establish requirements for WQS variances comes from CWA sections 101(a) and 303(c)(2). This rule reflects this authority by explicitly recognizing that states and authorized tribes may adopt time-limited WQS with a designated use and criterion reflecting the highest attainable condition applicable throughout the term of the WQS variance, instead of pursing a permanent [45] revision of the designated use and associated criteria. WQS variances serve the national goal in section 101(a)(2) of the Act and the ultimate objective of the CWA to restore and maintain the chemical, physical, and biological integrity of the Nation's waters because WQS variances are narrow in scope and duration and are designed to make progress toward water quality goals. When a WQS variance is in place, all other applicable standards not addressed in the WQS variance continue to apply, in addition to the ultimate water quality objectives (*i.e.,* the underlying WQS). Also, by requiring the highest attainable condition to be identified and applicable throughout the term of the WQS variance, the final rule provides a mechanism to make incremental progress toward the ultimate water quality objective for the water body and toward the restoration and maintenance of the chemical, physical, and biological integrity of the Nation's waters.

This rule adds a new regulatory section at § 131.14 that explicitly authorizes the use of WQS variances when the applicable designated uses are not attainable in the near-term but may be attainable in the future. The rule clarifies how WQS variances relate to other CWA programs and specifies the information that the state and authorized tribe must adopt in any WQS variance, including the highest attainable condition. States and authorized tribes must submit to EPA supporting documentation that demonstrates why the WQS variance is

[42] *Id.* (quoting *Ala. Power.* v. *Costle,* 636 F.2d. 323, 361 (D.C. Cir. 1979)).

[43] *Id.* (quoting *Greenbaum* v. *U.S. Envtl Prot. Agency,* 370 F.3d 527, 534 (6th Cir. 2004)).

[44] *Id.* (quoting *Greenbaum* v. *U.S. Envtl Prot. Agency,* 370 F.3d 527, 534 (6th Cir. 2004)).

[45] ''Permanent'' is used here to contrast between the time-limited nature of WQS variances and designated use changes. In accordance with 40 CFR 131.20, waters that ''do not include the uses specified in section 101(a)(2) of the Act shall be re-examined every 3 years to determine if new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the [s]tate shall revise its standards accordingly.''

needed and justifies the term and interim requirements. Finally, the rule requires states and authorized tribes to reevaluate WQS variances longer than five years on an established schedule with public involvement. The changes from the proposed rule respond to public comments and remain consistent with the Agency's clearly articulated policy objectives in the proposed rule. This rule also includes editorial changes that are not substantive in nature.

First, to provide clarity, this rule includes a new section at § 131.14 to explicitly authorize states and authorized tribes to adopt WQS variances. States and authorized tribes may adopt WQS variances for a single discharger, multiple dischargers, or a water body or waterbody segment, but it only applies to the permittee(s) or water body/waterbody segment(s) specified in the WQS variance. The rule defines a WQS variance at § 131.3(o) as a time-limited designated use and criterion for a specified pollutant(s), permittee(s), and/or water body or waterbody segment(s) that reflects the highest attainable condition applicable throughout the specified time period. The rule further specifies that a WQS variance is a new or revised WQS subject to EPA review and approval or disapproval,[46] requires a public process, and must be reviewed on a triennial basis. All other applicable standards not specifically addressed by the WQS variance remain applicable. This rule adds § 131.5(a)(4) to explicitly specify that EPA has the authority to determine whether any WQS variances adopted by a state or authorized tribe are consistent with the requirements at § 131.14. A WQS variance shall not be adopted if the designated use and criterion can be achieved by implementing technology-based effluent limits required under sections 301(b) and 306 of the Act.

To make incremental water quality improvements, it is important that states' and authorized tribes' WQS continue to reflect the ultimate water quality goal. This rule, therefore, requires states and authorized tribes to retain the underlying designated use and criterion in their standards to apply to all other permittees not addressed in the WQS variance, and for identifying threatened and impaired waters under CWA section 303(d), and for establishing a Total Maximum Daily Load (TMDL).[47] For further clarity, this rule also specifies that once EPA approves a WQS variance, including the highest attainable condition, it applies for purposes of developing NPDES permit limits and requirements under 301(b)(1)(C). WQS variances can also be used by states, authorized tribes, and other certifying entities when issuing certifications under CWA section 401. If EPA disapproves a WQS variance, the state or authorized tribe will have an opportunity to revise and re-submit the WQS variance for approval. Until EPA approves the re-submitted WQS variance, the underlying designated use and criteria remain applicable for all CWA purposes. This rule reinforces the requirements at § 122.44(d)(1)(vii)(A) by specifying that any limitations and requirements necessary to implement the WQS variance must be included as enforceable conditions of the implementing NPDES permit.

Second, to provide public transparency, this rule requires states and authorized tribes to include specific information in the WQS variance. States and authorized tribes must specify the pollutant(s) or water quality parameter(s) and the water body/waterbody segment(s) to which the WQS variance applies. A state or authorized tribe must also identify the discharger(s) subject to a discharger-specific WQS variance. As an alternative to identifying the specific dischargers at the time of adoption of a WQS variance for multiple dischargers, states and authorized tribes may adopt specific eligibility requirements in the WQS variance. This will make clear what characteristics a discharger must have in order to be subject to the WQS variance for multiple dischargers. It is EPA's expectation that states and authorized tribes that choose to identify the dischargers in this manner will subsequently make a list of the facilities covered by the WQS variance publicly available (*e.g.,* posted on the state or authorized tribal Web site). It may be appropriate for a state or authorized tribe to adopt one WQS variance that applies to multiple dischargers experiencing the same challenges in meeting their WQBELs for the same pollutant so long as the WQS variance is consistent with the CWA and § 131.14.[48] A multiple discharger WQS variance may not be appropriate or practical for all situations and can be highly dependent on the applicable pollutants, parameters, and/or permittees.

States and authorized tribes must also specify the term of any WQS variance to ensure that WQS variances are time-limited. States and authorized tribes have the flexibility to express the WQS variance term as a specific date (*e.g.,* expires on December 31, 2024) or as an interval of time after EPA-approval (*e.g.,* expires 10 years after EPA approval), as long as it is only as long as necessary to achieve the highest attainable condition. If, at the end of the WQS variance, the underlying designated use remains unattainable, the state or authorized tribe may adopt a subsequent WQS variance(s), consistent with the requirements of § 131.14.

To ensure that states and authorized tribes use WQS variances that continue to make water quality progress, the rule does not allow a WQS variance to lower currently attained ambient water quality, except in circumstances where a WQS variance will allow short-term lowering necessary for restoration activities consistent with § 131.14(b)(2)(i)(A)(*2*). Moreover, states and authorized tribes must specify in the WQS variance itself the interim requirements reflecting the highest attainable condition. Where a permittee cannot immediately meet the WQBEL derived from the terms of a WQS variance, the permitting authority can decide whether to provide a permit compliance schedule (where authorized) so the permittee can remain in compliance with its NPDES permit.[49] (See CWA section [502(17)] for a definition of ''Schedules of compliance'' and 40 CFR 122.47).[50] Any such compliance schedule must include a final effluent limit based on the applicable highest attainable condition and must require compliance with the permit's WQBEL ''as soon as possible.'' If the compliance schedule exceeds one year, the permitting authority must include interim requirements and the dates for their achievement.

For example, if the underlying criterion requires an NPDES WQBEL of 1 mg/L for pollutant X, but the permittee's current effluent quality is at 10 mg/L, the state or authorized tribe could adopt the highest attainable condition of 3 mg/L to be achieved at the end of 15 years and obtain EPA approval if they have met the requirements of § 131.14. Once approved by EPA, the highest attainable condition of 3 mg/L is the applicable

[46] For this reason, states and authorized tribes are not required to adopt specific authorizing provisions into state or authorized tribal law before using WQS variances consistent with the federal regulation.

[47] See 78 FR 54533 (September 4, 2013).

[48] EPA has developed a list of Frequently Asked Questions addressing when a multiple discharger WQS variance may be appropriate and how a state or authorized tribe can develop a credible rationale for this type of WQS variance. *Discharger-specific Variances on a Broader Scale: Developing Credible Rationales for Variances that Apply to Multiple Dischargers,* EPA–820–F–13–012, March 2013.

[49] As an alternative to a permit compliance schedule, there may be other available mechanisms such as an administrative order.

[50] 78 FR 54532 (September 4, 2013).

criterion for purposes of deriving the NPDES WQBEL and developing the NPDES permit limits and requirements for the facility covered by the WQS variance. For this example, assume the permitting authority is developing the NPDES permit without allowing dilution (*i.e.,* applying the criterion end of pipe). In this case, the facility will need 15 years to implement the activities necessary to meet the limit based on the 3 mg/L. The permitting authority could include a 15 year compliance schedule with a final effluent limit based on 3 mg/L and an enforceable sequence of actions that the permitting authority determines are necessary to achieve the final effluent limit. As discussed later in this section, the documentation that a state or authorized tribe provides to EPA justifying the term of the WQS variance informs the permitting authority when determining the enforceable sequence of actions.

This rule requires states and authorized tribes to provide a quantifiable expression of the highest attainable condition. This requirement is an important feature of a WQS variance that facilitates development of NPDES permit limits and requirements and allows states, authorized tribes, and the public to track progress. This rule provides states and authorized tribes the flexibility to express the highest attainable condition as numeric pollutant concentrations in ambient water, numeric effluent conditions, or other quantitative expressions of pollutant reduction, such as the maximum number of combined sewer overflows that is achievable after implementation of a long-term control plan or a percent reduction in pollutant loads.

The final rule at § 131.14(b)(1)(ii) provides states and authorized tribes with different options to specify the highest attainable condition depending on whether the WQS variance applies to a specific discharger(s) or to a water body or waterbody segment. For a discharger(s)-specific WQS variance, the rule allows states and authorized tribes to express the highest attainable condition as an interim criterion without specifying the designated use it supports. EPA received comments suggesting that identifying both an interim use and interim criterion for a WQS variance is unnecessary. EPA agrees that the level of protection afforded by meeting the highest attainable criterion in the immediate area of the discharge(s) results in the highest attainable interim use at that location. Therefore, the highest attainable interim criterion is a reasonable surrogate for both the highest attainable interim use and interim criterion when the WQS variance applies to a specific discharger(s). For similar reasons, as explained in the preamble to the proposed rule, states and authorized tribes may choose to articulate the highest attainable condition as the highest attainable interim effluent condition.[51] Neither of these options, however, is appropriate for a WQS variance applicable to a water body or waterbody segment. Such a WQS variance impacts the water body or waterbody segment in a manner that is similar to a change in a designated use and, therefore, must explicitly articulate the highest attainable condition as the highest attainable interim designated use and interim criterion. A state's or authorized tribe's assessment of the highest attainable interim designated use and interim criterion for this type of WQS variance necessarily involves an evaluation of all pollutant sources.

Where the state or authorized tribe cannot identify an additional feasible pollutant control technology, this rule provides options for articulating the highest attainable condition using the greatest pollutant reduction achievable with optimization of currently installed pollutant control technologies and adoption and implementation of a Pollutant Minimization Program (PMP). The rule makes this option available for a WQS variance that applies to a specific discharger(s) as well as a WQS variance applicable to a water body or waterbody segment. EPA defines PMP at § 131.3(p) as follows: ''*Pollutant Minimization Program,* in the context of § 131.14, is a structured set of activities to improve processes and pollutant controls that will prevent and reduce pollutant loadings . . . .'' Pollutant control technologies represent a broad set of pollutant reduction options, such as process or raw materials changes and pollution prevention technologies, practices that reduce pollutants prior to entering the wastewater treatment system, or best management practices for restoration and mitigation of the water body. This option requires states and authorized tribes to adopt the PMP along with other elements that comprise the highest attainable condition. As part of the applicable WQS, the permitting authority must use the PMP (along with the quantifiable expression of the ''greatest pollutant reduction achievable'') to derive NPDES permit limits and requirements.

As discussed later in this section, states and authorized tribes must reevaluate WQS variances on a regular and predictable schedule. To ensure that a WQS variance reflects the highest attainable condition throughout the WQS variance term, states and authorized tribes must adopt a provision specifying that the applicable interim WQS shall be either the highest attainable condition initially adopted, or a higher attainable condition later identified during any reevaluation. The rule requires such a provision only for WQS variances longer than five years. This provision must be self-implementing so that if any reevaluation yields a more stringent attainable condition, that condition becomes the applicable interim WQS without additional action. Upon permit reissuance, the permitting authority will base the WQBEL on the more stringent interim WQS consistent with the NPDES permit regulation at § 122.44(d)(vii)(A). Where the reevaluation identifies a condition less stringent than the highest attainable condition, the state or authorized tribe must revise the WQS variance consistent with CWA requirements and obtain EPA approval of the WQS variance before the permitting authority can derive a WQBEL based on that newly identified highest attainable condition.

Third, to ensure EPA has sufficient information to determine whether the WQS variance is consistent with EPA's WQS regulation, states and authorized tribes must provide documentation to justify why the WQS variance is needed, the term for the WQS variance, and the highest attainable condition. For a WQS variance to a designated use specified in CWA section 101(a)(2) and sub-categories of such uses, states and authorized tribes must demonstrate that the use and criterion are not feasible to attain on the basis of one of the factors listed in § 131.10(g) or on the basis of the new restoration-related factor in § 131.14(b)(2)(i)(A)(*2*). EPA added this new factor for when states and authorized tribes wish to obtain a WQS variance because they expect a time-limited exceedance of a criterion when removing a dam or during significant wetlands, lake, or stream reconfiguration/restoration efforts. EPA includes ''lake'' in the regulatory language for this factor, on the basis of public comments suggesting that the rule also apply to lake restoration activities. States and authorized tribes may only use this factor to justify the time necessary to remove the dam or the length of time in which wetland, lake, or stream restoration activities are actively on-going. Although such a WQS

[51] 78 FR 54534 (September 4, 2013).

variance might not directly impact an NPDES permittee or the holder of a federal license or permit, states and authorized tribes could rely on the WQS variance when deciding whether to issue a CWA section 401 certification in connection with an application for a federal license or permit. The central feature of CWA section 401 is the state or authorized tribe's ability to grant, grant with conditions, deny or waive certification for federally licensed or permitted activities that may discharge into navigable waters. Many states and authorized tribes rely on CWA section 401 certification to ensure that federal projects do not cause adverse water quality impacts. By adopting a WQS variance, the state or authorized tribe lays the groundwork for issuing a certification (possibly with conditions, as per CWA section 401(d)) that allows a federal license or permit to be issued. Without a WQS variance, the state or authorized tribe's only options might be to deny certification which prevents issuance of the federal license or permit, or waive certification and allow the license or permit to be issued without conditions. If a state or authorized tribe issues a CWA certification based on a WQS variance, EPA recommends that the state or tribe consider whether to include the applicable interim requirements from the WQS variance as conditions of its certification.

For WQS variances to non-101(a)(2) uses, this rule specifies that states and authorized tribes must document and submit a use and value demonstration consistent with § 131.10(a) (see section II.B for additional discussion on use and value demonstrations). EPA's proposed rule would have required that a ''[s]tate must submit a demonstration justifying the need for a WQS variance'' and the preamble to the proposed rule noted that the demonstrations for uses specified in CWA section 101(a)(2) and non-101(a)(2) may differ. EPA received comments questioning the requirements for WQS variances to non-101(a)(2) uses and this rule explicitly makes clear that the documentation requirement for removing or adopting new or revised designated uses in §§ 131.10(a) and 131.6 also applies to non-101(a)(2) WQS variances. States and authorized tribes may also use the factors at § 131.14(b)(2)(i)(A) to justify how their consideration of the use and value appropriately supports the WQS variance.

States and authorized tribes must justify the term of any WQS variance on the basis of the information and factors evaluated to justify the need for the WQS variance. States and authorized tribes must also describe the pollutant control activities, including those identified through a PMP, that the state or authorized tribe anticipates implementing throughout the WQS variance term to achieve the highest attainable condition. During its review of the WQS variance, EPA will evaluate this description of activities which must reflect only the time needed to plan activities, implement activities, or evaluate the outcome of activities. Explicitly requiring the state or authorized tribe to document the relationship between the pollutant control activities and the WQS variance term ensures that the term is only as long as necessary to achieve the highest attainable condition and that water quality progress is achieved throughout the entire WQS variance term. The pollutant control activities specified in the supporting documentation serve as milestones for the WQS variance and inform the permitting authority when developing the enforceable terms and conditions of the NPDES permit necessary to implement the WQS variance, as required at 40 CFR 122.44(d)(1).

The degree of certainty associated with pollutant control activities and pollutant reductions will inform EPA's review and evaluation of whether the state's or authorized tribe's submission sufficiently justifies the need and the term of WQS variances. There can be instances where a state or authorized tribe has information to determine that the underlying designated use and criterion cannot be attained for a particular period of time, but does not have sufficient information to identify the highest attainable condition that would be achieved in that same period of time. In such cases, EPA anticipates that a state or authorized tribe will adopt a shorter WQS variance reflecting the highest attainable condition that is supported by the available information, including the pollutant control activities identified in the WQS submission. States and authorized tribes could then determine the appropriate mechanism to continue making progress towards the underlying designated use and criterion, which may include adoption of subsequent WQS variances as more data are gathered and additional pollutant control activities are identified.

This rule also includes two additional requirements to ensure states and authorized tribes use all relevant information to establish a WQS variance for a water body or waterbody segment. States and authorized tribes must identify and document cost-effective and reasonable BMPs for nonpoint sources, and provide for public notice and comment on that documentation. States and authorized tribes must also document whether and to what extent BMPs were implemented and the water quality progress achieved during the WQS variance term to justify a subsequent WQS variance. Nonpoint sources can have a significant bearing on whether the designated use and associated criteria for the water body are attainable. It is essential for states and authorized tribes to consider how controlling these sources through application of cost-effective and reasonable BMPs could impact water quality before adopting such a WQS variance. Doing so informs the highest attainable condition, the duration of the WQS variance term, and the state's or authorized tribe's assessment of the interim actions that may be needed to make water quality progress.

Fourth, to ensure that states and authorized tribes thoroughly reevaluate each WQS variance with a term longer than five years, this rule requires states and authorized tribes to specify, in the WQS variance, the reevaluation frequency and how they plan to obtain public input on the reevaluation. Additionally, they must submit the results of the reevaluation to EPA within 30 days of completion. States and authorized tribes may specify the frequency of reevaluations to coincide with other state and authorized tribal processes (*e.g.,* WQS triennial reviews or NPDES permit reissuance), as long as reevaluations occur at least every five years. Although EPA does not review and approve or disapprove the results of a WQS variance reevaluation, the results could inform whether the Administrator exercises his or her discretion to determine that new or revised WQS are necessary. The rule also requires states and authorized tribes to adopt a provision specifying that the WQS variance will no longer be the applicable WQS for CWA purposes if they do not conduct the required reevaluation or do not submit the results of the reevaluation within 30 days of completion. If a state or authorized tribe does not reevaluate the WQS variance or does not submit the results to EPA within 30 days, the underlying designated use and criterion become the applicable WQS for the permittee(s) or water body specified in the WQS variance without EPA, states or authorized tribes taking an additional WQS action. In such cases, subsequent NPDES WQBELs for the associated permit must be based on the underlying designated use and criterion rather than the highest attainable condition, even if the originally specified variance term has not expired. As discussed earlier in

this section, states and authorized tribes must also adopt a provision that ensures the WQS variance reflects the highest attainable condition initially adopted or any more stringent highest attainable condition identified during a reevaluation that is applicable throughout the WQS variance term.

EPA proposed a maximum allowable WQS variance term of 10 years to ensure that states and authorized tribes reevaluate long-term WQS challenges at least every 10 years before deciding whether to continue with a WQS variance. EPA explained in the preamble to the proposed rule that the purpose of this maximum WQS variance term was as follows: ''Establishing an expiration date will ensure that the conditions of a [WQS] variance will be thoroughly reevaluated and subject to a public review on a regular and predictable basis to determine (1) whether conditions have changed such that the designated use and criterion are now attainable; (2) whether new or additional information has become available to indicate that the designated use and criterion are not attainable in the future (*i.e.,* data or information supports a use change/refinement); or (3) whether feasible progress is being made toward the designated use and criterion and that additional time is needed to make further progress (*i.e.,* whether a [WQS] variance may be renewed).'' [52]

Some commenters suggested that 10 years is too long and does not provide adequate assurance that the state or authorized tribe will periodically reevaluate a WQS variance in a publicly transparent manner. Other commenters suggested that 10 years is too short because states often adopt WQS variances through conventional rulemaking processes and that such a maximum term would result in unnecessary rulemaking burden where it is widely understood that long-term pollution challenges require more time to resolve. A 10-year maximum could also discourage the use of WQS variances.

In response, EPA concludes that establishing specific reevaluation requirements for WQS variances longer than five years is the best way to achieve EPA's policy objective of active, thorough, and transparent reevaluation by states and authorized tribes while minimizing rulemaking burden. The reevaluation requirements in this rule eliminate the need to specify a maximum WQS variance term because they ensure the highest attainable condition is always the applicable WQS throughout the WQS variance term, thus driving incremental improvements toward the underlying designated use. These requirements also ensure the public has an opportunity to provide input throughout the WQS variance term. EPA chose five years as the maximum interval between reevaluations because five years is the length of a single NPDES permit cycle, allowing the reevaluation to inform the permit reissuance process. Although this rule does not specify a maximum WQS variance term, states and authorized tribes must still identify the WQS variance term and provide documentation demonstrating that the term is only as long as necessary to achieve the highest attainable condition. EPA will use this information to determine whether to approve or disapprove the WQS variance submitted for review, based on the requirements in § 131.14.

WQS variances remain subject to the triennial review and public participation requirements specified in § 131.20. The final rule requirements ensure that the public has the opportunity to work with states and authorized tribes in a predictable and timely manner to search for new or updated data and information specific to the WQS variance that could indicate a more stringent highest attainable condition exists than the state or authorized tribe originally adopted. ''New or updated data and information'' include, but are not limited to, new information on pollutant control technologies, changes in pollutant sources, flow or water levels, economic conditions, and BMPs that impact the highest attainable condition. Where there is an EPA-approved WQS variance, the permitting authority must refer to the reevaluation results when reissuing NPDES permits to ensure the permit implements any more stringent applicable WQS that the reevaluation provides. States and authorized tribes can facilitate this coordination by publishing and making accessible the results of reevaluations.

While this rule only requires reevaluations of WQS variances with a term longer than five years, states and authorized tribes must review all WQS variances during their triennial review. If a state or authorized tribe synchronizes a WQS variance reevaluation with permit reissuance, the reevaluation must occur on schedule even if there is a delay in the permit reissuance.

EPA previously promulgated specific variance procedures when EPA established federal WQS for Kansas (§ 131.34(c)) and Puerto Rico (§ 131.40(c)). To provide national consistency, this rule authorizes the Regional Administrator to grant WQS variances in Kansas and Puerto Rico in accordance with the provisions of § 131.14.

What did EPA consider?

In addition to considering the option EPA proposed, EPA considered options that provide a maximum WQS variance term more than or less than 10 years. EPA rejected these options because retaining a maximum term of any duration does not accomplish EPA's goal of a balanced approach that ensures both flexibility and accountability as effectively as requiring periodic reevaluations of the WQS variance. Additionally, on the basis of commenters' suggestions, EPA considered requiring identification and documentation of cost-effective and reasonable BMPs for nonpoint sources for all WQS variances and not just for WQS variances applicable to a water body or waterbody segment. To achieve EPA's policy objectives, EPA chose instead to add a requirement for all WQS variances that states and authorized tribes describe the pollutant control activities to achieve the highest attainable condition (see § 131.14(b)(2)(ii)).

What is EPA's position on certain public comments?

EPA received comments that suggested confusion between WQS variances and NPDES permit compliance schedules. WQS variances can be appropriate to address situations where it is known that the designated use and criterion are unattainable today, but progress could be made toward attaining the designated use and criterion. Typically, a permit authority grants a permit compliance schedule when the permittee needs additional time to modify or upgrade treatment facilities in order to meet its WQBEL based on the applicable WQS (*i.e.,* designated use and criterion). After the effective date of this rule, a permit authority could also grant a permit compliance schedule when the permittee needs additional time to meet its WQBEL based on the applicable WQS variance (*i.e.,* highest attainable condition) such that a schedule and resulting milestones will lead to compliance with the effluent limits derived from the WQS variance ''as soon as possible.'' If a WQS variance is about to expire and a state or authorized tribe concludes the underlying designated use is now attainable, it is not appropriate for the state or authorized tribe to adopt a subsequent

[52] 78 FR 54536 (September 4, 2013).

WQS variance. However, if a permittee is unable to immediately meet a WQBEL consistent with the now attainable WQS, and the permitting authority can specify an enforceable sequence of actions that would result in achieving the WQBEL, the permitting authority could grant a permit compliance schedule consistent with § 122.47. If the underlying designated use is still not attainable, the state or authorized tribe can adopt a subsequent WQS variance.

EPA also received comments questioning how a WQS variance works with a TMDL and CWA section 303(d) impaired waters listing(s). These comments suggested the proposed rule creates a conflict in how the NPDES permitting regulation requires permitting authorities to develop WQBELs. Section 122.44(d)(1)(vii)(A) specifies that all WQBELs in an NPDES permit must derive from and comply with all applicable WQS. Section 122.44(d)(1)(vii)(B) specifies that the WQBEL of any NPDES permit must be consistent with the assumptions and requirements of any *available* (emphasis added) waste load allocation (WLA) in an EPA-approved or EPA-established TMDL. Because the WLA of the TMDL is based on the underlying designated use and criterion (and not the highest attainable condition established in the WQS variance), then the WLA in the TMDL is not available to the permittee covered by the WQS variance for NPDES permitting purposes while the WQS variance is in effect. The permitting authority must develop WQBELs for the permittees subject to the WQS variance based on the interim requirements specified in the WQS variance. Upon termination of the WQS variance, the NPDES permit must again derive from and comply with the underlying designated use and criterion and be consistent with the assumptions and requirements of the WLA (as it is again ''available'').

Some commenters questioned what would happen if a state or authorized tribe does not coordinate a WQS variance term with the expiration date of an NPDES permit. If information is available to the permitting authority indicating that the term of a WQS variance will end during the permit cycle, the permitting authority must develop two WQBELs: one WQBEL based on the highest attainable condition applicable throughout the WQS variance term, and another WQBEL based on the underlying designated use and criterion to apply after the WQS variance terminates. Including two sets of WQBELs that apply at different time periods in the permit ensures that the permit will derive from and comply with WQS throughout the permit cycle. If the state or authorized tribe adopts and EPA approves a subsequent WQS variance during the permit term to replace an expiring WQS variance, the new WQS variance would constitute ''new regulations'' pursuant to § 122.62(a)(3)(i), and the permitting authority could modify the permit to derive from and comply with the subsequent WQS variance. At the request of the permittee, the permitting authority can also utilize the Permit Actions condition specified in § 122.41(f) to modify a permit and revise the WQBEL to reflect the new WQS variance.

Some commenters questioned whether states and authorized tribes must modify WQS variances that states and authorized tribes adopted before the effective date of the final rule. States and authorized tribes must meet the requirements of this rule on the effective date of the final rule. As with any WQS effective for CWA purposes, WQS variances are subject to the triennial review requirements at § 131.20(a). When a state or authorized tribe reviews a WQS variance that was adopted before § 131.14 becomes effective, EPA strongly encourages the state or authorized tribe to ensure the WQS variance is consistent with this rule. EPA encourages the public to engage in triennial reviews and request revisions to WQS variances that states and authorized tribes adopted and EPA approved prior to the effective date of the final rule so that the public can provide information supporting the need to modify the WQS variances. Some states and authorized tribes may also have adopted binding WQS variance policies and/or procedures. Such policies and procedures are not required by EPA's regulation before utilizing WQS variances, however, where state and authorized tribes have them and they are inconsistent with this rule, those states and authorized tribes must revise such policies and/or procedures prior to, or simultaneously with, adopting the first WQS variance after the effective date of the final rule.

A state or authorized tribe may be able to streamline its WQS variance process in several ways. As discussed earlier in this section, one way is to adopt multiple discharger WQS variances. In justifying the need for a multiple discharger WQS variance, states and authorized tribes should account for as much individual permittee information as possible. A permittee that cannot qualify for an individual WQS variance cannot qualify for a multiple discharger WQS variance. EPA recommends that states and authorized tribes provide a list of the dischargers covered under the WQS variance on their Web sites or other publicly available sources of state or authorized tribal information, particularly when using multiple discharger WQS variances.

A second way is to adopt an administrative procedure that fulfills the WQS submittal and review requirements and specifies that if the state or authorized tribe follows the procedure, the WQS variance is legally binding under state or tribal law. A state or authorized tribe could submit such an administrative procedure for a WQS variance, as a rule, to EPA for review and approval under § 131.13. Once approved, the state or authorized tribe can follow this administrative procedure and develop a final document for each WQS variance. Because the state or tribal law specifies this WQS variance document is legally binding, there is no need for the state or authorized tribe to do a separate rulemaking for each individual WQS variance. Rather, the state or authorized tribe could submit each resulting WQS variance document, with an Attorney General or appropriate tribal legal authority certification, and EPA could take action under CWA section 303(c).

Some commenters questioned how this rule affects states and authorized tribes under the 1995 Great Lakes Water Quality Guidance (GLWQG) [53] because those requirements are different than the WQS variance requirements in the final rule. For waters in the Great Lakes basin, states and authorized tribes must meet the requirements of both 40 CFR parts 131 and 132. The practical effect of this requirement is that, where regulations in 40 CFR parts 131 and 132 overlap, the more stringent regulation applies. In some cases, the flexibilities and requirements in the national rule will not be applicable to waters in the Great Lakes basin. For example, the GLWQG limits any WQS variance to a maximum term of five years (with the ability to obtain a subsequent WQS variance). Therefore, any WQS variance on waters that are subject to the GLWQG cannot exceed five years even though the final rule in 40 CFR part 131 does not specify a maximum term. On the other hand, because GLWQG WQS variances cannot exceed five years, the requirements in the final rule that pertain to conducting reevaluations (for WQS variances greater than five years) are not applicable.

[53] See 60 FR 15366 (March 23, 1995); 40 CFR part 132.

Finally, some commenters questioned the level of ''scientific rigor'' required for a WQS variance as compared to a UAA required for changes to 101(a)(2) uses. Section 40 CFR 131.5(a)(4) provides that EPA's review under section 303(c) involves a determination of whether the state's or authorized tribe's ''standards which do not include the uses specified in section 101(a)(2) of the Act are based upon appropriate technical and scientific data and analyses. . . .'' Because WQS variances are time-limited designated uses and criteria, this requirement applies to WQS variances. States and authorized tribes must adopt WQS variances based on appropriate technical and scientific data and analyses. Therefore, the level of rigor required for a WQS variance is no different than for a designated use change. That said, the appropriate technical and scientific data required to support a designated use change and WQS variance can vary depending on the complexity of the specific circumstances. EPA recognizes that the data and analyses often needed to support adoption of a WQS variance could be less complex and require less time and resources compared to removing a designated use because many WQS variances evaluate only one parameter for a single permittee for a limited period of time. The level of effort a state or authorized tribe needs to devote to a WQS variance will in large part be determined by the complexity of the water quality problem the state or authorized tribe seeks to address.

F. Provisions Authorizing the Use of Schedules of Compliance for WQBELs in NPDES Permits

What does this rule provide and why?

In 1990, EPA concluded that before a permitting authority can include a compliance schedule for a WQBEL in an NPDES permit, the state or authorized tribe must affirmatively authorize its use in its WQS or implementing regulations.[54] EPA approval of the state's or authorized tribe's permit compliance schedule authorizing provision as a WQS ensures that any NPDES permit WQBEL with a compliance schedule derives from and complies with applicable WQS as required by § 122.44(d)(1)(vii)(A). Because the state's or authorized tribe's approved WQS authorize extended compliance, any delay in compliance with a WQBEL pursuant to an appropriately issued permit compliance schedule is consistent with the statutory implementation timetable in CWA section 301(b)(1)(C).

The use of legally-authorized permit compliance schedules by states and authorized tribes provides needed flexibility for many dischargers undergoing facility upgrades and operational changes designed to meet WQBELs in their NPDES permits. This flexibility will become increasingly important as states and authorized tribes adopt more stringent WQS, including numeric nutrient criteria, and address complex water quality problems presented by emerging challenges like climate change.

Some states have adopted compliance schedule authorizing provisions but have not submitted them to EPA for approval as WQS pursuant to CWA section 303(c). Other states have not yet adopted compliance schedule authorizing provisions. A permit could be subject to legal challenge where a state and authorized tribe decide to authorize permit flexibility using permit compliance schedules, but do not have a compliance schedule authorizing provision approved by EPA as a WQS.

Section 131.15 in this final rule requires that if a state or authorized tribe intends to authorize the use of compliance schedules for WQBELs in NPDES permits, it must first adopt a permit compliance schedule authorizing provision. The authorizing provision must be consistent with the CWA and is subject to EPA review and approval as a WQS. This rule adds § 131.5(a)(5) to explicitly specify that EPA has the authority to determine whether any provision authorizing the use of schedules of compliance for WQBELs in NPDES permits adopted by a state or authorized tribe is consistent with the requirements at § 131.15. This rule also includes a number of non-substantive editorial changes.

By expressly requiring that the state or authorized tribe adopt a permit compliance schedule authorizing provision, the first sentence of the final regulation at § 131.15 ensures that the state or authorized tribe has expressly made a determination that, under appropriate circumstances, it can be lawful to delay permit compliance. Formal adoption as a legally binding provision ensures public transparency and facilitates public involvement.

Some commenters expressed concern that the proposed regulatory language regarding state and authorized tribal adoption could be interpreted to refer to permit compliance schedules themselves, rather than their authorizing provisions. To address that concern, the final rule refers to ''the use of'' schedules of compliance. The phrase ''the use of'' indicates that the mere adoption of an authorizing provision, by itself, does not extend the date of compliance with respect to any specific permit's WQBEL; rather, its adoption allows the state or authorized tribe *to use* schedules of compliance, as appropriate, on a case-by-case basis in individual permits.

The second sentence of the final regulation at § 131.15 provides that states' and authorized tribes' authorizing provisions must be consistent with the CWA and are WQS subject to EPA review and approval. By incorporating the authorizing provision into the state's or authorized tribe's approved WQS, the state or authorized tribe ensures that a permitting authority can then legally issue compliance schedules for WQBELs in NPDES permits that are consistent with CWA section 301(b)(1)(C). Only the permit compliance schedule authorizing provisions are WQS subject to EPA approval; individual permit compliance schedules are not. The final rule provides flexibility for a state or authorized tribe to include the authorizing provision in the part of state or tribal regulations where WQS are typically codified, in the part of state or tribal regulations dealing with NPDES permits, or in other parts of the state's or authorized tribe's implementing regulations. Regardless of where the authorizing provision is codified, as long as the provision is legally binding, EPA will take action on it under CWA section 303(c). If a state or authorized tribe has already adopted an authorizing provision that is consistent with the CWA, it need not readopt the provision for purposes of satisfying the final rule. Instead, the state or authorized tribe can submit the provision to EPA with an Attorney General or appropriate tribal legal authority certification. Moreover, consistent with § 131.21(c), any permit compliance schedule authorizing provision that was adopted, effective, *and submitted* to EPA before May 30, 2000, is applicable for purposes of § 131.15.

This final rule does not change any permit compliance schedule requirements at § 122.47.

Other judicial and administrative mechanisms issued pursuant to other authorities, such as an enforcement order issued by a court, can delay the need for compliance with WQBELs. This rule does not address those other mechanisms.

What did EPA consider?

EPA considered finalizing § 131.15, as proposed. Given the comments

[54] *In the Matter of Star-Kist Caribe, Inc.* 3 EAD 172 (April 16, 1990).

indicating that ambiguity in the proposed language could lead to confusion over whether the requirements to adopt and submit for EPA approval applied directly to permit compliance schedules themselves, EPA did not select this option. Instead, EPA added clarifying language to address the commenters' concern and streamlined the text of the proposed rule without making substantive changes. EPA also considered foregoing the addition of § 131.15. Many commenters, however, supported adding § 131.15 as a useful clarification of the need and process for states and authorized tribes to adopt compliance schedule authorizing provisions.

What is EPA's position on certain public comments?

Some commenters said that the following proposed regulatory language—''authorize schedules of compliance *for water quality-based effluent limits (WQBELs)* in NPDES permits''—could have the effect of narrowing the universe of NPDES permits and permit requirements for which permitting authorities can include permit compliance schedules. The regulation does not narrow that universe, nor does it preclude other appropriate uses of permit compliance schedules as provided for in § 122.47. The new § 131.15 requirements only apply to the authorization of compliance schedules *for WQBELs* in NPDES permits. Such WQBELs are designed to meet WQS established by the state or authorized tribe and approved by EPA under CWA section 303(c).[55] Adding this new provision to the WQS regulation will ensure that the state or authorized tribe takes the necessary steps to ensure that any NPDES permit with a permit compliance schedule for a WQBEL is consistent with the state's or authorized tribe's applicable WQS. The requirement in § 131.15 does not preclude, or apply to, use of compliance schedules for permit limitations or conditions that are not WQBELs. A permitting authority can grant a permit compliance schedule for non-WQBEL NPDES permit limits or conditions without an EPA-approved authorizing provision, provided the permit compliance schedule is consistent with the CWA, EPA's permitting regulation, especially §§ 122.2 and 122.47, and any applicable state or tribal laws and regulations. Permitting authorities can include such permit compliance schedules without an EPA-approved permit compliance schedule authorizing provision because such limits and conditions are not themselves designed to implement the state's or authorized tribe's approved WQS.

G. Other Changes

What does this rule provide and why?

Regulatory provisions can only be effective if they are clear and accurate. Even spelling and grammar mistakes, and inconsistent terminology can cause confusion. This rule, therefore, corrects these types of mistakes and inconsistencies in the following 11 regulatory provisions: §§ 131.2, 131.3(h), 131.3(j), 131.5(a)(1), 131.5(a)(2), 131.10(j), 131.10(j)(2), 131.11(a)(2), 131.11(b), 131.12(a)(2), and 131.20(b). The rule finalizes eight of the provisions, as proposed. However, based on public comments, EPA revised how it is correcting §§ 131.5(a)(2), 131.12(a)(2), and 131.20(b). EPA notes that in correcting these minor pre-existing errors, it did not re-examine the substance of these regulatory provisions. Thus EPA did not reopen these regulatory provisions.

With regard to the revision at § 131.5(a)(2), the final rule adds a reference to § 131.11 and ''sound scientific rationale'' to make the link clear. Commenters expressed concern that ''sound scientific rationale'' was an ambiguous and subjective point of reference and may interfere with the ability of states and authorized tribes to use narrative criteria. By linking the two regulatory sections, this rule makes clear that this provision does not contradict the requirements and flexibilities provided in § 131.11.

This rule at § 131.12(a)(2) correctly cites to the CWA language and makes no other changes. EPA proposed revising ''assure'' to ''ensure,'' however, the final rule does not include this change. Commenters raised the question of whether the revision changed the meaning of the provision. Although both ''assure'' and ''ensure'' mean ''to make sure,'' EPA recognizes that the context surrounding the word is important. While ''ensure'' is used in § 131.10(b), in this context, the states and authorized tribes can ''make sure'' their WQS meet the regulatory requirements. However, § 131.12(a)(2), addresses water quality, not WQS. While states and authorized tribes have control over their WQS, they do not have the same control over the resulting water quality as it can be affected by many other factors. So use of the word ''ensure'' would not be appropriate in this provision.

This rule clarifies four points related to public hearings. First, it clarifies that 40 CFR part 25 is EPA's public participation regulation that sets the minimum requirements for public hearings and removes the nonexistent citation to ''EPA's water quality management regulation (40 CFR 130.3(b)(6)).'' Second, it clarifies that holding one public hearing may satisfy the legal CWA requirement although states and authorized tribes may hold multiple hearings. The purpose of this revision is to provide consistency with the language of CWA section 303(c)(1) and § 131.20(a), not to create a requirement that states and authorized tribes must hold multiple hearings when reviewing or revising WQS. Third, EPA's corresponding change in § 131.5(a)(6) clarifies that EPA's authority in acting on revised or new WQS includes determining whether the state or authorized tribe has followed the ''applicable'' legal procedures. Applicable legal procedures include those required by the CWA and EPA's implementing regulations. In particular, states and authorized tribes must comply with the requirement in § 131.20(b) to hold a public hearing in accordance with 40 CFR part 25 when reviewing or revising WQS. The purpose of the § 131.20(b) requirements is to implement the CWA and provide an opportunity for meaningful public input when states or authorized tribes develop WQS, which is an important step to ensure that adopted WQS reflect full consideration of the relevant issues raised by the public. Finally, § 131.20(b) and EPA's corresponding deletion of § 131.10(e) clarify that a public hearing is required when (1) reviewing WQS per § 131.20(a); (2) when revising WQS as a result of reviewing WQS per § 131.20(a); and (3) whenever revising WQS, regardless of whether the revision is a result of triennial review per § 131.20(a). EPA reviewed the use of the phrase ''an opportunity for a public hearing'' used in § 131.10(e) and found that such language contradicts the CWA and § 131.20(b). Therefore, EPA is deleting this provision as a conforming edit to its clarifications in § 131.20(b). As suggested by commenters, EPA replaced its proposed language of ''reviewing or revising'' to ''reviewing as well as when revising'' to make clear that public participation is required in all of these circumstances.

What is EPA's position on certain public comments?

A commenter requested that EPA further revise the regulation to allow states and authorized tribes to gather public input in formats other than public hearings (*e.g.*, public meetings, webinars). Although EPA acknowledges

[55] 40 CFR 122.44(d)(1); 122.44(d)(1)(vii)(A).

the challenges that states and authorized tribes may experience when planning and conducting a public hearing, the requirement to hold hearings for the purposes of reviewing, and as appropriate, modifying and adopting WQS comes directly from CWA section 303(c)(1). Further, meaningful involvement of the public and intergovernmental coordination with local, state, federal, and tribal entities with an interest in water quality issues is an important component of the WQS process. States and authorized tribes have discretion to use other outreach efforts in addition to fulfilling the requirement for a public hearing.

A ''public hearing'' may mean different things to different people. At a minimum, per § 131.20(b), states and authorized tribes are required to follow the provisions of state or tribal law and EPA's public participation regulations at 40 CFR part 25. EPA's public participation regulation, at 40 CFR 25.5, sets minimum requirements for states and authorized tribes to publicize a hearing at least 45 days prior to the date of the hearing; provide to the public reports, documents, and data relevant to the discussion at the public hearing at least 30 days before the hearing; hold the hearing at times and places that facilitate attendance by the public; schedule witnesses in advance to allow maximum participation and adequate time; and prepare a transcript, recording, or other complete record of the hearing proceedings. See 40 CFR 25.5 for the actual list of federal public hearing requirements. State and tribal law may include additional requirements for states and authorized tribes to meet when planning for and conducting a hearing. In addition to meeting the requirements of state and tribal law and 40 CFR part 25, states and authorized tribes may also choose to gather public input using other formats, such as public meetings and webinars.

III. Economic Impacts on State and Authorized Tribal WQS Programs

EPA evaluated the potential incremental administrative burden and cost that may be associated with the final rule, beyond the burden and cost of the WQS regulation already in place. EPA's estimate is higher than the estimate of the proposed rule for two reasons unrelated to any substantive change in requirements. First, EPA obtained more precise estimates of burden and costs. EPA received many comments suggesting that EPA underestimated the burden and cost of the proposed rule. States specifically requested to meet with EPA to provide additional information for EPA to consider. EPA engaged the states and incorporated the information provided into the final economic analysis. The higher estimate is also partly due to EPA using known data to extrapolate burden and costs to states, territories and authorized tribes where data were unavailable. EPA describes the method of extrapolation in detail in the full economic analysis available in the docket of the final rule. EPA's economic analysis focuses on the potential administrative burden and cost to all 50 states, the District of Columbia, five territories, the 40 authorized tribes with EPA-approved WQS, and to EPA. While this rule does not establish any requirements directly applicable to regulated point sources or nonpoint sources of pollution, EPA acknowledges that this rule may result in indirect costs to some regulated entities as a result of changes to WQS that states and authorized tribes adopt based on the final rule. EPA is unable to quantify indirect costs and benefits since it cannot anticipate precisely how the rule will be implemented by states and authorized tribes and because of a lack of data. States and authorized tribes always have the discretion to adopt new or revised WQS independent of this final rule that could result in costs to point sources and nonpoint sources. EPA's economic analysis and an explanation for how EPA derived the cost and burden estimates are documented in the *Economic Analysis for the Water Quality Standards Regulatory Revisions (Final Rule)* and can be found in the docket for this rule.

EPA assessed the potential incremental burden and cost of this final rule using the same basic methodology used to assess the potential incremental burden and cost of EPA's proposed rule, including: (1) Identifying the elements of the final rule that could potentially result in incremental burden and cost; (2) estimating the incremental number of labor hours states and authorized tribes may need to allocate in order to comply with those elements of the final rule; and (3) estimating the cost associated with those additional labor hours.

EPA identified four areas where differences between the proposed and final rules affected burden and cost estimates. First, when states and authorized tribes submit the results of triennial reviews to EPA, they must provide an explanation when not adopting new or revised water quality criteria for parameters for which EPA has published new or updated CWA section 304(a) criteria recommendations. Second, when developing or revising antidegradation implementation methods and when deciding which waters would receive Tier 2 antidegradation protection under a water body-by-water body approach, states and authorized tribes must provide an opportunity for public involvement. States and authorized tribes must also document and keep in the public record the factors they considered when making those decisions. Third, the final rule no longer includes a maximum WQS variance duration of 10 years and thus eliminates the burden and cost associated with renewing a WQS variance when the state or authorized tribe can justify a longer term. Fourth, the final rule requires states and authorized tribes to proactively reevaluate WQS variances that have a term longer than five years no less frequently than every five years and to submit the results of each reevaluation to EPA within 30 days of completion. EPA also revised certain economic assumptions based on additional information obtained independently by EPA and in response to stakeholder feedback.

The potential incremental burden and cost of the final rule include five categories: (1) One-time burden and cost associated with state and authorized tribal rulemaking activities when some states and authorized tribes may need to adopt new or revised provisions into their WQS (*e.g.*, review currently adopted water quality standards to determine if the new requirements necessitate revisions, such as modifying antidegradation policy, revising WQS variance procedures if the state or authorized tribe has chosen to adopt such a procedure, or adopting a permit compliance schedule authorizing provision); (2) recurring burden and cost associated with removing uses specified in CWA section 101(a)(2) because states and authorized tribes must identify the HAU; (3) recurring burden and cost associated with triennial reviews whereby states and authorized tribes must prepare and submit an explanation when not adopting new or revised water quality criteria for parameters for which EPA has published new or updated CWA section 304(a) criteria recommendations; (4) recurring burden and cost associated with antidegradation requirements, including providing the opportunity for public involvement when developing and subsequently revising antidegradation implementation methods; providing the opportunity for public involvement when deciding which waters will receive Tier 2 antidegradation protection when using a water body-by-water body approach; documenting and

keeping in the public record the factors the state or authorized tribe considered when deciding which waters will receive Tier 2 antidegradation protection; and performing/evaluating more extensive and a greater number of antidegradation reviews; and (5) recurring burden and cost associated with developing and documenting WQS variances for submission to EPA, and reevaluating WQS variances with a term longer than five years no less frequently than every five years. EPA did not estimate potential cost savings associated with a provision in the final rule that a UAA is not required when removing a non-101(a)(2) use because states and authorized tribes continue to have the discretion to conduct a UAA when removing such uses.

Estimates of the potential incremental burden and cost of this final rule are summarized in the following tables.

SUMMARY OF POTENTIAL INCREMENTAL BURDEN AND COST TO STATES AND AUTHORIZED TRIBES

Provision	One-time activities			Recurring activities	
	Burden (hours)	Cost (2013$ millions)	Annualized cost (2013$ millions/year) [1]	Burden (hours/year)	Cost (2013$ millions/year)
Rulemaking Activities	48,000–96,000	$2.35–$4.70	$0.16–$0.32	—	—
Designated Uses	—	—	—	2,250–4,500	$0.11–$0.22
Triennial Reviews	—	—	—	4,320–21,600	0.21–1.06
Antidegradation	6,450–12,900	0.32–0.63	0.02–0.04	48,015–143,400	2.37–7.02
WQS Variances	—	—	—	51,840–233,280	2.54–11.43
National Total	54,450–108,900	2.67–5.34	0.18–0.36	106,425–402,780	5.24–19.73

'—' = not applicable

Note: Individual annual cost estimates do not add to the total because of independent rounding.

[1] Although EPA expects one-time rulemaking activity costs to be incurred over an initial three-year period, it annualized costs at a three percent discount rate over 20 years for comparative purposes. See the *Economic Analysis for the Water Quality Standards Regulatory Revisions (Final Rule)* for the potential incremental burden and cost using a seven percent discount rate.

SUMMARY OF POTENTIAL INCREMENTAL BURDEN AND COST TO EPA [1]

One-time activities				Recurring activities		
Cost to the agency (2013$ million) [2]	Annualized cost to the agency (2013$ million per year) [3]	Burden		Cost to the agency (2013$ million per year) [6]	Burden	
		Hours [4]	FTEs [5]		Hours per year [4]	FTEs per year [5]
$0.53–$1.07	$0.04–$0.07	7,080–14,150	3.4–6.8	$1.05–$3.95	13,900–52,320	6.7–25.2

[1] Assuming that the incremental burden and costs to EPA are equal to 20 percent of the burden and costs to states and authorized tribes.

[2] $0.53 million ($2.67 million × 20 percent) to $1.07 million ($5.34 million × 20 percent)

[3] Although EPA expects these one-time costs to be incurred over an initial three-year period, the costs are annualized at three percent discount rate over 20 years for comparative purposes. See the *Economic Analysis for the Water Quality Standards Regulatory Revisions (Final Rule)* for the potential incremental burden and cost using a seven percent discount rate.

[4] Total costs to the Agency divided by hourly wage rate ($75.41 per hour).

[5] Burden hours to the Agency divided by hours worked by full-time equivalent (FTE) employees per year (2,080 hours per year).

[6] $1.05 million ($5.24 million × 20 percent) to $3.95 million ($19.73 million × 20 percent).

COMBINED SUMMARY OF POTENTIAL INCREMENTAL BURDEN AND COST TO STATES, AUTHORIZED TRIBES, AND EPA

Entities	One-time activities			Recurring activities	
	Burden (hours)	Cost (2013$ millions)	Annualized cost (2013$ million/year) [1]	Burden (hours/year)	Cost (2013$ millions/year)
States and Authorized Tribes	54,450–108,900	$2.67–$5.34	$0.18–$0.36	106,425–402,780	$5.24–$19.73
Agency	7,080–14,150	0.53–1.07	0.04–0.07	13,900–52,320	1.05–3.95
Total	61,530–122,050	3.20–6.40	0.22–0.43	120,325–455,100	6.29–23.68

Note: Individual annual cost estimates do not add to the total because of independent rounding.

[1] Although EPA expects states and authorized tribes to incur rulemaking costs over an initial three-year period, it annualized one-time costs at a three percent discount rate over 20 years for comparative purposes. See the *Economic Analysis for the Water Quality Standards Regulatory Revisions (Final Rule)* for the potential incremental burden and cost using a seven percent discount rate.

To estimate the total annual cost of this rule which includes both one-time cost and recurring cost, EPA annualized the one-time cost over a period of 20 years. Using a 20-year annualization period and a discount rate of three percent, EPA estimates the total annual cost for this final rule to range from $6.51 million per year ($0.22 million per year + $6.29 million per year) to $24.11 million per year ($0.43 million per year + $23.68 million per year).[56]

[56] See the *Economic Analysis for the Water Quality Standards Regulatory Revisions (Final Rule)* for the potential incremental burden and cost for this final rule using a seven percent discount rate.

EPA also evaluated the potential benefits associated with this rule. States and authorized tribes will benefit from these revisions because the WQS regulation will provide clear requirements to facilitate the ability of states and authorized tribes to effectively and legally utilize available regulatory tools when implementing and managing their WQS programs. Although associated with potential administrative burden and cost in some areas, this rule has the potential to partially offset these burdens by reducing regulatory uncertainty and increasing overall program efficiency. Use of these tools to improve establishment and implementation of state and authorized tribal WQS, as discussed throughout the preamble to this rule, provides incremental improvements in water quality and a variety of economic benefits associated with these improvements, including the availability of clean, safe, and affordable drinking water sources; water of adequate quality for agricultural and industrial use; and water quality that supports the commercial fishing industry and higher property values. Nonmarket benefits of this rule include greater recreational opportunities and the protection and improvement of public health. States, authorized tribes, stakeholders and the public will also benefit from the open public dialogue that results from the additional transparency and public participation requirements included in this rule. Because states and authorized tribes implement their own WQS programs, EPA could not reliably predict the control measures likely to be implemented and subsequent improvements to water quality, and thus could not quantify the resulting benefits.

IV. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *http://www2.epa.gov/laws-regulations/laws-and-executive-orders.*

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is a significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB recommendations have been documented in the docket. EPA prepared an analysis of the potential costs and benefits associated with this action. This analysis, *Economic Analysis for the Water Quality Standards Regulatory Revisions (Final Rule)*, is summarized in section III of the preamble and is available in the docket.

B. Paperwork Reduction Act (PRA)

The information collection activities in this rule have been submitted for approval to OMB under the PRA. The Information Collection Request (ICR) document that EPA prepared has been assigned EPA ICR number 2449.02. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here. The information collection requirements are not enforceable until OMB approves them.

The core of the WQS regulation, established in 1983, requires EPA to collect certain information from states and authorized tribes and has an approved ICR (EPA ICR number 988.11; OMB Control number 2040–0049). This rule requires states and authorized tribes to submit certain additional information to EPA. This mandatory information collection ensures EPA has the necessary information to review WQS and approve or disapprove consistent with the rule. The goals of the rule can only be fulfilled by collecting this additional information. Due to the nature of this rule, EPA assumes that all administrative burden associated with this rule, summarized in section III, is associated with information collection.

Respondents/affected entities: The respondents affected by this collection activity include the 50 states, the District of Columbia, five territories, and 40 authorized tribes that have EPA-approved WQS. The respondents are in NAICS code 92411 ''Administration of Air and Water Resources and Solid Waste Management Programs,'' formerly SIC code #9511.

Respondent's obligation to respond: The collection is required pursuant to CWA section 303(c), as implemented by the revisions to 40 CFR part 131.

Estimated number of respondents: A total of 96 governmental entities are potentially affected by the rule.

Frequency of response: The CWA requires states and authorized tribes to review their WQS at least once every three years and submit the results to EPA. In practice, some states and authorized tribes choose to submit revised standards for portions of their waters more frequently.

Total estimated burden: EPA estimates a total annual burden of 124,575–439,080 hours and 3,176 to 5,096 responses per year. Burden is defined at 5 CFR 1320.3(b). A ''response'' is an action that a state or authorized tribe would need to take in order to meet the information collection request provided in the rule (*e.g.*, documentation supporting a WQS variance). See also the ''Information Collection Request for Water Quality Standards Regulatory Revisions (Final Rule)'' in the docket for this rule.

Total estimated cost: Total estimated annual incremental costs range from $6.13 million to $21.51 million.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR part 9. When OMB approves this ICR, the Agency will announce the approval in the **Federal Register** and publish a technical amendment to 40 CFR part 9 to display the OMB control number for the approved information collection activities contained in this final rule.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. State and authorized tribal governments responsible for administering or overseeing water quality programs may be directly affected by this rulemaking, as states and authorized tribes may need to consider and implement new provisions, or revise existing provisions, in their WQS. Small entities, such as small businesses or small governmental jurisdictions, are not directly regulated by this rule. This rule will not impose any requirements on small entities.

D. Unfunded Mandates Reform Act (UMRA)

This rule does not contain a federal mandate that may result in expenditures of $100 million or more for state, local, and tribal governments, in the aggregate, or the private sector in any one year. EPA estimates total annual costs to states and authorized tribes to range from $5.24 million to $19.73 million per year. Thus, this rule is not subject to the requirements of sections 202 or 205 of UMRA.

This rule is also not subject to the requirements of section 203 of UMRA because it contains no regulatory requirements that might significantly or uniquely affect small governments.

E. Executive Order 13132: Federalism

This rule does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various

levels of government. The rule finalizes regulatory revisions to provide clarity and transparency in the WQS regulation that may require state and local officials to reevaluate or revise their WQS. However, the rule will not impose substantial direct compliance costs on state or local governments, nor will it preempt state law. Thus, Executive Order 13132 does not apply to this action.

Keeping with the spirit of Executive Order 13132 and consistent with EPA's policy to promote communications between EPA and state and local governments, EPA consulted with state and local officials early in the process and solicited their comments on the proposed action and on the development of this rule.

Between September 2013 and June 2014, EPA consulted with representatives from states and intergovernmental associations at their request, to hear their views on the proposed regulatory revisions and how commenters' suggested revisions would impact implementation of their WQS programs. Some participants expressed concern that the proposed changes may impose a resource burden on state and local governments, as well as infringe on states' flexibility in the areas included in the proposed rule. Some participants urged EPA to ensure that states with satisfactory regulations in these areas are not unduly burdened by the regulatory revisions.

F. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action may have tribal implications. However, it will neither impose substantial direct compliance costs on tribal governments, nor preempt tribal law. Thus, Executive Order 13175 does not apply to this action. To date, 50 Indian tribes have been approved for treatment in a manner similar to a state (TAS) for CWA sections 303 and 401. Of the 50 tribes, 40 have EPA-approved WQS in their respective jurisdictions. All of these authorized tribes are impacted by this regulation. However, this rule might affect other tribes with waters adjacent to waters with federal, state, or authorized tribal WQS.

EPA consulted and coordinated with tribal officials consistent with EPA's Policy on Consultation and Coordination with Indian Tribes early in the process of developing this regulation to allow them to provide meaningful and timely input into its development. In August 2010, November 2013, and October 2014, EPA held tribes-only consultation and coordination sessions to hear their views and answer questions of all interested tribes on the targeted areas EPA considered for regulatory revision. Tribes expressed the need for additional guidance and assistance in implementing the proposed rulemaking, specifically for development of antidegradation implementation methods and determination of the highest attainable use. EPA considered the burden to states and authorized tribes in developing this rule and, when possible, has provided direction and flexibility that allows tribes to address higher priority aspects of their WQS programs. EPA also intends to release updated guidance in a new edition of the WQS Handbook. A summary of the consultation and coordination is available in the docket for this rule.

G. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

This action is not subject to Executive Order 13045, because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health risks or safety risks addressed by this action present a disproportionate risk to children.

H. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

This action is not a ''significant energy action'' because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

I. National Technology Transfer and Advancement Act

This rulemaking does not involve technical standards.

J. Executive Order 12898: Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

EPA has determined that this rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations, because it does not adversely affect the level of protection provided to human health or the environment. This rule does not directly establish WQS for a state or authorized tribe and, therefore, does not directly affect a specific population or a particular geographic area(s).

K. Congressional Review Act (CRA)

This action is subject to the CRA, and EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 131

Environmental protection, Indians—lands, Intergovernmental relations, Reporting and recordkeeping requirements, Water pollution control.

Dated: August 5, 2015.

Gina McCarthy,

Administrator.

For the reasons stated in the preamble, EPA amends 40 CFR part 131 as follows:

PART 131—WATER QUALITY STANDARDS

■ 1. The authority citation for part 131 continues to read as follows:

Authority: 33 U.S.C. 1251 *et seq.*

Subpart A—General Provisions

■ 2. In § 131.2, revise the first sentence to read as follows:

§ 131.2 Purpose.

A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria that protect the designated uses. * * *

* * * * *

■ 3. In § 131.3:

■ a. Revise paragraphs (h) and (j).

■ b. Add paragraphs (m), (n), (o), (p), and (q).

The revisions and additions read as follows:

§ 131.3 Definitions.

* * * * *

(h) *Water quality limited segment* means any segment where it is known that water quality does not meet applicable water quality standards, and/or is not expected to meet applicable water quality standards, even after the application of the technology-based effluent limitations required by sections 301(b) and 306 of the Act.

* * * * *

(j) *States* include: The 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, and Indian Tribes that EPA determines to be eligible for purposes of the water quality standards program.

* * * * *

(m) *Highest attainable use* is the modified aquatic life, wildlife, or recreation use that is both closest to the uses specified in section 101(a)(2) of the

Act and attainable, based on the evaluation of the factor(s) in § 131.10(g) that preclude(s) attainment of the use and any other information or analyses that were used to evaluate attainability. There is no required highest attainable use where the State demonstrates the relevant use specified in section 101(a)(2) of the Act and sub-categories of such a use are not attainable.

(n) *Practicable*, in the context of § 131.12(a)(2)(ii), means technologically possible, able to be put into practice, and economically viable.

(o) A *water quality standards variance* (WQS variance) is a time-limited designated use and criterion for a specific pollutant(s) or water quality parameter(s) that reflect the highest attainable condition during the term of the WQS variance.

(p) *Pollutant Minimization Program*, in the context of § 131.14, is a structured set of activities to improve processes and pollutant controls that will prevent and reduce pollutant loadings.

(q) *Non-101(a)(2) use* is any use unrelated to the protection and propagation of fish, shellfish, wildlife or recreation in or on the water.

■ 4. In § 131.5:
■ a. Revise paragraphs (a)(1) and (2).
■ b. Redesignate paragraphs (a)(3) through (5) as paragraphs (a)(6) through (8).
■ c. Add paragraphs (a)(3) through (5).
■ d. Revise newly designated paragraph (a)(6).
■ e. Revise paragraph (b).

The revisions and additions read as follows:

§ 131.5 EPA authority.

(a) * * *

(1) Whether the State has adopted designated water uses that are consistent with the requirements of the Clean Water Act;

(2) Whether the State has adopted criteria that protect the designated water uses based on sound scientific rationale consistent with § 131.11;

(3) Whether the State has adopted an antidegradation policy that is consistent with § 131.12, and whether any State adopted antidegradation implementation methods are consistent with § 131.12;

(4) Whether any State adopted WQS variance is consistent with § 131.14;

(5) Whether any State adopted provision authorizing the use of schedules of compliance for water quality-based effluent limits in NPDES permits is consistent with § 131.15;

(6) Whether the State has followed applicable legal procedures for revising or adopting standards;

* * * * *

(b) If EPA determines that the State's or Tribe's water quality standards are consistent with the factors listed in paragraphs (a)(1) through (8) of this section, EPA approves the standards. EPA must disapprove the State's or Tribe's water quality standards and promulgate Federal standards under section 303(c)(4), and for Great Lakes States or Great Lakes Tribes under section 118(c)(2)(C) of the Act, if State or Tribal adopted standards are not consistent with the factors listed in paragraphs (a)(1) through (8) of this section. EPA may also promulgate a new or revised standard when necessary to meet the requirements of the Act.

* * * * *

Subpart B—Establishment of Water Quality Standards

■ 5. In § 131.10:
■ a. Revise paragraphs (a), (g) introductory text, (j), and (k).
■ b. Remove and reserve paragraph (e).

The revisions read as follows:

§ 131.10 Designation of uses.

(a) Each State must specify appropriate water uses to be achieved and protected. The classification of the waters of the State must take into consideration the use and value of water for public water supplies, protection and propagation of fish, shellfish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation. If adopting new or revised designated uses other than the uses specified in section 101(a)(2) of the Act, or removing designated uses, States must submit documentation justifying how their consideration of the use and value of water for those uses listed in this paragraph appropriately supports the State's action. A use attainability analysis may be used to satisfy this requirement. In no case shall a State adopt waste transport or waste assimilation as a designated use for any waters of the United States.

* * * * *

(e) [Reserved]

* * * * *

(g) States may designate a use, or remove a use that is *not* an existing use, if the State conducts a use attainability analysis as specified in paragraph (j) of this section that demonstrates attaining the use is not feasible because of one of the six factors in this paragraph. If a State adopts a new or revised water quality standard based on a required use attainability analysis, the State shall also adopt the highest attainable use, as defined in § 131.3(m).

* * * * *

(j) A State must conduct a use attainability analysis as described in § 131.3(g), and paragraph (g) of this section, whenever:

(1) The State designates for the first time, or has previously designated for a water body, uses that do not include the uses specified in section 101(a)(2) of the Act; or

(2) The State wishes to remove a designated use that is specified in section 101(a)(2) of the Act, to remove a sub-category of such a use, or to designate a sub-category of such a use that requires criteria less stringent than previously applicable.

(k) A State is not required to conduct a use attainability analysis whenever:

(1) The State designates for the first time, or has previously designated for a water body, uses that include the uses specified in section 101(a)(2) of the Act; or

(2) The State designates a sub-category of a use specified in section 101(a)(2) of the Act that requires criteria at least as stringent as previously applicable; or

(3) The State wishes to remove or revise a designated use that is a non-101(a)(2) use. In this instance, as required by paragraph (a) of this section, the State must submit documentation justifying how its consideration of the use and value of water for those uses listed in paragraph (a) appropriately supports the State's action, which may be satisfied through a use attainability analysis.

■ 6. In § 131.11, revise paragraphs (a)(2) and (b) introductory text to read as follows:

§ 131.11 Criteria.

(a) * * *

(2) *Toxic pollutants.* States must review water quality data and information on discharges to identify specific water bodies where toxic pollutants may be adversely affecting water quality or the attainment of the designated water use or where the levels of toxic pollutants are at a level to warrant concern and must adopt criteria for such toxic pollutants applicable to the water body sufficient to protect the designated use. Where a State adopts narrative criteria for toxic pollutants to protect designated uses, the State must provide information identifying the method by which the State intends to regulate point source discharges of toxic pollutants on water quality limited segments based on such narrative criteria. Such information may be included as part of the standards or may be included in documents generated by the State in response to the Water

Quality Planning and Management Regulations (40 CFR part 130).

(b) *Form of criteria:* In establishing criteria, States should:

* * * * *

■ 7. In § 131.12:

■ a. Revise the section heading and paragraphs (a) introductory text and (a)(2).

■ b. Add paragraph (b).

The revisions and additions read as follows:

§ 131.12 Antidegradation policy and implementation methods.

(a) The State shall develop and adopt a statewide antidegradation policy. The antidegradation policy shall, at a minimum, be consistent with the following:

* * * * *

(2) Where the quality of the waters exceeds levels necessary to support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected unless the State finds, after full satisfaction of the intergovernmental coordination and public participation provisions of the State's continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in which the waters are located. In allowing such degradation or lower water quality, the State shall assure water quality adequate to protect existing uses fully. Further, the State shall assure that there shall be achieved the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control.

(i) The State may identify waters for the protections described in paragraph (a)(2) of this section on a parameter-by-parameter basis or on a water body-by-water body basis. Where the State identifies waters for antidegradation protection on a water body-by-water body basis, the State shall provide an opportunity for public involvement in any decisions about whether the protections described in paragraph (a)(2) of this section will be afforded to a water body, and the factors considered when making those decisions. Further, the State shall not exclude a water body from the protections described in paragraph (a)(2) of this section solely because water quality does not exceed levels necessary to support all of the uses specified in section 101(a)(2) of the Act.

(ii) Before allowing any lowering of high water quality, pursuant to paragraph (a)(2) of this section, the State shall find, after an analysis of alternatives, that such a lowering is necessary to accommodate important economic or social development in the area in which the waters are located. The analysis of alternatives shall evaluate a range of practicable alternatives that would prevent or lessen the degradation associated with the proposed activity. When the analysis of alternatives identifies one or more practicable alternatives, the State shall only find that a lowering is necessary if one such alternative is selected for implementation.

* * * * *

(b) The State shall develop methods for implementing the antidegradation policy that are, at a minimum, consistent with the State's policy and with paragraph (a) of this section. The State shall provide an opportunity for public involvement during the development and any subsequent revisions of the implementation methods, and shall make the methods available to the public.

■ 8. Add § 131.14 to read as follows:

§ 131.14 Water quality standards variances.

States may adopt WQS variances, as defined in § 131.3(o). Such a WQS variance is subject to the provisions of this section and public participation requirements at § 131.20(b). A WQS variance is a water quality standard subject to EPA review and approval or disapproval.

(a) *Applicability.* (1) A WQS variance may be adopted for a permittee(s) or water body/waterbody segment(s), but only applies to the permittee(s) or water body/waterbody segment(s) specified in the WQS variance.

(2) Where a State adopts a WQS variance, the State must retain, in its standards, the underlying designated use and criterion addressed by the WQS variance, unless the State adopts and EPA approves a revision to the underlying designated use and criterion consistent with §§ 131.10 and 131.11. All other applicable standards not specifically addressed by the WQS variance remain applicable.

(3) A WQS variance, once adopted by the State and approved by EPA, shall be the applicable standard for purposes of the Act under § 131.21(d) through (e), for the following limited purposes. An approved WQS variance applies for the purposes of developing NPDES permit limits and requirements under 301(b)(1)(C), where appropriate, consistent with paragraph (a)(1) of this section. States and other certifying entities may also use an approved WQS variance when issuing certifications under section 401 of the Act.

(4) A State may not adopt WQS variances if the designated use and criterion addressed by the WQS variance can be achieved by implementing technology-based effluent limits required under sections 301(b) and 306 of the Act.

(b) *Requirements for Submission to EPA.* (1) A WQS variance must include:

(i) Identification of the pollutant(s) or water quality parameter(s), and the water body/waterbody segment(s) to which the WQS variance applies. Discharger(s)-specific WQS variances must also identify the permittee(s) subject to the WQS variance.

(ii) The requirements that apply throughout the term of the WQS variance. The requirements shall represent the highest attainable condition of the water body or waterbody segment applicable throughout the term of the WQS variance based on the documentation required in (b)(2) of this section. The requirements shall not result in any lowering of the currently attained ambient water quality, unless a WQS variance is necessary for restoration activities, consistent with paragraph (b)(2)(i)(A)(*2*) of this section. The State must specify the highest attainable condition of the water body or waterbody segment as a quantifiable expression that is one of the following:

(A) For discharger(s)-specific WQS variances:

(*1*) The highest attainable interim criterion; or

(*2*) The interim effluent condition that reflects the greatest pollutant reduction achievable; or

(*3*) If no additional feasible pollutant control technology can be identified, the interim criterion or interim effluent condition that reflects the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the State adopts the WQS variance, and the adoption and implementation of a Pollutant Minimization Program.

(B) For WQS variances applicable to a water body or waterbody segment:

(*1*) The highest attainable interim use and interim criterion; or

(*2*) If no additional feasible pollutant control technology can be identified, the interim use and interim criterion that reflect the greatest pollutant reduction achievable with the pollutant control technologies installed at the time the State adopts the WQS variance, and the adoption and implementation of a Pollutant Minimization Program.

(iii) A statement providing that the requirements of the WQS variance are

either the highest attainable condition identified at the time of the adoption of the WQS variance, or the highest attainable condition later identified during any reevaluation consistent with paragraph (b)(1)(v) of this section, whichever is more stringent.

(iv) The term of the WQS variance, expressed as an interval of time from the date of EPA approval or a specific date. The term of the WQS variance must only be as long as necessary to achieve the highest attainable condition and consistent with the demonstration provided in paragraph (b)(2) of this section. The State may adopt a subsequent WQS variance consistent with this section.

(v) For a WQS variance with a term greater than five years, a specified frequency to reevaluate the highest attainable condition using all existing and readily available information and a provision specifying how the State intends to obtain public input on the reevaluation. Such reevaluations must occur no less frequently than every five years after EPA approval of the WQS variance and the results of such reevaluation must be submitted to EPA within 30 days of completion of the reevaluation.

(vi) A provision that the WQS variance will no longer be the applicable water quality standard for purposes of the Act if the State does not conduct a reevaluation consistent with the frequency specified in the WQS variance or the results are not submitted to EPA as required by (b)(1)(v) of this section.

(2) The supporting documentation must include:

(i) Documentation demonstrating the need for a WQS variance.

(A) For a WQS variance to a use specified in section 101(a)(2) of the Act or a sub-category of such a use, the State must demonstrate that attaining the designated use and criterion is not feasible throughout the term of the WQS variance because:

(*1*) One of the factors listed in § 131.10(g) is met, or

(*2*) Actions necessary to facilitate lake, wetland, or stream restoration through dam removal or other significant reconfiguration activities preclude attainment of the designated use and criterion while the actions are being implemented.

(B) For a WQS variance to a non-101(a)(2) use, the State must submit documentation justifying how its consideration of the use and value of the water for those uses listed in § 131.10(a) appropriately supports the WQS variance and term. A demonstration consistent with paragraph (b)(2)(i)(A) of this section may be used to satisfy this requirement.

(ii) Documentation demonstrating that the term of the WQS variance is only as long as necessary to achieve the highest attainable condition. Such documentation must justify the term of the WQS variance by describing the pollutant control activities to achieve the highest attainable condition, including those activities identified through a Pollutant Minimization Program, which serve as milestones for the WQS variance.

(iii) In addition to paragraphs (b)(2)(i) and (ii) of this section, for a WQS variance that applies to a water body or waterbody segment:

(A) Identification and documentation of any cost-effective and reasonable best management practices for nonpoint source controls related to the pollutant(s) or water quality parameter(s) and water body or waterbody segment(s) specified in the WQS variance that could be implemented to make progress towards attaining the underlying designated use and criterion. A State must provide public notice and comment for any such documentation.

(B) Any subsequent WQS variance for a water body or waterbody segment must include documentation of whether and to what extent best management practices for nonpoint source controls were implemented to address the pollutant(s) or water quality parameter(s) subject to the WQS variance and the water quality progress achieved.

(c) *Implementing WQS variances in NPDES permits.* A WQS variance serves as the applicable water quality standard for implementing NPDES permitting requirements pursuant to § 122.44(d) of this chapter for the term of the WQS variance. Any limitations and requirements necessary to implement the WQS variance shall be included as enforceable conditions of the NPDES permit for the permittee(s) subject to the WQS variance.

■ 9. Add § 131.15 to read as follows:

§ 131.15 Authorizing the use of schedules of compliance for water quality-based effluent limits in NPDES permits.

If a State intends to authorize the use of schedules of compliance for water quality-based effluent limits in NPDES permits, the State must adopt a permit compliance schedule authorizing provision. Such authorizing provision is a water quality standard subject to EPA review and approval under section 303 of the Act and must be consistent with sections 502(17) and 301(b)(1)(C) of the Act.

Subpart C—Procedures for Review and Revision of Water Quality Standards

■ 10. In § 131.20, revise paragraphs (a) and (b) to read as follows:

§ 131.20 State review and revision of water quality standards.

(a) *State review.* The State shall from time to time, but at least once every 3 years, hold public hearings for the purpose of reviewing applicable water quality standards adopted pursuant to §§ 131.10 through 131.15 and Federally promulgated water quality standards and, as appropriate, modifying and adopting standards. The State shall also re-examine any waterbody segment with water quality standards that do not include the uses specified in section 101(a)(2) of the Act every 3 years to determine if any new information has become available. If such new information indicates that the uses specified in section 101(a)(2) of the Act are attainable, the State shall revise its standards accordingly. Procedures States establish for identifying and reviewing water bodies for review should be incorporated into their Continuing Planning Process. In addition, if a State does not adopt new or revised criteria for parameters for which EPA has published new or updated CWA section 304(a) criteria recommendations, then the State shall provide an explanation when it submits the results of its triennial review to the Regional Administrator consistent with CWA section 303(c)(1) and the requirements of paragraph (c) of this section.

(b) *Public participation.* The State shall hold one or more public hearings for the purpose of reviewing water quality standards as well as when revising water quality standards, in accordance with provisions of State law and EPA's public participation regulation (40 CFR part 25). The proposed water quality standards revision and supporting analyses shall be made available to the public prior to the hearing.

* * * * *

■ 11. In § 131.22, revise paragraph (b) to read as follows:

§ 131.22 EPA promulgation of water quality standards.

* * * * *

(b) The Administrator may also propose and promulgate a regulation, applicable to one or more navigable waters, setting forth a new or revised standard upon determining such a standard is necessary to meet the requirements of the Act. To constitute an Administrator's determination that a

new or revised standard is necessary to meet the requirements of the Act, such determination must:

(1) Be signed by the Administrator or his or her duly authorized delegate, and

(2) Contain a statement that the document constitutes an Administrator's determination under section 303(c)(4)(B) of the Act.

* * * * *

Subpart D—Federally Promulgated Water Quality Standards

■ 12. In § 131.34, revise paragraph (c) to read as follows:

§ 131.34 Kansas.

* * * * *

(c) *Water quality standard variances.* The Regional Administrator, EPA Region 7, is authorized to grant variances from the water quality standards in paragraphs (a) and (b) of this section where the requirements of § 131.14 are met.

■ 13. In § 131.40, revise paragraph (c) to read as follows:

§ 131.40 Puerto Rico.

* * * * *

(c) *Water quality standard variances.* The Regional Administrator, EPA Region 2, is authorized to grant variances from the water quality standards in paragraphs (a) and (b) of this section where the requirements of § 131.14 are met.

[FR Doc. 2015–19821 Filed 8–20–15; 8:45 am]

BILLING CODE 6560–50–P

Exhibit 32

DUANE A. SMITH
EXECUTIVE DIRECTOR

BRAD HENRY
GOVERNOR

STATE OF OKLAHOMA
WATER RESOURCES BOARD
www.owrb.ok.gov

August 11, 2008

Ms. Denise Keehner
U.S. EPA Headquarters
Ariel Rios Building
1200 Pennsylvania Ave., N.W.
Mail Code: 4305T
Washington, D.C. 20460

Dear Ms. Keehner:

It has been my pleasure to work with you and your staff over the last several months to clarify many fundamental Water Quality Standards issues we have wrestled with in recent years. Whether these issues arose through ASIWPCA, WQS Managers Meetings, WQS Workgroup Meetings or the WQS Academy, it has been both enlightening and encouraging to explore them with you.

Would it be possible for you to forward to me in writing the results of some of these discussions to share with my staff and state colleagues? As an example, we've framed the question of "existing uses" with the following questions:

What are existing uses?
When determining an existing use, are there situations where a state should describe existing uses more specifically than designated uses?
How should a state determine the existing use for a water body?
What is the difference between an existing use and a designated use?
Can a state adopt the existing use as its designated use?

We have discussed other foundational issues as well and I would be most interested in affirming my understanding of the outcomes of these discussions that reflect our common understanding.

Thanks again for all your time and effort on the critically important work of WQS. As always feel free to call me with any questions at (405) 530-8800.

Sincerely,

Derek Smithee, Chief
Water Quality Programs Division

State of Oklahoma OWRB WATER RESOURCES BOARD the water agency

3800 N. CLASSEN BOULEVARD • OKLAHOMA CITY, OKLAHOMA 73118
TELEPHONE (405) 530-8800 • FAX (405) 530-8900

Oklahoma Comprehensive Water Plan

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
WATER

September 5, 2008

Mr. Derek Smithee
State of Oklahoma
Water Resources Board
3800 N. Classen Blvd.
Oklahoma City, OK 73118

Dear Mr. Smithee:

Thank you for your letter of August 11, 2008. I also appreciate the discussions we have had with states at ASIWPCA meetings, WQS Managers Meetings, WQS Workgroup meetings, and the WQS Academy. You asked if we could forward you in writing the results of these discussions to share with your staff and colleagues. Our office is happy to provide you with answers to your specific questions that reflect common understanding throughout EPA Regional Offices in the enclosed attachment.

If you have any questions please feel free to contact me at 202-566-1566 or Jim Keating at 202-566-0383.

Sincerely,

Denise Keehner 9/23/08

Denise Keehner, Director
Standards and Health Protection Division

Enclosures

Attachment

1) ***What are existing uses?***

EPA's regulations define existing uses 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."[1,2] Existing uses are relevant to two provisions in the Federal regulation – 40 C.F.R. § 131.10(g), designated uses, and 40 C.F.R. § 131.12(a)(1), antidegradation. Overall, these provisions:

- Prohibit removal of a designated use that would also remove an existing use.[3]
- Require the maintenance and protection of existing instream water uses and the level of water quality necessary to protect existing uses when implementing a state's or tribe's antidegradation policy.[4]

EPA considers the phrase "existing uses are those uses actually attained" to mean the use and water quality necessary to support the use that have been achieved in the waterbody on or after November 28, 1975. Waterbody uses relate to a distinct purpose (e.g., recreation, public water supply) or function (e.g., supporting an aquatic ecosystem). EPA's regulations, relating to the protection of existing uses, require states and tribes to maintain and protect these uses, not specific water quality parameters which may have achieved levels more protective than necessary to support these uses.[5]

In nearly all cases, a waterbody will have achieved some degree of use related to aquatic life, wildlife, and human activity on or after November 28, 1975. States and tribes are not bound by their designated use classification categories when describing existing uses. In some cases, the use(s) and water quality actually achieved may be less protective than the designated use(s) assigned to the waterbody. For example, while the water quality since November 28, 1975 may never have been sufficient to support the diverse aquatic community associated with the waterbody's designated use, it is likely that the water quality in the waterbody supports or has supported some less diverse community of organisms. When such uses have been achieved on or after November 28, 1975, EPA considers the uses reflecting the degree of aquatic life, wildlife, and human activity achieved to be "existing" uses.

---

[1] 40 C.F.R. § 131.3(e).
[2] November 28, 1975 is the date EPA promulgated the initial Federal water quality standards regulations related to existing uses. 40 C.F.R. 55334 (Nov. 28, 1975).
[3] 40 C.F.R. § 131.10(g).
[4] 40 C.F.R. § 131.12(a)(1).
[5] In the 1982 preamble to the proposed rule for the current WQS regulations, EPA stated that the first tier of antidegradation applies to uses, not specific parameters. For example, if a stream actually achieved a warm water fishery use and achieved a dissolved oxygen level of 7.0 mg/L, under the existing use regulation the state would only be required to maintain the dissolved oxygen levels sufficient to support the warm water fishery existing use (e.g. 5.0 mg/L if that is sufficient to support the existing warmwater fishery use). 47 Fed. Reg.49,234, 49,238 (col. 3)(Oct. 29, 1982).

A waterbody may have multiple existing uses. When evaluating the uses actually achieved along a continuum, the existing uses of a waterbody are the "highest degree of uses" and water quality necessary to support those uses, that have been achieved since November 28, 1975, independent of the designated use. "Highest degree of uses" generally means the degree of use closest to those supported by minimally impacted conditions, which usually is associated with the highest level of water quality. In the paragraph above, if this less diverse community is the highest degree of aquatic life use that has been achieved since 1975, this would be the existing aquatic life use.

EPA's existing use regulations ensure that the waterbody's highest degree of uses and the necessary levels of water quality actually achieved on or after November 28, 1975 will be maintained and protected consistent with the overall objective of the Clean Water Act (CWA) to restore and maintain the physical, chemical, and biological integrity of the nation's waters.[6] Thus, 40 C.F.R. §§ 131.10(g) and 131.12(a)(1) define the absolute "floor" or minimum use and necessary level of water quality achieved that must be maintained and protected in a waterbody.[7] In the above example, where a state is designating its uses or revising its designated uses, the state or tribe must ensure that the resulting water quality will not jeopardize the less diverse aquatic community (and thus the existing use).

The regulation at 40 C.F.R. § 131.10(g) prohibiting removal of an existing use is not intended to apply to a situation where the state or tribe wishes to remove a use where the removal would result in improving the condition of a waterbody, i.e., facilitates attainment of a use closer to those supported by minimally impacted conditions.[8] The intent of the regulation is to further the objectives of the CWA "to restore and maintain the chemical, physical, and biological integrity" of the nations waters (CWA section 101(a)), not to prevent actions that make the waterbody more like its minimally impacted condition. For example, if a pollution tolerant aquatic community is replaced by a more diverse aquatic community as a result of improving water quality, loss of the pollution tolerant community is a necessary step towards restoring a waterbody to its minimally impacted condition and is not a removal of an existing use. Similarly, if a state or tribe stocks trout (a coldwater species) into a natural warmwater fishery, the existing use provision would not prevent removal of that stocked trout fishery use because a natural warmwater fishery is closer to the minimally impacted condition.

Existing use determinations should be made on a site-specific. If a state or tribe can show that removing a designated use will not remove an existing use and the state or tribe can show that there are factors precluding the attainment of this designated use, the state/tribe must then determine and designate the highest attainable use.

2) ***When determining an existing use, are there situations where a state or tribe should describe existing uses more specifically than designated uses?***

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[6] CWA section 101(a).
[7] See the preamble to EPA's WQS regulations at 48 Fed. Reg. 51,500, 51,403, col. 2 (Nov. 8, 1983).
[8] See 40 C.F.R. § 131.10(h). States or tribes may remove existing uses where the state or tribe is adding a use requiring more stringent criteria..

Yes. While there are some situations where it would be reasonable to describe existing uses of a waterbody using the same broad categories employed for designating uses, a state or tribe should describe existing uses more specifically where necessary to meet the intent of the existing use requirements. It would be consistent with the intent of the regulation for a state or tribe to more specifically describe its existing use, for example, where necessary to maintain and protect unique attributes of a waterbody that are not adequately described using a broadly defined designated use category. Examples 1 (CSO-impacted waters) and 2 (mining-impacted waters) provided in the next question, demonstrate the importance of describing the existing use (and the water quality necessary to support this existing use) in a specific manner so that the uses and the water quality improvements achieved since 1975 can be maintained and protected.

States and tribes must consider existing uses prior to removing or revising a designated use and in the context of its antidegradation requirements.[9] The Federal regulations do not require states and tribes to specify both existing uses and designated uses for each waterbody in their water quality standards; however a state or tribe may do so if it chooses.[10]

3) ***How should a state or tribe determine the existing use for a waterbody?***

A state or tribe should determine existing uses on a site-specific basis to ensure it has identified the highest degree of uses and water quality necessary to support the uses that have been achieved since November 28, 1975. When describing existing uses, states and tribes should articulate not only the use(s) that has been achieved, but also the water quality supporting the specific use(s) that has been achieved. Examples 1 (CSO-impacted) and 2 (mining-impacted) below illustrate this point. For aquatic life, states and tribes should consider the available biological data as an indicator of both water quality and the actual use, in conjunction with any available chemical water quality data.

Although EPA interprets the definition of "existing use" to require consideration of the available data and information on both actual use and water quality, all the necessary data may not be available. In these circumstances, a state or tribe may choose, in implementing its water quality standards program, to determine an existing use based on the strength of evidence that a use has actually been achieved or the strength of evidence that water quality supporting a use has been achieved. In other words, where data may be limited or inconclusive, EPA expects states and tribes to consider the quantity, quality, and reliability of the different types of available data to describe the existing use as accurately and completely as possible and to resolve any apparent discrepancies based upon that evaluation. As an example, a state is considering removing a primary contact recreation use and is therefore evaluating the existing use. While it has information that people are swimming in a waterbody, it does not have any data to determine the level of water quality that has been achieved on or after November 28, 1975. In this case, the state has two

[9] 40 C.F.R. §§ 131.10(g) and 131.12(a)(1).
[10] EPA notes that 40 C.F.R. § 131.10(i) requires states and tribes to "revise its standards to reflect the uses actually being attained."

choices regarding the existing recreation use. If there is no reason to believe that there has ever been a water quality problem (e.g., no nearby sources of bacteria), then it would be reasonable for the state or tribe to determine that primary contact recreation is the existing use. However, if there is reason to believe a nearby source may have been limiting the water quality since November 28, 1975, the state should conduct a use attainability analysis to determine if primary contact recreation is attainable or not. If primary contact recreation is deemed attainable, the state must retain primary contact recreation use as the designated use, even if it is unclear whether that use is existing. If a primary contact recreation use is not attainable, then the state or tribe must designate the highest attainable recreation use.[11]

In a 1985 Antidegradation Questions and Answers document, EPA said "An existing use can be established by demonstrating that fishing, swimming, or other uses have actually occurred since November 28, 1975 or that the water quality is suitable to allow such uses to occur (unless there are physical problems which prevent the use regardless of water quality.)" While this approach allows states to make an existing use determination where it only has information on one or the other type of information, some have interpreted this statement as obligating states to ignore one set of information where both types are available. EPA has found that, in practice, taking into account all the available information results in a more accurate articulation of the existing uses. In addition, the 1985 policy was stated under the assumption that states and tribes would likely describe existing uses in the same terms or categories employed for designated uses. However, during the time since issuing those Qs and As, EPA has seen increasingly complex issues arise regarding the implementation of the existing use provisions of the Federal water quality standards regulations. It has become apparent that using the same designated use categories to describe existing uses may be insufficiently detailed to accurately describe the existing use.

Under the clarification that states and tribes are not bound to describing their existing uses with the same categories employed for designated uses, the following summarizes how states and tribes should determine existing uses.

1. Where a use (i.e., some degree of use related to aquatic life, wildlife, and human activity) has actually been achieved on or after November 28, 1975, the existing use is the highest degree of use *and* the water quality that has been achieved and is necessary to support the use (see examples 1 and 2); and

2. Where the water quality achieved was sufficient to support a use on or after November 28, 1975, but the use (i.e., some degree of use related to aquatic life, wildlife, and human activity) has not occurred, the federal regulations provide states and tribes the discretion to determining whether or not this is an existing use. In this case, however, it would be reasonable to presume the use is attainable and that a state or tribe would need to explain the factors unrelated to water quality (e.g. human caused conditions that cannot be remedied, hydrologic modifications) that

[11] 40 C.F.R. §§ 131.10(a) – (k).

are limiting the attainment of the use before it can be removed (see examples 3 and 4).

It is appropriate to describe the existing uses of a waterbody in terms of both actual use and water quality because doing so provides the most comprehensive means of describing the baseline conditions that must be protected. In identifying an existing use, it is important to have a high degree of confidence because a state or tribe may not remove an existing use when revising designated uses, regardless of whether the existing use remains attainable. This is also important because EPA's antidegradation provisions require any CWA authorization of a discharge or activity that may result in a discharge to protect the existing use.[12]

A specific example given in the 1985 Antidegradation Qs and As was one of shellfish harvesting. In the example, shellfish are thriving, but it is not clear whether people were actually harvesting the shellfish. In 1985, EPA said that shellfish harvesting is the existing use because to say "otherwise would be to say that the only time an aquatic protection use 'exists' is if someone succeeds in catching fish." (Appendix G Water Quality Standards Handbook). EPA's regulations provide states and tribes the discretion to determine whether or not shellfish harvesting is the existing use in this example. While in the example there was actual evidence of aquatic life (healthy shellfish), there was no evidence of shellfish harvesting. Under EPA's current interpretation, the state or tribe is not *required* to deem shellfish harvesting is an existing use in this situation. A state or tribe may determine that the existing use is an aquatic life use that supports healthy shellfish but that "harvesting" is not part of the "existing use" since there is no evidence of actual harvesting. On the other hand, if shellfish harvesting has not been documented but the evidence shows that the water quality to support harvesting has been achieved and the shellfish present are (or were) suitable for consumption, a state or tribe may determine the existing use is shellfish harvesting or shellfish suitable for consumption. Example 3 below further discusses that if water quality supports harvesting, a shellfish harvesting use is considered attainable (whether or not the state/tribe has determined it is an existing use) and should not be removed, even if no harvesting has actually occurred, unless the state can demonstrate otherwise based on one of the 131.10(g) factors.

For example, if shellfish harvesting has not been documented but the evidence shows that the water quality achieved and presence of shellfish suitable for consumption support harvesting, a state or tribe could determine the existing use is shellfish harvesting or shellfish suitable for consumption. Please see examples 3 (shellfish harvesting) and 4 (public water supply) for further discussion.

Example 1

People occasionally recreate in a waterbody impacted by combined sewer overflows (CSOs). While water quality may be sufficient to support full primary contact recreation most of the time (i.e., the ambient bacterial densities in the waterbody meet the bacteria water quality criteria), the number of indicator bacteria is likely to exceed the water

[12] 40 C.F.R. § 131.12(a)(1).

quality criteria established to support primary contact recreation during heavy rainfall events that trigger CSO events. If the CSOs have existed before November 28, 1975, what is the existing use related to recreation for this scenario?

In this example, water quality data may show that bacteria levels fluctuated above and below the state/tribal criterion for the protection of primary contact recreation and that exceedances correlated with the occurrence of CSO events. In addition, data regarding the type, timing, and frequency of recreation may show that some recreation (swimming or kayaking) occurs regularly in the waterbody even after a CSO discharge when the bacteria levels make it unsafe for primary contact recreation.

Based on the available data for this example, the existing use may be described as a primary contact recreation use at times not affected by CSOs and high risk recreation at times of CSO overflows (because there is a higher risk of getting sick from pathogens than in a water that supports a primary contact recreation use all the time). This existing use describes the absolute "floor" or minimum use and necessary level of water quality achieved for this waterbody that may not be removed when changing designated uses. In addition, the existing use must be protected in the context of antidegradation when authorizing a discharge or activity, under the CWA, that is required to meet water quality standards (WQS). The WQS existing use regulations, therefore, would not allow designated use changes or CWA authorized discharges/activities that would, for example, lower the water quality in a manner that would reduce the level of protection to recreators achieved by the existing use. Once the state/tribe has determined that changing the designated use will not remove an existing use, the state or tribe must conduct a use attainability analysis (UAA) if it wishes to change its currently designated recreational use to one that would require less stringent criteria.

Example 2

Hard rock mining has affected a mountain stream since before November 28, 1975, eliminating trout and other native fish, as well as impairing the benthic invertebrate community, within 20 stream miles of the mining district. Between 1990 and 2000, the State undertook a major remediation effort which resulted in a significant reduction in most metal concentrations. However, concentrations of cadmium and zinc (year round) remain well above the State's acute and chronic numeric criteria adopted to protect the trout stream use classification. The State found that with the significant reduction in most metals, the benthic invertebrate community fully recovered and the trout and other native fish returned to the remediated segment. Yet, the State also found that the number of fish per acre was still less than those at similar reference sites and the length/weight index showed these trout were not in as good of condition as those in the reference streams. Despite the inferior condition of the trout, the lower species numbers, and the fact that the water quality was exceeding some of the criteria adopted to protect a trout fishery use classification, the return of the trout was enough to encourage the public to fish and thus establish a successful trout fishing use.

In this example, the existing use (i.e., highest degree of aquatic life use and water quality necessary to support the use that has been achieved since November 28, 1975) may be described as a trout fishery in waters with high levels of cadmium and zinc concentrations. In this example, it is likely that maintaining the water quality improvements for the most limiting water quality parameters (cadmium and zinc) is especially important to maintain the existing use because changes to these parameters are likely to correlate with changes in the trout population.

Example 3

A waterbody has a healthy shellfish community that is propagating and thriving in a biologically suitable habitat and the water quality is sufficient to support both this healthy shellfish community and shellfish consumption by humans. However, there is not available information indicating that shellfish have been harvested since November 28, 1975. Because the water quality is sufficient to fully support a healthy shellfish community and a shellfish community actually exists, the existing use may be described as "a healthy shellfish community" or, as discussed earlier, the state or tribe may choose to determine shellfish harvesting is the existing use by weighing the evidence on water quality sufficient to support the use and evidence of actual use, and relying on one to a greater extent than the other. If the available data are lacking or inconclusive on whether shellfish are actually being harvested and consumed, a state or tribe may determine the existing use based on a reasonable judgment.

Shellfish harvesting is a CWA 101(a)(2) use. Therefore, if a state or tribe is considering removing a designated shellfish harvesting use, under 40 C.F.R. § 131.10(j)(2), it must conduct a UAA to demonstrate that shellfish harvesting is not feasible to attain due to one of the six factors in 40 C.F.R. § 131.10(g), keeping in mind that it cannot adopt a use that would lower the water quality in such a way that the water would no longer support the existing use. If the water quality is sufficient to support shellfish harvesting, it may be difficult to demonstrate that the use is not feasible to attain, even if no harvesting has or is occurring. However, 40 C.F.R. § 131.10(g) does provide for situations where factors other than water quality affect the attainability of a use. Any proposed use change must go through a public process consistent with state/tribal law and EPA's public participation requirements.[13]

Example 4

Since November 28, 1975, a particular waterbody has met the human health criteria necessary for a waterbody to be used as a source of public water supply. However, there has never been a drinking water intake because the waterbody has never been used as a source of drinking water. Is public water supply an existing use for this scenario?

As stated above, EPA expects states and tribes to look at the available data and information on both water quality and actual use to determine if it is an existing use. If data are clear that the water quality was sufficient to support a public water supply (PWS)

[13] 40 C.F.R. §§ 131.10(e) and 131.20(b).

use, but no PWS use actually occurred since there was no PWS intake, then the Federal regulations do not *require* that the state or tribe find that there is an existing public water supply use. EPA recognizes that when states/tribes initially designated uses they may have designated certain waters or all state/tribal waters for public water supply use even though state, tribal, and local governments have never actually used these waters as public water supply sources since November 28, 1975. However, as discussed earlier, states and tribes may choose, in implementing their water quality standards programs, to determine that a public water supply use is an existing use based on the strength of evidence that a use is actually occurring or the strength of evidence that water quality supports a potential use. For example, if a use has never occurred in or on the waterbody since November 28, 1975, but the water quality at the time of evaluation would support such a use, a state or tribe may determine that this use is an existing use because maintaining the water quality will preserve its use in the future. In addition, where data are unavailable or inconclusive, a state or tribe has the discretion to determine whether or not there is an existing public water supply use based on best professional judgment.

4) ***What is the difference between an existing use and a designated use?***

In 1998, EPA stated that "Designated uses focus on the attainable condition while existing uses focus on the past or present condition."[14]Existing uses are a description of the highest degree of uses and water quality necessary to support the uses that have been achieved at any time since November 28, 1975.[15] The existing use identifies a minimum use and level of water quality that must be maintained to protect uses that have already been attained (*i.e*, the "floor").[16] A designated uses, on the other hand, expresses the state/tribal objectives (i.e., the highest attainable uses) for a waterbody or set of waterbodies. The designated use may or may not have actually been attained in the waterbody.[17] In implementing the regulations, it is important to consider both the distinction and linkage between designated and existing uses. The following is a somewhat simplified example to illustrate how they relate to one another:

Blue Lake is a relatively small, natural lake. It is fed by tributary streams and has an outlet stream that connects it to a larger watershed. Beginning in the 1960s, Blue Lake served as a summer retreat and was surrounded by small summer homes with onsite septic systems. Over time, as popularity for the vacation spot increased, the area became incorporated into a larger urban area. The resulting urban nonpoint source pollution, hydrologic modifications to the watershed (increased impervious surfaces), and failure of onsite septic systems caused high nutrient and sediment loadings, organic enrichment, and low dissolved oxygen (DO) levels in Blue Lake. This led to an increase in nuisance algae blooms and loss of submerged aquatic vegetation. The State conducted a biological assessment in 1974 which documented poor water quality and that the aquatic community

[14] 1998 Advance Notice of Proposed Rulemaking on the Water Quality Standards Regulation. 63 FR 36,742, 36, 748 (col. 3) (July 8, 1998).
[15] 40 C.F.R. § 131.3(e).
[16] See the preamble to EPA's WQS regulations at 48 Fed. Reg. 51,500, 51,403, (col. 2) (November 8, 1983).
[17] 40 C.F.R. § 131.3(f).

was comprised of low numbers of tolerant invertebrate and fish species. Based on this information, the State designated a limited warmwater aquatic life use for Blue Lake.

During the 1980s and 1990s, the community reduced pollutant loadings to Blue Lake and water quality and biological conditions improved. Although pollutant loadings from urban stormwater remained, connecting the homes to community water and sewer lines significantly reduced the organic enrichment and nutrient loadings to Blue Lake. State monitoring data showed an increase in water clarity, reduced algal turbidity, reduced chlorophyll *a*, and reduced nutrients. Biological assessment data showed a return of expected submerged aquatic vegetation and an improved invertebrate community (rating as a fair quality aquatic community). This information documented the improved condition and helped the State define the existing use (much improved from the limited warmwater aquatic life designated use). However, the fish community still lacked a variety of species expected for this type of lake and water quality still did not meet the criteria for the state's designated warmwater aquatic life use.

In response to the improved conditions, the identified existing use, and the remaining stressors, the State conducted a use attainability analysis (UAA) in 2005 to determine the highest attainable use that should be designated. The UAA demonstrated that implementing a stormwater management program would likely result in attainment of the warmwater aquatic life designated use, although it would take several years. The State expects the projected improved water quality levels to support a good quality aquatic community. Despite the number of years it might take to see improvements, the State determined that a warmwater aquatic life use (and not a limited warmwater aquatic life use) was the appropriate long term objective and revised its water quality standards to adopt the new designated use.

Although it is important to recognize that the regulatory roles and requirements for existing and designated uses differ, decisions about each are not made in isolation. In this example, the aquatic community assessments not only helped to identify improvements in the existing condition but also helped to identify the stressors limiting attainment of a higher use. Information about the limiting stressors, then, was used to evaluate whether or not the expected condition would be attainable. As illustrated here, there is a link between existing and designated uses, and information about the existing condition can be used to inform attainability decisions.

5) ***Can a state or tribe adopt the existing use as its designated use?***

In 1998, EPA stated that "Designated uses focus on the attainable condition while existing uses focus on the past or present condition." EPA's regulations at 40 C.F.R. § 131.10 links these uses in a manner which intends to ensure that States and Tribes designate appropriate water uses, reflecting both the exiting and attainable uses of each waterbody.[18] A state or tribe may adopt an existing use as the designated use where it is the highest attainable use. However, where it is not, states and tribes must consider designating uses based on the

[18] 1998 Advance Notice of Proposed Rulemaking on the Water Quality Standards Regulation. 63 FR 36,742, 36, 748 (col. 3) (July 8, 1998).

potential of a waterbody to attain a use, and not simply base the use designation on what has been attained, (i.e. the existing use).[19]

[19] 40 C.F.R. §§ 131.2 and 131.10.

Exhibit 33

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 13 2006

OFFICE OF WATER

MEMORANDUM

SUBJECT: Improving the Effectiveness of the Use Attainability Analysis (UAA) Process

FROM: Ephraim S. King, Director
Office of Science and Technology

TO: Regional Water Division Directors,
Regions 1-10

I am writing you to reinforce the importance of working together with our state and tribal partners to make the UAA process operate more effectively. As you know, appropriate and defensible water quality standards (WQS) are essential for achieving the Clean Water Act (CWA) goals of maintaining and restoring water quality -- and getting WQS right starts with getting designated uses right.

With this memo, I am attaching a set of case studies which demonstrate a number of UAAs that are associated with a designated use change. These case studies illustrate the breadth and variety of successful UAAs in terms of the types of waterbodies and uses addressed, the factors involved (i.e., natural, human-caused, or economic conditions), and the complexity and depth of analysis. You can expect to receive additional UAA-related materials from the Office of Science and Technology (OST) this calendar year, such as sets of frequently asked questions and answers about UAAs, to help support implementation of the UAA process in your Region.

Our goal is to make the WQS program work better. Our priority is to improve clarity in the WQS process including better communication, understanding, efficiency, and increased public awareness. Making the UAA process operate effectively is an important step towards achieving these priorities. Once states and tribes designate the appropriate uses, the right water quality criteria, permits and targets for Total Maximum Daily Loads (TMDLs) will follow to move us towards improving water quality.

I appreciate your continued support in this area and ask that you share and reinforce with our co-regulators and stakeholders the following five key points:

- **Getting the uses right requires both a useful set of designated uses and an effective process for conducting credible and defensible UAAs.** EPA realizes that deciding what uses are attainable is critical, and views the UAA process, properly applied and implemented, as a vital tool in making those decisions. Early coordination among states and EPA is critical to making the process more efficient. UAAs are meant to assess what is attainable, it is not simply about documenting the current water quality condition and use (although documenting current conditions is often part of the analysis).

- **A credible UAA can result in a change in designated use in either direction.** A credible UAA can lead to refinements or changes in use that lead to either more or less protective criteria. The goal is that the new use is more accurate.

- **There is nothing wrong with changing designated uses after completion of a credible UAA.** It is an expected part of the process. If a credible and defensible UAA indicates a need for a WQS change, then a change to WQS is appropriate to effectively implementing the WQS program. Sometimes these changes are on the critical path to making real environmental progress.

- **The UAA process should be better integrated with TMDL development.** We need to work together with states and tribes to ensure that as we develop TMDLs, we also coordinate on issues related to use attainability as needed. In practice, the information gathered to develop a TMDL, and the allocations in a TMDL, may point to the need to pursue a UAA. While in some cases it may be more effective to ensure that the right uses are in place prior to completing the TMDL, it is also important not to let uncertainty about a specific water quality endpoint delay implementation of needed water quality improvements. Scarce resources should be directed where they will be most effective and avoid duplicative efforts. We should continue to share ideas/examples, develop and promote best practices.

- **Improved public communication leads to improved public acceptance.** It is critical for EPA, states and tribes to engage the public in meaningful discussions regarding the importance and value of getting uses right in maintaining and restoring water quality. WQS that reflect the best available data and information should be used to direct the process of managing water quality. They are essential to informed decision making. Just as important, public understanding and acceptance of WQS is central to broader community support for addressing potentially difficult pollution control management decisions.

In the long run, water quality programs will be most successful if the public understands their underlying goals, the process by which those goals are set, and is engaged and able to effectively contribute to that process. Getting the uses right is on the critical path to effective water quality standards implementation. Accomplishing this can be a significant challenge but it is also an essential need. I look forward to continuing to address these issues with you.

Attachment

cc: Regional Water Quality Standards Branch Chiefs, Regions 1-10
Diane Regas, OWOW
Lee Schroer, OGC

Exhibit 34

Existing Use Analysis

Work Plan

for
Classified Waters Within Los Alamos National Laboratory
Identified Under 20.6.4.128 NMAC

Prepared by
New Mexico Environment Department
Surface Water Quality Bureau
October XX, 2020

Table of Contents

I. Purpose

This work plan assesses whether there is supporting evidence for conducting an Existing Use Analysis ("EUA") for the classified waters within Los Alamos National Laboratory ("LANL") presently identified under 20.6.4.128 NMAC. An EUA, although similar in function to a Use Attainability Analysis ("UAA"), must only demonstrate that the existing use, based on water quality, is more stringent than the designated use; whereas, a UAA must have sufficient evidence to support removal of the current designated use, that is not an existing use, as well as provide sufficient evidence to determine the highest attainable use. In either case, the work plan evaluates the current and historical designated uses, evaluates the evidence for existing uses, provides the general site conditions for the area being investigated, identifies the available data considered, evaluates available studies or models that may support an analysis, identifies the proposed actions to engage tribes, stakeholders and the public and finally the determination on whether there is sufficient evidence to support the development of an analysis (EUA or UAA) to amend a designated use.

II. Authority for Amending a Designated Use

The objective of the Clean Water Act ("CWA"), as established in Section 101(a), is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. To do this, it is the goal of the CWA, wherever attainable, to protect for the propagation of fish, shellfish, and wildlife and provide for recreation in and on the water. In order to achieve this, states and tribes are required, pursuant to 40 C.F.R. § 131.20, to adopt water quality standards that define the water quality goals of a water body by designating the use or uses of the water and by setting criteria that protect the designated uses.

The State of New Mexico's Water Quality Act ("WQA") (NMSA 1978, §§ 74-6-1 to -17) is the mechanism by which the State establishes the goals and objectives for protecting water quality within the state as it pertains to the CWA. The Water Quality Control Commission ("WQCC") is delegated as the control agency for all purposes of the federal CWA. The duties and powers of the WQCC under Section 74-6-4 of the WQA include adopting water quality standards based on credible scientific data and other appropriate evidence. The WQCC has codified its Standards for Interstate and Intrastate Surface Waters under 20.6.4 New Mexico Administrative Code ("NMAC"). These water quality standards contain the designation of a waterbody's use and the criteria which protect for that designated use.

The WQCC, having no technical staff of its own, delegated the responsibilities for water quality management and CWA activities involving surface waters to the New Mexico Environment Department ("NMED"). The NMED Surface Water Quality Bureau ("SWQB") is responsible for evaluating and proposing amendments to New Mexico's Standards for Interstate and Intrastate Surface Waters (20.6.4 NMAC). Although proposed by NMED, amendments to the State's water quality standards as authorized under the WQA, must be adopted by the WQCC before they can be filed with the State Records Center and become effective for State purposes. In accordance with 40 C.F.R. § 131.20, the State must submit the amended standards within 30 days of the final state action to adopt and certify the adoption of the revisions to the U.S. Environmental Protection Agency ("EPA") for review and approval for purposes of implementing the CWA.

There are three general conditions to which a designated use may be amended.

A. In accordance with 40 C.F.R. § 131.10(g) and 20.6.4.15 NMAC, if a designated use, that is not an existing use, is not attainable due to one of the six factors identified under 40 C.F.R. § 131.10(g) it

may be removed through a UAA. The UAA must determine the factor preventing the attainment of the current use, provide evidence supporting the highest attainable use that could be attained, and demonstrate that the proposed designated use is not less stringent than the existing use; or

B. In accordance with 40 C.F.R. § 131.10(i) the state reviews and revises applicable water quality standards to reflect the uses actually being attained should those be more stringent than the current designated uses; or

C. In accordance with 40 C.F.R. § 131.20, the state reviews applicable water quality standards for which there is new (not considered before) information that has become available. If such new information indicates that more stringent uses specified in section 101(a)(2) of the CWA are attainable, the state revises its standards accordingly, usually during a Triennial Review.

III. Reasoning and Scope of Evaluation.

There is reasonable evidence that there is information not considered in its entirety before that may demonstrate a more stringent aquatic life use is attainable for classified intermittent waters within lands managed by the U.S. Department of Energy ("DOE") within LANL (20.6.4.128 NMAC).

There is also new information available providing reasonable evidence that the hydrologic regime for some tributaries within LANL are ephemeral. Based on low-flow conditions, the aquatic life use for these tributaries is limited aquatic life. Therefore, no change is warranted to 20.6.4.128 NMAC regarding these ephemeral tributaries.

The scope of this work plan is to evaluate if there is sufficient information to determine the existing uses for certain classified intermittent waters within LANL in 20.6.4.128 NMAC.

IV. Designated Uses

A. Current Designated Uses.

At present, there are three classified water quality standards segments that describe and protect surface waters on the Pajarito Plateau. The designated uses for ephemeral and intermittent portions of waters within LANL include livestock watering, wildlife habitat, limited aquatic life and secondary contact are identified in 20.6.4.128 NMAC.

20.6.4.128 RIO GRANDE BASIN: - <u>Ephemeral and intermittent</u> portions of watercourses within lands managed by U.S. department of energy (DOE) within LANL, including but not limited to: Mortandad canyon, Cañada del Buey, Ancho canyon, Chaquehui canyon, Indio canyon, Fence canyon, Potrillo canyon and portions of Cañon de Valle, Los Alamos canyon, Sandia canyon, Pajarito canyon and Water canyon not specifically identified in 20.6.4.126 NMAC. (Surface waters within lands scheduled for transfer from DOE to tribal, state or local authorities are specifically excluded.)

A. Designated uses: livestock watering, wildlife habitat, <u>limited aquatic life</u> and secondary contact.

B. Criteria: the use-specific criteria in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: the acute total ammonia criteria set forth in Subsection K of 20.6.4.900 NMAC (salmonids absent).

[20.6.4.128 NMAC - N, 5/23/2005; A, 12/1/2010]

(emphasis added)

B. Historical Review of Designated Uses.

Dating back to at least 1991, perennial reaches of tributaries to the Rio Grande in Santa Fe county, unless included in other segments, were designated with a high quality coldwater aquatic life use as currently identified in 20.6.4.121 NMAC. The most recent amendment to 20.6.4.121 NMAC was adopted in 2013 but still reflects the description of water bodies and the designated aquatic life use.

20.6.4.121 RIO GRANDE BASIN: - Perennial tributaries to the Rio Grande in Bandelier national monument and their headwaters in Sandoval county and all perennial reaches of tributaries to the Rio Grande in Santa Fe county unless included in other segments and excluding waters on tribal lands.
A. Designated uses: domestic water supply, high quality coldwater aquatic life, irrigation, livestock watering, wildlife habitat and primary contact; and public water supply on Little Tesuque creek, the Rio en Medio, and the Santa Fe river.
B. Criteria: the use-specific numeric criteria set forth in 20.6.4.900 NMAC are applicable to the designated uses, except that the following segment-specific criteria apply: specific conductance 300 µS/cm or less; the monthly geometric mean of E. coli bacteria 126 cfu/100 mL or less, single sample 235 cfu/100 mL or less.
[20.6.4.121 NMAC - Rp 20 NMAC 6.1.2118, 10/12/2000; A. 5/23/2005; A, 12/1/2010; A, 2/14/2013]
[NOTE: The segment covered by this section was divided effective 5/23/2005. The standards for the additional segments are under 20.6.4.126, 20.6.4.127 and 20.6.4.128 NMAC.]
(emphasis added)

Although 20.6.4.121 NMAC notes the segment was divided to include an additional section under 20.6.4.128 NMAC, the tributaries identified in 20.6.4.128 NMAC specifically describe the ephemeral and intermittent portions, not perennial reaches of tributaries to the Rio Grande, as found under 20.6.4.121 NMAC. Therefore, prior to the adoption of 20.6.4.128 NMAC, there were no designated uses specified for ephemeral and intermittent portions of waters within LANL. As an additional note regarding the tributaries historically classified under 20.6.4.121 NMAC, tributaries within LANL (perennial or non-perennial) actually discharge to the Rio Grande within Los Alamos county, not Santa Fe county.

20.6.4.128 RIO GRANDE BASIN - Ephemeral and intermittent portions of watercourses within lands managed by U.S. department of energy (DOE) within LANL, including but not limited to: Mortandad canyon, Cañada del Buey, Ancho canyon, Chaquehui canyon, Indio canyon, Fence canyon, Potrillo canyon and portions of Cañon de Valle, Los Alamos canyon, Sandia canyon, Pajarito canyon and Water canyon not specifically identified in 20.6.4.126 NMAC. (Surface waters within lands scheduled for transfer from DOE to tribal, state or local authorities are specifically excluded.)

A. Designated Uses: livestock watering, wildlife habitat, limited aquatic life and secondary contact.

B. Criteria:

(1) The use-specific criteria in 20.6.4.900 NMAC, except the chronic criteria for aquatic life are applicable for the designated uses listed in Subsection A of this section.

(2) The monthly geometric mean of E. coli bacteria 548 cfu/100 mL or less; single sample 2507 cfu/100 mL or less (see Subsection B of 20.6.4.14 NMAC).

(3) The acute total ammonia criteria set forth in Subsection K of 20.6.4.900 NMAC (salmonids absent) are applicable to this use.

[20.6.4.128 NMAC - N, 05-23-05]
(emphasis added)

This demonstrates that ephemeral and intermittent waters within LANL were not previously classified. Therefore, prior to WQCC adoption of 20.6.4.128 NMAC in 2005, these waters did not have designated uses in the state's water quality standards. In accordance with 40 C.F.R. § 131.10(k), a use attainability analysis is not required whenever the state designates a use under Section 101(a)(2) of the CWA for the first time. Secondary contact is a subcategory protecting for recreation in and on the water; and although the limited aquatic life use designation does not have criteria for dissolved oxygen, pH or chronic exposure of numeric criteria listed under 20.6.4.900 NMAC, it does have numeric criteria protective of acute exposure to aquatic life and is a subcategory for aquatic life uses, as allowed by 40 C.F.R. § 131.10(c).

In regard to adopting the new section under NMAC for ephemeral and intermittent waters within LANL, NMED's Direct Written Testimony from the Triennial Review that became effective for state purposes on May 23, 2005, stated (emphasis added):

> *NMED proposes a new segment to classify waters based on a study by the U.S. Fish and Wildlife Service. Exhibit 23. The segment is identical to LANL's original proposal. Criteria and uses proposed are those included in the proposal for all other ephemeral and intermittent surface waters in Section 20.6.4.98. Livestock watering is an appropriate use because it has historically been presumed to be a use for all surface waters of the state. See also the discussion accompanying NMED's proposal for Section 20.6.4.121a. (emphasis added)*

It should be noted that during the same Triennial Review that 20.6.4.128 NMAC was adopted, language for 20.6.4.98 NMAC was also proposed. The proposed language for 20.6.4.98 NMAC initially included both ephemeral and intermittent waters with designated uses for wildlife habitat, livestock watering, limited aquatic life and secondary contact, just as 20.6.4.128 NMAC did. However, the approved version of 20.6.4.98 NMAC reflected the WQCC's determination that intermittent waters were able to attain and support a more stringent designated aquatic life use, which applies, "…chronic criteria to intermittent waters because of the potential long-term exposure of aquatic life to pollutants." Based on the evidence presented, the WQCC created not one, but two NMAC sections designating default protections for ephemeral and intermittent waters: 20.6.4.97 NMAC and 20.6.4.98 NMAC, respectively. The designated uses under Section 101(a)(2) of the CWA for unclassified ephemeral waters specifically listed under 20.6.4.97 NMAC were those uses initially proposed (limited aquatic life and secondary contact). However, based on testimony and evidence presented at the hearing, unclassified intermittent waters under 20.6.4.98 NMAC were determined to have a more stringent attainable aquatic life use as supported under Section 101(a)(2) of the CWA. This determination was, in part, supported by a study conducted on four tributaries within LANL by the U.S. Fish and Wildlife Service (Lusk and MacRae, 2002). The Statement of Reasons for Amendment of Standards [WQCC 03-05(R)] provides the WQCC's reasoning for the determination to adopt unique, default aquatic life uses for ephemeral and intermittent waters as found in 20.6.4.97 NMAC and 20.6.4.98 NMAC, respectively:

*"**187**. The Commission rejects NMED's proposal to combine ephemeral and intermittent waterbodies into a single category of non-perennial waterbodies, because there are recognizable differences, particularly with respect to hydrologic realities. Further, the notice in this triennial review that this would be proposed was not optimal; the original proposals did not include such a plan.*

***188.** The Commission adopts NMED's proposal to create a provision containing default designated uses for unclassified nonperennial waters to ensure that all unclassified nonperennial waters are protected in compliance with the CWA. The default designated uses are livestock watering, wildlife habitat, secondary contact and limited aquatic life. Each use is appropriate for the following reasons:*

(a) The section formalizes the WQCC's presumption that livestock watering and wildlife habitat are default uses for all unclassified waters. See Section 20.6.4.10.A. Wildlife habitat is required by the CWA Section 101(a)(2) and EPA's regulations, 40 CFR 131.2. Livestock watering should be protected because of its importance to New Mexico and the likelihood that livestock will use these waters when available.

(b) Recreation and aquatic life are required uses under the CWA.

(c) Regarding the primary contact use, the CWA and EPA regulations require the protection of recreation in and on the water. Primary contact criteria for E. coli bacteria are calculated using the specified formulae based upon an illness rate and the extent of anticipated use. In the case of nonperennial waters, both the likelihood of exposure by ingestion and the frequency of use for recreation are low. NMED proposes criteria that protect primary contact at the rate of 14 illnesses per thousand (assuming infrequent use). The resulting criteria are a monthly geometric mean of 548/100 mL, and a single sample criterion 2507/100 mL. These criteria are adopted because they satisfy EPA's goal of protecting primary contact while taking into consideration the less frequent use of these waters.

(d) Regarding the aquatic life use, the CWA and EPA regulations require the protection and propagation of fish and shellfish. All surface waters must include an aquatic life use unless a UAA has determined that the use is not attainable. The limited aquatic life subcategory is appropriate for nonperennial waters because the other subcategories are temperature-specific. Moreover, the limited aquatic life subcategory "fits" the type of aquatic communities likely to be found in nonperennial waters. Finally, the limited aquatic life subcategory is appropriate because it satisfies the CWA and EPA regulations while avoiding the substantial burden on the state of preparing UAAs to justify not designating another subcategory of the aquatic life use for nonperennial waters.

***189**. The Commission rejects NMED's proposal to apply chronic aquatic life criteria to ephemeral waters because it desires more input and study before making such a change; however, the Commission believes it is appropriate to apply acute criteria to ephemeral waters because of the potential short-term exposures of aquatic life to pollutants.*

***192**. The Commission adopts NMED's proposal to create a provision containing default designated uses for unclassified intermittent waters to ensure that all unclassified intermittent waters are protected in compliance with the CWA. Intermittent waters have the same default uses as ephemeral waters for the same reasons stated above in paragraph 188, except that it is "aquatic life" rather than "limited aquatic life." Aquatic life in intermittent waters have a longer residence time, and there are many intermittent reaches of perennial streams. The Commission believes it is appropriate to apply chronic criteria to intermittent waters because of the potential long-term exposure of aquatic life to pollutants.*

> ***193**. The Commission rejects EBID's proposal to establish "coldwater aquatic habitat" as the designated use for the reasons stated above in paragraphs 41-44. [Note; these are listed below for reference.]*
>
> > ***41.** The Commission adopts NMED's proposal to define "aquatic life" in connection with its adoption of NMED's proposal to replace the designated use of "fishery" with "aquatic life." This change is supported by and based upon EPA guidance to conform the definition to its intended breadth. The CWA objectives of restoring and maintaining biological integrity and the goal of protecting and propagating fish and shellfish require the consideration of all the organisms comprising the aquatic community, not just the fish and shellfish.*
> >
> > ***42.** The term "fishery" has created confusion among the public for many years, and (in the related subcategories) also had the effect of excluding aquatic communities from protection because fishwere not present.*
> >
> > ***43.** EPA's recommended aquatic life criteria are based on the toxicity of pollutants to a variety of nonfish aquatic species.*
> >
> > ***44.** The Commission rejects Elephant Butte Irrigation District's (EBID's) proposal to define "coldwater aquatic habitat," because "aquatic life" is the term EPA uses for the development of criteria to protect this designated use, and a different term would create ambiguity in purpose and scope."*

It appears that, although the reasoning and evidence was the same for non-perennial waters within LANL, this determination was not carried over and reflected in the adoption of 20.6.4.128 NMAC.

The Statement of Reasons for Amendment of Standards [WQCC 03-05(R)] provides the WQCC's reasoning for the determination to adopt aquatic life uses under 20.6.4.128 NMAC:

> *"…The Commission adopts another new segment proposed by NMED and [University of California] UC, for the same reasons as set out…in paragraphs 235-236. The proposed uses are appropriate…".*
>
> ***235.** Both UC and NMED proposed to segment and adopt segment-specific standards for waters within or near LANL. The segments, set out now as segments 126, 127 and 128, are identical, but different designated uses and criteria were urged in this segment.*
> ***236.** The Commission adopts this new segment to classify waters based upon an intensive study by the USFWS. The study supports the designated uses of coldwater aquatic life, wildlife habitat, secondary contact, and livestock watering. The aquatic life, wildlife habitat and recreation uses are required by CWA Section 101(a)(2) unless a UAA supports not designating them. For this segment, coldwater is the appropriate subcategory of aquatic life use because it is supported by the USFWS report and is consistent with the aquatic life use in adjacent Section 20.6.4.121, which includes tributaries of the Rio Grande in Bandelier National Monument (where high quality coldwater is the designated use). For this segment, secondary contact is the appropriate subcategory of recreation because full-body contact in these small streams is unlikely and infrequent, and if it does occur the proposed criteria offer a proper level of protection. Finally, the uses of wildlife habitat and livestock watering are appropriate. The WQCC has historically presumed these uses for all unclassified surface waters. There is no question about wildlife using these streams. There*

> *also is evidence that livestock watering is an existing use. Laboratory publications acknowledge the presence of livestock on or adjacent to this segment, including horseback riding, cattle grazing and free-range chickens and dairy goats. The designation of livestock watering is based on both the existing use of these waters by livestock, as well as for the protection of downstream livestock watering uses. (emphasis added)*

Although specifically identified under the reasoning for adoption of language for 20.6.4.126 NMAC, the following findings were also documented by the WQCC in their Statement of Reasons for Amendment of Standards [WQCC 03-05(R)]. These findings, referenced for amendments to 20.6.4.126 NMAC, are just as applicable to the intermittent waters under 20.6.4.128 NMAC and should be considered.

> ***237.*** *The Commission rejects UC's proposal to designate just limited aquatic life because USFWS demonstrated that shellfish typically found in coldwater aquatic communities is present in these streams. The coldwater subcategory is intended for "the protection and propagation of fish, shellfish and wildlife." Accordingly, the presence of shellfish indicative of a coldwater aquatic community establishes an existing use, even in the absence of fish. In addition, the USFWS documented existing macroinvertebrate communities in all of these streams (except Water Canyon). These macroinvertebrate communities (except Sandia Canyon) compare favorably (only slightly impaired or full support - impacts observed) to Upper Los Alamos Canyon, a coldwater fishery at the time of the study. The USFWS also determined that eight species in Los Alamos and Pajarito Canyons (identified by NMED) were classified by the Idaho Department of Environmental Quality (DEQ) as preferring coldwater. Moreover, the Laboratory's invertebrate data included several species that prefer coldwater in Los Alamos, Pajarito, Sandia and Chaquehui Canyons. Finally, to the extent that the absence of fish is relevant to the subcategory designation, the term "existing use" has a broader meaning than "existing on this date". The absence of fish in 2003 is not the benchmark for designation of an aquatic life use.*
> ***240.*** *The Commission rejects UC's proposed dissolved oxygen (DO) criterion of 5 mg/l for Pajarito Canyon, Starmers Gulch and Water Canyon, and 4 mg/l for Canon de Vale and Sandia Canyon, and adopts NMED's proposed DO criterion of 6 mg/l for all waters in this segment in order to protect the designated use of coldwater aquatic life. (emphasis added)*

The WQCC's Statement of Reasons for Amendment of Standards [WQCC 03-05(R)] also addressed the uses that are outside of the uses required under Section 101(a)(2) of the CWA. These included the proposal by the University of California (UC) to not designate livestock watering as a use for waters within lands managed by the DOE. These findings, referenced for amendments to 20.6.4.126 NMAC, are just as applicable to the intermittent waters under 20.6.4.128 NMAC and should be considered.

> ***238.*** *The Commission rejects UC's proposal not to designate the livestock watering use on the basis that it is not an existing or attainable use because livestock are not permitted on Laboratory property and will not be in the foreseeable future, pointing to fencing and security patrols as evidence of an intent to exclude livestock. The evidence indicates that livestock continue to use streams on Laboratory property despite UC's intent to exclude them; NMED has observed tracks, feces, wallows, and overgrazing, and has discussed the impacts of livestock grazing on surface water on Laboratory property with UC*

> *representatives. Accordingly, livestock watering is an existing use, and cannot be removed without a UAA.*
> ***239.*** *At the hearing, UC suggested the streams in this segment could be divided between lower reaches used by livestock and upper reaches that are not used by livestock. It suggested that the division points could be based on "breaks in the slopes and positions of the springs." UC did not make any proposal to this effect, however, and the Commission will not adopt such a division after the hearing in the absence of an earlier proposal. (emphasis added)*

In addition to the aquatic life uses, the Statement of Reasons for Amendment of Standards [WQCC 03-05(R)] provides the WQCC's reasoning for the determination to adopt recreational uses under 20.6.4.128 NMAC:

> ***202.*** *The Commission adopts NMED's proposal to change the bacterial criteria type and values based on EPA guidance. EPA commented that this amendment did not include the supporting documentation. EPA guidance states that a secondary contact criterion five times the primary contact criterion is acceptable. Recent EPA guidance continues to recommend a secondary contact criterion five times the primary contact criterion for the geometric mean, but does not make a similar recommendation for a single sample maximum. Translating from fecal coliform to E. coli criteria, EPA guidance provides a range of acceptable values for E. coli based on projected illness rates. From this range, it is appropriate to select a geometric mean density of 548/100 mL, which is associated with an illness rate of 14 per 1000 persons exposed to bacteria in water by ingestion as a result of immersion, and a single sample maximum of 2507/100 mL for waters infrequently used for full body contact at a 95% confidence limit. NMED proposes to make similar changes in other segments for these reasons (Sections 113, 116, 124, 126, 128, 206, 207, 213, 219, 221, 308 and 310), and the Commission has adopted these changes below on the same basis. (emphasis added)*

The changes became effective under state law on May 23, 2005. When the proposed amendment was submitted to EPA for review and approval in accordance with 40 C.F.R. § 131.20, EPA provided the following response on December 29, 2006:

> *"…[B]ased on a review of the record, EPA was unable to take action on a few provisions because they did not meet the minimum requirements for a water quality standards submission. See 40 CFR 131.6(b) and (f). Specifically, EPA was unable to take action on the limited aquatic life, aquatic life and/or secondary contact recreation use designations for Sections 20.6.4.97, 20.6.4.98 and 20.6.4.99. EPA strongly supports the concept the state has used in developing standards for unclassified ephemeral, intermittent and perennial surface waters; however, adequate supporting documentation (such as a use attainability analysis) was not available which would allow us to take action on all portions of these provisions. Similarly, EPA was unable to take action on the new and for revised use designations and modifications for six classified segments because adequate supporting documentation (such as a use attainability analysis) was not available to support the modifications. See segments 20.6.4.126, 128, 221, 310, 701 and 702." (emphasis added)*

Although the specific citation is not provided, EPA appears to assert, on the basis of 40 C.F.R. § 131.10(j)(1), that those waters classified under 20.6.4.128 NMAC were waters that were designated for the first time and when adopted in 2005 were not designated with a use under Section 101(a)(2) of the CWA and therefore a UAA was required. NMED finds this statement to be less than accurate, as limited aquatic life and secondary contact are subcategories protecting for Section 101(a)(2) uses. However, the state submitted a UAA using the study by the U.S. Fish and Wildlife Service (Lusk and MacRae, 2002), filed as testimony in the Triennial Review, as supporting evidence for the designated uses. The evidence in the U.S. Fish and Wildlife Service study (Lusk and MacRae, 2002) supports more stringent aquatic life protections, which is contrary to the findings of the NMED UAA. However, EPA approved the supporting UAA on September 12, 2007 establishing limited aquatic life use for ephemeral and intermittent waters within LANL.

In September 2014, the non-profit organization Amigos Bravos filed proposed amendments and a statement of basis to change the designated use for all waters in 20.6.4.128 NMAC from Limited Aquatic Life to Marginal Warmwater Aquatic Life (2013 Triennial Review Pleadings Log) arguing these waters were under-protected. The basis for the proposed amendment, as presented by Amigos Bravos, was to maintain consistency in the application of aquatic life uses for intermittent waters, and only until such a time there is a demonstration (i.e., UAA) that the waterbody is unable to attain that designated use should it be amended to Limited Aquatic Life. Additionally, Amigos Bravos found fault in the approval of the 2005 rule change creating 20.6.4.128 NMAC since, as argued, the designated aquatic life use was made less stringent without supporting evidence for the change through the required UAA process. The submittal of a UAA post-facto (i.e., after the 2005 Triennial Review) for EPA approval was considered a "…textbook example of arbitrary and capricious action."

Amigos Bravos withdrew the proposed amendment in exchange for certain commitments made by other parties to the proceeding. Amigos Bravos, the U.S. DOE, Los Alamos National Security LLC and NMED submitted a joint stipulation (WQCCb, 2015) regarding proposed changes to 20.6.4.128 NMAC on October 9, 2015. This agreement required the parties meet and confer regarding the appropriate level of water quality protection for 20.6.4.128 NMAC. NMED was stipulated to petition the WQCC no later than the next Triennial Review for changes to those waters on which the parties came to agreement. It was recognized in the agreement and in discussions with all parties that additional data was needed to determine the appropriate water quality protections. In part, this required documenting the hydrologic regime of the tributaries.

This work plan is the result of the ongoing efforts made by the parties to evaluate, collect and evaluate if sufficient evidence is available to determine the appropriate water quality protections for classified waters under 20.6.4.128 NMAC.

C. Protection of Downstream Water Quality Standards

In accordance with 40 CFR 131.10(b), when states are considering a designated use amendment, they are required to take into consideration the water quality standards of downstream waters and shall ensure that its water quality standards provide for the attainment and maintenance of the water quality standards of downstream waters. As it pertains to this evaluation, all tributaries under this evaluation discharge to the Rio Grande in Los Alamos county. As this evaluation is considering a more stringent aquatic life designated use an existing use analysis would not cause further degradation to the downstream waters.

V. Antidegradation Evaluation

A. Outstanding National Resource Waters

The state's Antidegradation policy is one part of the state's Water Quality Standards, codified under *Standards for Interstate and Intrastate Surface Waters* (20.6.4 NMAC). The policy provides protections for surface water quality as required under 40 C.F.R. § 131.12. Consistent with 40 C.F.R. § 131.12, 20.6.4.8(A)(3) NMAC states that, "No degradation shall be allowed in waters designated by the commission as an Outstanding National Resource Water (ONRW) except under those provisions identified under subparagraphs (a) through (e), and in Paragraph (4) of this Subsection A."

Currently, there are no ONRWs for any of the classified ephemeral and intermittent waters within LANL under 20.6.4.128 NMAC. Although there are no ONRWs, this evaluation only considers designated uses that would be more stringent than currently applied for intermittent waters currently classified under 20.6.4.128 NMAC, and therefore will not cause further degradation.

B. Existing Uses

Existing uses, as defined under 20.6.4.7(E)(3) NMAC, are those uses actually attained in a surface water of the state on or after November 28, 1975, whether or not they are designated uses. The existing use may, or may not, be the current water quality of any given waterbody. Pursuant to 40 C.F.R. § 131.10(i) designated uses are to be at least as stringent as the existing use and shall be revised accordingly, if they are not. Existing uses are based on actual attainment of the water quality criteria to support the use.

Aquatic life uses have several criteria including temperature, pH, dissolved oxygen and in some cases specific conductivity. In addition, all sub-categories of the designated aquatic life use include criteria listed in tables under 20.6.4.900 NMAC.

The findings revealed a limited amount of data have been collected by the Surface Water Quality Bureau for water bodies in 20.6.4.128 NMAC. However, the U.S. Fish and Wildlife Service investigated the biological, chemical, and physical characteristics of four intermittent streams on the LANL in New Mexico during 1996 and 1997 (Lusk and MacRae, 2002). Stream width, depth, substrate, temperature, velocity, cover, and other physical and habitat parameters were measured. Water, sediment, sediment porewater, and biota were analyzed for various inorganic, organic, or radioactive chemicals. Habitat suitability models and rapid bioassessment protocols were used to identify suitable living space for fish and benthic macroinvertebrates. Toxicity tests of water and sediment porewater and surveys for benthic macroinvertebrates were also conducted. This study was used as evidence for establishing designated uses for intermittent waters during the Triennial Review that became effective May 23, 2005, and provides water quality data specific to four intermittent tributaries within the study area. The methods and supporting evidence for use of this data is detailed in the study and found to be sufficient for evaluation of existing uses for purposes of this work plan.

The summary of data from the US Fish and Wildlife (Lusk and MacRae, 2002) presented in Table 1 shows that water quality in intermittent tributaries within LANL supports a more stringent aquatic life than currently designated.

Table 1. *Summary of Stream Field Data (Lusk and MacRae, 2002)*

Tributary	Average Temperature C° (range)	Average pH s.u. (range)	Average DO mg/L (range)	Average conductivity mS/cm (range)
Los Alamos	6.6 C (<0 to 16.7)	7.56 (6.98-7.86)	9.6 (5.2-13.3)	0.09 (0.01-0.14)
Sandia	9.4 (<0 to 23)	7.89 (7.11-8.70)	8.6 (4.3-17.6)	0.77 (0.12->2)
Canon de Valle	8.1 (<0 to 22.6)	7.56 (6.89-9.27)	8.4 (5.4-15.4)	0.21 (0.07-0.27)
Pajarito	6.9 (<0 to 17.8)	7.66 (6.79-7.99)	9.3 (5.7-13.0)	0.13 (0.04-0.35)

The maximum temperature was determined by using the uppermost portion of the range for each tributary. The highest four-hour or six-hour temperature over three consecutive days (4T3 or 6T3, respectively) was not obtainable given this survey but this does not prevent establishing an existing use.

The study concluded that "[a]ll stream segments were found to contain cold, flowing water and a community of aquatic life, plants, and wildlife" preferential to cold water. Based on the evaluation of water quality and other supporting evidence, Lusk and MacRae (2002) concluded that the intermittent portions of Los Alamos Canyon, Sandia Canyon, Pajarito Canyon and Cañon de Valle have an existing coldwater aquatic life use. Based on other supporting evidence considered under this work plan, including the ecoregional, physiographic and hydrologic characteristics found on the Pajarito Plateau, sufficient evidence may be available to demonstrate similar existing uses for other intermittent tributaries. Data relevant to the EUA is presented in Section VI of this work plan.

In addition to the 2002 Lusk and MacRae study, the State's Integrated Report provides some information regarding the current water quality conditions. The information from the Integrated Report does not give conclusive evidence of existing uses but can provide some historical references to when impairments may have been first recognized, indicating the existing use originates from a later date.

This work plan does not evaluate the secondary contact designated use, as this use was previously demonstrated to be the highest attainable recreational use for these waters. In addition, this work plan does not evaluate the designated uses for livestock watering and wildlife habitat as these uses are currently designated for all waters of the state.

VI. Threatened and Endangered Species Evaluation

The approval of new and revised WQS by a Federal agency is contingent on results from an endangered and threatened species review under section 7(a)(2) Endangered Species Act ("ESA"). If there is reason to believe that an endangered or a threatened species can be affected or jeopardized by the implementation of a WQS change, then the Federal agencies, through ESA consultations, shall ensure that the appropriate actions are implemented in the analysis to adhere to the ESA (ESA 2019). The Federal agency that approves state's Water Quality Standards is the EPA. In order to assist with the evaluation of any WQS changes, a UAA should include a preliminary screening of geographical areas being analyzed for potential designated use changes.

Determination of threatened and endangered species will be completed by using the U.S. Fish and Wildlife Services Information for Planning and Consultation planning tool. To determine if any species are within the study area, a polygon encompassing the area managed by the DOE within LANL will be manually drawn along the boundaries of LANL. This polygon encompasses all the tributaries within the study area and will

provide adequate data on any threatened species, endangered species or critical habitats that may be affected by the proposed action.

Although there may be areas with listed species or critical habitat, this evaluation is considering designated uses that would be more stringent for intermittent waters currently classified under 20.6.4.128 NMAC and are not believed to negatively affect or degrade habitat.

VII. Data Review

A. General Site Conditions

1. Physiographic and Ecological Conditions

The Pajarito Plateau, which in part includes those waters managed by the DOE within LANL, refers to the area east of the Valle Caldera and west of the Rio Grande in Los Alamos County, New Mexico, approximately 35 miles northwest of Santa Fe. The Pajarito Plateau was formed through volcanic flows and erosion. Characteristic of a plateau, it consists of steep fingerlike canyons that have an elevational profile of over 1,000 feet that lead up to a relatively flat elevational surface of approximately 7,320 feet. The Pajarito Plateau is within the ecological region 21 (d, g and h) and 22 (g and h) at the base where these tributaries converge with the Rio Grande (Griffin et al, 2006). The waters being evaluated under this work plan drain in a southeasterly direction from the east rim of the Valle Caldera towards the Rio Grande. The elevation, aspect and slope of these physiographic features have a direct influence on the hydrology and attainable water temperature of tributaries being evaluated which influences the aquatic life. Although recognized as being influential on determining attainable uses, the physiographic and ecological conditions would be reflected in the water quality so do not require an independent evaluation. For purposes of an EUA, the physiographic and ecological conditions would only be used as supporting evidence for the determination of the existing use.

2. Land Use and Anthropogenic History

Historically the area around the Pajarito was inhabited and utilized by local indigenous tribes as noted in the abundant archaeological evidence throughout the area. Other than a few noted homesteaders and a boys' school founded by Ashley Pond in 1917, the area remained relatively undeveloped until the establishment of LANL in 1942 (Machen, McGehee and Hoard, 2013). As provided on their website (https://www.lanl.gov/about/facts-figures/index.php), LANL is a DOE facility that operates on approximately 40 square miles of DOE-owned property on the Pajarito Plateau, with more than 1,000 buildings, 13 nuclear facilities and a power plant in 47 technical areas, connected by 268 miles of roads, 100 miles of which are paved. Similar to the physiographic and ecological conditions, the land use and anthropogenic history influences the attainable uses of a tributary; however, in this case the land use and anthropogenic history does not alter the existing uses. For purposes of an EUA, the land use and anthropogenic history is mentioned for informational purposes only and will not be used in the determination of the aquatic life existing use.

3. Urban Areas

The non-perennial tributaries being evaluated transect through LANL and the Town of Los Alamos, which by definition under the U.S Census Bureau is considered an urban cluster (U.S. Census Bureau, 2010). Today, the town of Los Alamos is the county seat for Los Alamos county and has an estimated population of 12,019 (U.S. Census Bureau, 2010) and 1,085 nonfarm businesses (U.S. Census Bureau 2012). As reported on their website (https://www.lanl.gov/about/facts-figures/index.php), LANL is northern New Mexico's largest employer second only to the State of New Mexico with 12,752 employees, including its

contractors, students and post-doctoral researchers. Most employees reside outside of Los Alamos. The details of urban areas were not found to be relevant in determining if an EUA is warranted for the establishment of more stringent designated uses. Thus, specifics concerning urban areas will not be expanded upon for use as supporting evidence in consideration of an EUA.

4. National Pollutant Discharge Elimination System (NPDES) Permits

The Pajarito Plateau, and LANL in particular, has two NPDES permits with outfalls discharging to several of the tributaries being evaluated under this work plan. Under 40 C.F.R. § 131.10(g)(2), a designated use may be removed if low-flow conditions prevent attainment of a designated use; unless the flow can be augmented by a permitted discharge. Since consistent discharges from a permitted facility could provide more permanence of stream flow, in theory this condition could support more sensitive populations of aquatic life. For those waterbodies to which consistent discharges under an NPDES permit occur, the hydrologic conditions must be considered in determining the hydrologic regime. The use of the hydrology protocol survey is a tool by which the waterbodies' condition can be evaluated with consideration of permitted discharges. The NPDES permits to waters being considered under this work plan are summarized below and outfall flows will need to be considered should a EUA be warranted. In addition, as the regulated community affected by a change to the designated use, the permittee(s) (LANL) must be considered as stakeholders and engaged accordingly.

Table 2. *NPDES Outfall Locations in Study Area*

PERMIT NUMBER	PERMIT/ FACILITY NAME	WQS	OUTFALL ID	DISCHARGES TO
NM0028355	LANL (Major)	20.6.4.126	Outfall 001; Outfall 13S; Outfall 03A027; Outfall 03A199	Perennial portions of Sandia Canyon
NM0028355	LANL (Major)	20.6.4.128	Outfall 051-RLWTF; Outfall 03A022; Outfall 04A022; Outfall 03A181	Mortandad Canyon
NM0028355	LANL (Major)	20.6.4.128	Outfall 13S	Canada del Buey
NM0028355	LANL (Major)	20.6.4.128	Outfall 03A048	Los Alamos Canyon
NM0028355	LANL (Major)	20.6.4.128	Outfall 03A113	Ephemeral (Intermittent) portions of Sandia Canyon
NM0028355	LANL (Major)	20.6.4.128	Outfall 03A160	Ephemeral (Intermittent) portions of Ten Site Canyon
NM0028355	LANL (Major)	20.6.4.128	Outfall 05A055	Ephemeral (Intermittent) portions of Cañon de Valle
NM0030759	LANL Storm Water	20.6.4.97 20.6.4.126 20.6.4.128	Not Applicable	Mortandad; Canada del Buey; Los Alamos Canyon; Ancho Canyon; Bayo Canyon; Chaquehui Canyon; Fence Canyon; Pajarito Canyon; Two-mile Canyon; Three-mile Canyon; Potrillo Canyon; Pueblo Canyon; Rendija Canyon

5. Diversions and impoundments.

The area under review is geographically broad and contains numerous diversions and impoundments. The details of these are not relevant to determining if an EUA is warranted for the establishment of more stringent designated uses. Thus, specifics concerning diversions and impoundments were not expanded upon for use as supporting evidence in consideration of an EUA.

B. Physical and Chemical Data

Physical data will be used for evaluation of water quality and quantity to determine the existing uses and the highest attainable use. The data necessary to determine these conditions and the methodology that demonstrates use of the data for this analysis are summarized in Table 3.

1. Hydrology Protocol Surveys

Parameters

The Hydrology Protocol is a survey method approved by the Commission and EPA Region 6 as a tool to evaluate hydrological, geomorphic and biological indicators for use in determining the hydrologic regime (ephemeral, intermittent and perennial) of tributaries in New Mexico. The results of the Hydrology Protocol surveys provide a determination of the hydrologic conditions of the tributaries within LANL that can serve as supporting evidence for categorizing and determining the existing uses. The scoring from the Hydrology Protocol will be used to evaluate whether a tributary is ephemeral, intermittent or perennial.

Assessment

Non-perennial streams and tributaries within LANL are currently classified under 20.6.4.128 NMAC. Although classified, these waters have not undergone an in-depth investigation to determine the hydrologic regime delineating between ephemeral or intermittent. This is a critical aspect when determining a designated use given that waters which do not sustain flow for extended durations, such as with ephemeral waters, chronic exposure as it pertains to aquatic life is not applicable as the temporal duration of water being present is less than the temporal duration of a chronic exposure. On the other end, for waters that do have extended duration of water being present, such as with intermittent waters, chronic exposure is critical for the protection of aquatic life.

Since the hydrologic regime for a waterbody is the greatest limiting factor for determining the highest attainable aquatic life use, the results from hydrology protocol surveys will provide data to support the existing use determination.

Demonstration

Since the Hydrology Protocol evaluates hydrological, geomorphic and biological indicators that are most relevant to the persistence of water, the results from this survey can be used to support establishing the attainable aquatic life uses.

If a tributary currently classified in 20.6.4.128 NMAC is determined to be ephemeral from the scoring on the Hydrology Protocol survey, it is likely that the highest attainable aquatic life use for that tributary would be limited aquatic life, and due to limited low-flow conditions would not include criteria for chronic exposures. Those tributaries that are determined to be ephemeral, would be identified specifically under

20.6.4.128 NMAC with designated uses for livestock watering, wildlife habitat, limited aquatic life use, and secondary contact.

If the results of the Hydrology Protocol survey demonstrates that a tributary is intermittent, the highest attainable use would, at the very least, need to protect aquatic life for criteria associated with chronic exposure. In addition to the Hydrology Protocol survey, other supporting evidence identified under this work plan should also be evaluated to demonstrate the highest attainable use. Those tributaries currently in 20.6.4.128 NMAC that are determined to be intermittent are recommended to be identified under a new section in 20.6.4 NMAC.

If there are no data for a non-perennial tributary currently classified in 20.6.4.128 NMAC, it is presumed that the tributary is able to attain water quality sufficient enough to support a more stringent criteria use than provided for under the limited aquatic life designated use. Those tributaries that are undetermined would be identified as a general reference under a new section in 20.6.4 NMAC until such a time that the designated use is changed through the UAA process.

If the results from the Hydrology Protocol survey show that a tributary currently classified in 20.6.4.128 NMAC is perennial, those perennial waters will be reclassified under 20.6.4.126 NMAC until such a time that the designated use is changed through the UAA process, or an EUA.

Defensibility

Methodology

The hydrology protocol method is described in Appendix C of the Water Quality Management Plan/Continuing Planning Process (WQMP/CPP) approved by both the WQCC and EPA Region 6.

Accuracy/range (other DQIs)

Because the protocol relies on a multi-faceted series of parameters, the seasonal or annual variation that a false determination of hydrologic regime based solely on a single-parameter evaluation is less likely. The design of the survey method allows for best professional judgement which inherently adds bias to the scoring. This has been reconciled with a series of multi-parameter survey questions to which no one response will outweigh the overall determination. The survey also requires specifically trained personnel with knowledge of the survey methods and indicators. It is assumed that the recorder/observers are trained with the methodology and are able to identify the various disciplined indicators, they are familiar with the area under study and professional bias is not influencing the scores. The surveys using the Hydrology Protocol methodology are standardized. The scoring criteria for the surveys under the Hydrology Protocol provide a specified category of ranges. In addition, the Protocol requires the observer to survey the stream segment for no less than 10 minutes to ensure indicators are not overlooked, thus there is a high probability of locating an indicator if present, thus increasing accuracy of the results. This standardized method increases accuracy and reduces bias that could be inferred by the observer.

Data processing and Verification

Data collected under the Level 1 Hydrology Protocol survey methodology, to which NMED was present, although not explicitly required, is done in conjunction with a survey team which consists of experienced staff in varying fields of discipline (botany, ecology, water quality, etc.). All field observations are discussed and referenced with the survey team in the field until consensus is obtained prior to documenting on field sheets. For a majority of the surveys there are two independent recorders to which data can be cross-

referenced for accuracy. Call and respond methodologies between the observers and recorders are also used to ensure data is recorded accurately and post-survey review of data is also conducted as a verification method. Data is checked as it is entered into a Microsoft Excel spreadsheet and any data to with which there appears to be transcription errors or missing information is discussed with the survey team before making assumptions or changes on field sheets or in the data entry spreadsheets.

Data collected under the Level 1 Hydrology Protocol survey methodology, to which NMED was not present, does not carry the same affirmations to which NMED could defend and is not being proposed for use under this analysis.

Use
For purposes of this work plan, there is no intent to collect additional hydrology protocol data for this EUA.

As it pertains to this study, the data obtained through the use of the hydrology protocol on surveys to which NMED was present is found to be sufficient for classifying tributaries as ephemeral, intermittent, or perennial.

2. Stream Chemistry

Parameters
Water quality data collected during baseflow conditions (flow that is not the result of a direct and immediate result of precipitation) is necessary to evaluate an existing use for comparison to the current designated uses. For purposes of this analysis, readily available water quality data from SWQB, DOE-OB and LANL, through the Surface Water Quality Information Database ("SQUID") and Intellus database, will be complied for pH, dissolved oxygen and temperature for all tributaries within the study area.

Assessment
Each of the water quality parameters will be evaluated independently for the minimum, maximum, range and frequency. There are special considerations for some of the criteria including dissolved oxygen ("DO") to which the diurnal changes will be evaluated. In addition, ambient water temperature will be evaluated for determination of sustained high temperatures over consecutive days. Although independent parameters, the data would be assessed for purposes of this analysis based on event.

Demonstration
Each of the water quality parameters, evaluated independently, provide comprehensive evidence for the highest attainable use. Aquatic life uses are predominately limited by pH, DO and temperature. It is assumed that, unless determined through natural sources which is beyond the scope and resources for this evaluation, the numeric criteria listed under 20.6.4.900(I) through (M) NMAC are enforceable.

The combination of pH range, dissolved oxygen, maximum temperature and sustained temperatures provides support for determining the existing use, along with other supporting evidence being collected under this analysis.

Defensibility
Methodology

Data collected by SWQB follows the methods and procedures available at https://www.env.nm.gov/surface-water-quality/sop/.

Data collected by LANL and the NMED Department of Energy Oversight Bureau ("DOE OB") were collected and analyzed using the procedures identified in the 2014-2020 Interim Facility-Wide Groundwater Monitoring Plan ("IFGMP") and Environmental & Remediation Support Services Standard Operating Procedures ("SOPs") (DOE, 2019). The documents are available on the internet at https://eprr.lanl.gov/.

Accuracy/range (other DQIs)

SWQB data meet the sensitivity and accuracy requirements specified in SWQB Quality Assurance Project Plan for Water Quality Management Programs (SWQB, 2018).

Data collected by LANL and the NMED DOE OB have varying degrees of quality assurance and must be evaluated to determine they meet, at a minimum the DQIs established under the SWQB Quality Assurance Project Plan for Water Quality Management Programs (SWQB, 2018).

Data processing and verification

Data collected by SWQB are processed and verified through adherence to SWQB SOP 15.0.

Data collected by LANL and NMED DOE OB the validation procedures are outlined in the 2014-2020 IFGMP and Environmental & Remediation Support Services SOPs.

Use

For purposes of this work plan, there is no intent to collect additional biological data for the EUA. As it pertains to this study, the stream chemistry data obtained from SWQB is sufficient for using as evidence for establishing existing uses. As it pertains to this study, the stream chemistry data obtained from LANL and NMED DOE OB must be evaluated to determine the defensibility of the data before using as evidence for establishing exiting uses.

C. Biological Data

Biological data will be used for evaluation of physical conditions to demonstrate support for existing uses and the highest attainable use. The data necessary to determine these conditions and the methodology that demonstrates use of the data for this analysis are summarized in Table 3.

1. Benthic Macroinvertebrate Data

Parameters

Benthic macroinvertebrates which literally translates to "bottom-dwelling" are visible invertebrate organisms are dependent on aquatic environments at some, if not all life stages. Benthic macroinvertebrates are, in part, an indicator of the hydrologic, biologic and chemical conditions of a tributary.

For purposes of this analysis, available benthic macroinvertebrate data indicating presence or absence will be extrapolated from the Level 1 surveys NMED SWQB conducted in conjunction with LANL in 2016,

2017 and 2019 using the Hydrology Protocol methodology as provided under Appendix C of the state's Water Quality Management Plan/Continuing Planning Process ("WQMP/CPP") (NMED, 2011).

In addition, both Level 1 and Level 2 Hydrology Protocol surveys conducted by LANL in 2019 using the Hydrology Protocol methodology as provided under Appendix C of the state's WQMP/CPP (NMED, 2011), will be evaluated for applicability of use.

In addition to benthic macroinvertebrate data collected during hydrology protocol surveys, data from the U.S. Fish and Wildlife Study (Lusk and MacRae, 2002) will also be used. This study identifies some of the types of benthic macroinvertebrates and their selectivity to environmental conditions.

Assessment

In addition to being an indicator of water quality, for purposes of this study, the presence/absence of benthic macroinvertebrates will be assessed to determine persistent presence of water that could support aquatic life uses along with the presence of any species sensitive to environmental conditions.

The species evaluation as provided by LANL's Level 2 hydrology protocol surveys and the study conducted by the U.S. Fish and Wildlife (Lusk and MacRae, 2002) will be assessed to determine any extant species that warrant particular water quality conditions.

Demonstration

The presence of benthic macroinvertebrates ("benthics") would indicate that a tributary maintains water for a period of time long enough to support aquatic life. If aquatic life is supported, designated uses should reflect this by, at a minimum, protecting against both acute and chronic exposure to contaminants.

The presence of benthic macroinvertebrates demonstrates that limited aquatic life is not the highest attainable use. The other data being collected as part of this analysis would provide the evidence needed to demonstrate the highest attainable use.

On its own, the absence of aquatic life would not by default indicate that the designated uses are limited but could indicate one of two scenarios; first that the duration of inundation of the stream bed is not sufficient enough to support aquatic life or that other factors are prohibiting the support of aquatic life. Other factors could include biological, chemical or physical conditions either natural or anthropogenic. Therefore, the results of the Hydrology Protocol surveys in their entirety will help support the demonstration for the existing use.

Defensibility

Methodology

Level 1 and Level 2 hydrology protocol data, as it pertains to benthic macroinvertebrates will have been collected using the Hydrology Protocol survey method.

The findings from the U.S. Fish and Wildlife study by Lusk and MacRae (2002) establish the methods that were used as part of their paper.

Accuracy/range (other DQIs)

The Level 1 Hydrology Protocol surveys are standardized. The presence/absence criteria for the surveys under the Hydrology Protocol provide an exact range. In addition, the Protocol requires the observer to survey the stream segment for benthic macroinvertebrates for no less than 10 minutes to ensure if there is the presence of benthic macroinvertebrates, there is a high probability of locating, thus increasing accuracy of the results. This standardized method increases accuracy and reduces bias that could be inferred by the observer.

The Level 2 Hydrology Protocol surveys are also standardized and provide a similar level of protections for data quality if the data are able to be verified.

The data used in the Lusk and MacRae (2002) study were verified independently prior to being used as evidence during the WQCC 03-05(R) Triennial Review.

Data processing and verification

Level 1 Hydrology Protocol data to which NMED was present, although not explicitly required, was done in conjunction with a survey team. In the field observations were discussed until consensus could be obtained prior to documenting on field sheets. Call and respond methodologies were also used to ensure data was recorded accurately and post-survey review of data was also conducted as a verification method. Any data to which there appeared to be transcription errors was discussed with the survey team before making changes on field sheets or in the data entry spreadsheets.

Data collected under the Level 2 Hydrology Protocol survey methodology, to which NMED was not present, does not carry the same affirmations to which NMED could defend and is not being proposed for use under this analysis.

Data used for the U.S. Fish and Wildlife study (Lusk and MacRae, 2002) has already been verified independently prior to being used as evidence during the WQCC 03-05(R) Triennial Review.

Use

For purposes of this work plan, there is no intent to collect additional biological data for the EUA. The presence/absence of benthic macroinvertebrates extrapolated from the Level 1 Hydrology Protocol surveys to which NMED SWQB was present will be used to support the determination for existing uses.

Data collected under LANL's independent Level 2 hydrology protocol surveys will not be used as evidence supporting a highest attainable designated aquatic life use.

The identification of particular benthic macroinvertebrates and their sensitivity through the U.S. Fish and Wildlife study (Lusk and MacRae, 2002) will be used as evidence supporting a highest attainable designated aquatic life use.

Table 3. Summary of Evaluated Data

Parameter	Media *	Type of Data	Source**	Geographic Location(s)	Temporal Scope	What will be assessed***	What will the data demonstrate
Hydrology	OBS	Field	LANL NMED	As Identified	All	Hydrology	-The score of indicators reflecting the presence and permanence of water will be used to support the attainable ALU
pH	ASW	Field	LANL NMED	As identified	All	Range Frequency	-What ALU criteria the tributary has already attained
Dissolved Oxygen	ASW	Field	LANL NMED	As identified	All	Range Frequency Diurnal variation	-What ALU criteria the tributary has already attained and if there are potential concerns with water quality
Temperature	ASW	Field	LANL NMED	As identified	All	Range Frequency 4T3 6T3	-Minimum will provide what has been attained -Maximum will provide highest it has been (may be impaired) -4T3 and 6T3 will provide ALU
Temperature	AA	Modeled	PRISM	As identified	30 years	Maximum	-Maximum ambient temps will provide information for any data gaps on maximum water temperatures
Benthic Macroinvertebrate	OBS	Field	LANL NMED	As identified	All	Presence/Absence Type	-Presence of benthics asserts persistent water and attainment of higher water quality -Presence of particular genera of benthics indicates attainment of higher quality waters -Absence of benthics with ephemeral scoring on hydrology protocol would indicate inability to attain higher water quality -Absence of benthics with intermittent scoring on Hydrology Protocol may would indicate potential concerns with water quality but not indicative either way on water quality attainability.

* Media = ASW-Ambient Surface Water; GW-Ground Water; AA-Ambient Air; S-Soil; OBS-observational

**Validity of data by source is summarized under Table XX

*** Range-includes the minimum and maximum; frequency-includes how often that value is obtained; 4T3 is the maximum temperature over four consecutive hours in a 24-hour period over three consecutive days; 6T3 is the maximum temperature over six consecutive hours in a 24-hour period over three consecutive days

VIII. Administrative Process

A. General Process

As discussed under Section II of this work plan, water quality management in New Mexico is established under the State of New Mexico's WQA. The WQCC, having no technical staff of its own, has delegated the responsibilities for water quality management and CWA activities involving surface waters to NMED. The NMED Surface Water Quality Bureau (SWQB) is responsible for the development of proposals to amend New Mexico's *Standards for Interstate and Intrastate Surface Waters***,** codified under 20.6.4 NMAC.

When reviewing or adopting new or revised water quality standards, agencies are required to engage the public and hold public hearings in accordance with 40 C.F.R. § 25.5 and any other WQS hearing requirements (CWA sections §303(c)(1), §101(e) and 40 C.F.R. § 131.20(b)). The State of New Mexico also has regulatory requirements associated with development of regulations and authority of the WQCC.

Following a public hearing, and assuming approval by the WQCC to adopt the amended designated use, the amended rule must be submitted to EPA Region 6 for review and approval in accordance with 40 C.F.R. § 131.20.

Should a UAA or EUA be developed for use as evidence for a proposed designated use change, applicable federal and state regulations will be adhered to.

B. Tribal Communication and Collaboration

SWQB will work with the Department's Tribal Liaison to identify Tribal Governments that may be directly or indirectly affected by a water quality standards action taken on the tributary. Tribal engagement will be conducted in accordance with NMED's *Tribal Communication and Collaboration Policy* (NMED Office of the Secretary 2009).
In addition to general notification through the Department's Tribal Liaison, for purposes of this EUA tribes identified to be of particular investment include:

- Pueblo de San Ildefonso;
- Santa Clara Pueblo;
- Pueblo of Jemez; and
- Pueblo of Cochiti.

C. Outreach to Stakeholders

As required under the state's Water Quality Management Plan/Continuing Planning Process for water quality standards revisions, the SWQB will attempt to inform appropriate stakeholders of the study prior to any public noticing of proposals to change a designated use through a UAA or EUA. In general, stakeholders include: EPA Region 6, New Mexico Department of Game and Fish, landowners directly adjacent to the tributary being evaluated (including any tribal, state, or federal agencies), any entity holding a National Pollutant Discharge Elimination System permit under Section 404 of the CWA, any entity with a Dredge and Fill Permit under Section 402 of the Clean Water Act, and any individual or organization who has expressed interest in the area of evaluation.

For purposes of this EUA stakeholders specifically include:

- EPA Region 6;
- New Mexico Department of Game and Fish;

- Los Alamos National Laboratory; and
- Amigos Bravos.

D. Public Engagement

Public participation requirements under the CWA are specified in 40 C.F.R. § 25.4. The rule requires agencies to "…conduct a continuing program for public information and participation in development and implementation of activities…" and includes the following provisions:

- Design informational documents and activities to encourage and facilitate public participation for meaningful involvement (40 C.F.R. § 25.4(b)(1);
- Provide at least one central location of reports, studies, plans, and other documents (40 C.F.R. § 25.4(b)(3);
- Develop and maintain a list of potentially affected and interested parties and engage with them under public consultation as outlined under 40 C.F.R. § 25.4(d) (40 C.F.R. § 25.4(b)(5);
- Provide notification generally within no less than 30 days of any action to allow time for public response (40 C.F.R. § 25.4(c).

In addition to the federal requirements identified above, NMED has additional outreach requirements, which include:

- Public outreach actions outlined in the state's WQMP/CPP (NMED/SWQB 2011b) for water quality standards revisions.

- Development of a Public Involvement Plan ("PIP") in accordance with *NMED's Limited English Proficiency (LEP) Accessibility and Outreach Policy 07-11, Non-Employee Disability Accessibility and Outreach Policy 07-10* and *Public Participation Policy 07-13*.

- Provide public notification consistent with the public participation and outreach activities outlined in the associated PIP.

E. Administrative Rulemaking Process

There are several steps involved with the administrative rulemaking process that are prescribed under both federal and state regulations. In part these include:

1. Petition for a public hearing – must be done in accordance with 20.1.6 NMAC
2. 60-day public notice of hearing – must be done in accordance with 20.1.6 NMAC
3. Filing notice of intent to present technical testimony – must be done in accordance with 20.1.6 NMAC.
4. Public hearing – must be done in accordance with 20.1.6 NMAC and in accordance with 40 C.F.R. § 25.5 where some of the requirements include providing notice to the public in advance of a public hearing, establishing times and locations of public hearings, scheduling commenters, conducting the public hearing, and providing a record of the proceedings.
5. Deliberation and approval by the WQCC – In order to proceed, the WQCC (as authorized under the WQA) must approve the new standard before it can be filed and made effective for state purposes under 20.6.4 NMAC.

6. Filing and publication of rule with New Mexico State Records Center and Archives – In accordance with 1.24 NMAC (in particular, parts 1, 10, 11, 15 and 20).
7. Notification of rule adoption – in accordance with the State Rules Act 1978 NMSA 14-4-5.4, notification of the adopted rule must be provided at the central office of the agency and available to the public on the state sunshine portal.
8. Minimum requirements for water quality standards submission – In accordance with 40 C.F.R. § 131.6 and as part of the submittal package to EPA, a certification from the Attorney General must be provided stating the rule was adopted pursuant to state law.
9. Submittal of rule to EPA Region 6 – In accordance with 40 C.F.R. § 131.20, EPA must approve the new standard to make it effective for purposes of the CWA.
10. Notification of effective rule – EPA's approval of the amended rule is posted on EPA's and SWQB's websites. Notification is also provided to the SWQB Bureau Chief and Program Managers for implementation into their respective programs.

IX. Work plan conclusions

A. Findings

This work plan summarizes the SWQB's evaluation of evidence necessary to determine the existing aquatic life uses for ephemeral, intermittent and undetermined non-perennial waters classified under 20.6.4.128 NMAC. The work plan evaluation concludes:

- ✓ The waters under 20.6.4.128 NMAC include ephemeral and intermittent portions of waters within lands managed by the DOE.
- ✓ The waters under 20.6.4.128 NMAC were not previously classified under 20.6.4.121 NMAC.
- ✓ Prior to classifying ephemeral and intermittent portions of waters within lands managed by the DOE under 20.6.4.128 NMAC, there were no designated uses for these waters.
- ✓ The designated uses under 20.6.4.128 NMAC include livestock watering, wildlife habitat, limited aquatic life and secondary contact and became effective May 23, 2005.
- ✓ The designated uses under 20.6.4.128 NMAC include sub-categorical uses that protect for uses specified under Section 101(a)(2) of the CWA.
- ✓ Following submittal to EPA under 40 C.F.R. § 131.20, EPA determined that there was insufficient support for the designated use determination for classified waters under 20.6.4.128 NMAC.
- ✓ It is unclear whether EPA's determination that a UAA was required was based on the assertion that the designated use was made less stringent from those uses identified under 20.6.4.121 NMAC (to which it was never classified under), or if it was due to the initial establishment of protections for previously unclassified waters that did not have protections for 101(a)(2) uses (to which it did).
- ✓ To accommodate EPA's request, NMED submitted a UAA, which referenced the study conducted by the U.S. Fish and Wildlife Service (Lusk and MacRae, 2002) in support of the aquatic life and recreational designated uses identified under 20.6.4.128 NMAC.
    - o This UAA did not undergo public comment, nor was it brought before the WQCC as supporting evidence for the establishment of the aquatic life designated use for 20.6.4.128 NMAC.
    - o This UAA identifies that there are intermittent waters on the Pajarito Plateau.
    - o This UAA also identifies that there are benthic macroinvertebrates present in those intermittent waters.

- The supporting evidence for this UAA asserts there is evidence that some of the benthic macroinvertebrates are of a sensitive nature.
- This UAA did not address recreational uses.
- This UAA did not address existing uses other than for native fish.
- The study supporting this UAA did provide water quality data that should have been used to establish existing aquatic life uses.
- The conclusion in this UAA and basis for the aquatic life designated use protection focused on the evidence that native fish were nonextant.
- The aquatic life uses in the state's *Standards for Interstate and Intrastate Surface waters* (20.6.4 NMAC) are not limited to native fish.
- In addition, and contrary to the designated uses adopted for classified waters under 20.6.4.128 NMAC, the study asserts that there are sensitive benthic macroinvertebrates present in intermittent and potentially ephemeral waters that warrant more stringent water quality protections.

- ✓ Upon receipt of the UAA, EPA responded with approval of those designated uses, as adopted by the WQCC, identified under 20.6.4.128 NMAC.
- ✓ Amigos Bravos' proposed amendments during a later Triennial Review (WQCC No. 14-05R, 2014) highlighted that the aquatic life designated uses adopted in 2005 for waters classified under 20.6.4.128 NMAC may have been under-protective.
- ✓ Reevaluation of the testimony and supporting evidence provided during the Triennial Review (WQCC No. 03-05R) that resulted in amendments that became effective on May 23, 2005 present reasoning to evaluate the highest attainable uses for intermittent waters classified under 20.6.4.128 NMAC.
- ✓ A joint stipulation regarding proposed changes to 20.6.4.128 NMAC was entered into between the DOE, Los Alamos National Security LLC; Amigos Bravos and NMED to attempt to come to a consensus of the highest attainable uses for those classified waters identified under 20.6.4.128 NMAC.
- ✓ The joint stipulation recognizes that clarification on hydrologic regime, existing uses and the presence of aquatic life would assist in the endeavor.
- ✓ 40 C.F.R. § 131.10(i) requires that, where designated uses which are less stringent than those already being attained, "the State shall revise its standards to reflect the uses actually being attained."
- ✓ There is readily available physical and chemical and biological data to evaluate the existing uses for some of the waters under 20.6.4.128 NMAC.
- ✓ There is also supporting evidence for attainable aquatic life use protections in the study provided by Lusk and MacRae, 2002.
- ✓ Designated uses must be based on the highest attainable use.
- ✓ Non-perennial waters on the Pajarito Plateau are presumed to be able to attain water quality associated with intermittent waters, unless demonstrated otherwise under an evaluation of the factors in 40 C.F.R. § 131.10(g).
- ✓ Data collected from Hydrology Protocol surveys would demonstrate whether low flow conditions are the limiting factor under 40 CFR 131.10(g) preventing the attainment of the use.
- ✓ Those waters determined through a Hydrology Protocol survey to be ephemeral would have designated uses consistent with 20.6.4.128 NMAC. Since the factor preventing attainment has been demonstrated, these waters would be identified specifically under 20.6.4.128 NMAC.

- ✓ Those waters determined through a Hydrology Protocol survey to be intermittent will be reclassified under a new section in 20.6.4 NMAC.
- ✓ If there are no data for a non-perennial tributary currently classified in 20.6.4.128 NMAC, it is presumed that the tributary is able to attain water quality sufficient enough to support the established aquatic life use for intermittent waters within LANL. Those tributaries that are undetermined would be identified as a general reference under the new section in 20.6.4 NMAC until such a time that the designated use is changed through the UAA process.
- ✓ Those waters determined through a Hydrology Protocol survey to be perennial will be reclassified under 20.6.4.126 NMAC.
- ✓ Based on the findings of this work plan, there is insufficient evidence or reasoning to evaluate the recreational use for these waters at this time.
- ✓ Livestock watering and wildlife habitat have already been established as designated uses for all waters. It is concluded that there is insufficient evidence, or reasoning to evaluate these designated uses under this analysis.
- ✓ There is supporting evidence for determining the highest attainable aquatic life uses for waters currently classified under 20.6.4.128 NMAC.

B. Determination

Based on the assessments conducted in the work plan, there is support for evaluating the aquatic life designated use for classified waters under 20.6.4.128 NMAC. The designated use would be evaluated based on the findings from a study conducted by the U.S. Fish and Wildlife Service, determination of hydrologic regime and water quality data. This work plan concludes that there is sufficient evidence to proceed with a EUA.

C. Future Needs

Additional hydrologic, chemical, physical and biological data will be needed to further evaluate the existing uses for additional non-perennial tributaries within LANL. Additional information also may be needed to determine the highest attainable use for perennial waters identified through the joint stipulation. These perennial waters will be re-classified under 20.6.4.126 NMAC perennial waters within LANL, until such a time that the designated use is changed through the UAA process, or an EUA.

X. References

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Exhibit 35

LANL General Workplan Comments

LANL has a number of comments to the Work Plan and would like to understand the best way to provide these comments to NMED-SWQB, whether that it is written form or through discussion, or both. These comments generally fall into four broad categories, including:

1. **Legal Concerns.** We understand that the primary focus of the meeting today is intended to be a *technical* discussion but, with respect to the Stipulated Agreement, the technical considerations cannot be fully framed without due consideration to important legal considerations. Some of these considerations include:
   - The manner in which the history is laid out is incomplete and as a result the draft Work Plan appears to retry the validity of the Department's 2007 UAA – the question of the validity of that UAA is *res judicata* based upon multiple Department, WQCC and EPA decisions.
   - EUA as presented appears outside the scope of the Stipulated Agreement, in that under the Stipulated Agreement "NMED was stipulated to petition the WQCC no later than the next Triennial Review *for changes to those waters on which the parties came to agreement*." As our technical discussion outlines, there are numerous instances of stream classifications that the hydrologic data does not support and with which LANL cannot agree.

2. **Technical Concerns Related to NMED's Reliance on the 2002 Use Study.** Using the 2002 Use Study to support any determination relating to the proposed Section 140 waters is technically problematic. Some of these considerations include:
   - The 2002 Use Study is mischaracterized in the Work Plan. USFWS study describes the Pajarito Plateau surface *watersheds* (not "waters") as intermittent.
   - The study locations in the 2002 Use Study are current *perennial* waters (i.e., waters that are classified in 20.6.4.126 NMAC). The study refers to these specific segments as intermittent, however these waters have different hydrologic characteristics and aquatic biota present from the remaining ephemeral/intermittent waters on the Pajarito Plateau, which demonstrates the problem with relying on a dated study without proper context. Therefore, using that study to support any determination on proposed *intermittent* waters (new Section 140) lacks basis.

3. **Technical Concerns Related to the Exceedingly Limited Scope of Data Being Considered.** Departmental constraints on evaluating and fully considering the vast field of more recent, high quality data available for the Pajarito Plateau watersheds is not a reasonable justification to disregard this data and it creates the appearance that the Department is arbitrarily picking data for its use. Data that has been provided to the Department but which does not appear to be addressed includes:
   - 2015 data required under the Stipulated Agreement and supplemental data through April 2020, including gage flow data (which the HP states should be used to make hydrological determinations), mapping, precipitation data, hydrology protocol information, photographs, surface water data and riparian inventory results spanning many years, 2019 HP Level 2 results and photographs, complete results of Level 2 HPs and macroinvertebrate metrics from Level 2 HP sites, alluvial well hydrograph data

4. **The Parties Should Move Forward Under the Stipulated Agreement.** We propose that the Department set aside this EUA, or at a minimum limit the scope to those waters where the parties have actual agreement. The Parties entered into the Stipulated Agreement in an effort to assign the appropriate level of water quality protections to Segment 128 waters, not to override prior WQCC and EPA decisions for these waters by defaulting these waters to certain categories based on problematic historic data.

Exhibit 36

Chronology of Activities Completed Under the Joint Stipulated Agreement

October 9, 2015 – Amigo Bravos, NMED, DOE and LANL (the "Parties") enter into the Joint Stipulation Regarding Proposed Changes to 20.6.4.128 NMAC ("Joint Stipulation"). The parties agree to meet, confer and share information on the appropriate level of water quality protections for Segment 128 Waters.

December 2015 – LANL Transmits Joint Stipulation documents provided to NMED and Amigos Bravos.

- HP Level 1 Assessments and Photographs
- Gage and Precipitation Data 2010 to 2014

February 17, 2016 – LANL conducts Amigos Bravos site tour of west and east canyon sites.

June 27, 2016 – Per Joint Stipulation, LANL transmits (email communication R. Gallegos to R. Conn, E. English, J. Klingel) to Amigos Bravos with the following documents and information:

1. Map of Pajarito Plateau with Stream Segments, gages, designated uses
2. Surface Water Data at LANL by Water Year 2010-2013
3. 2007 LANL Riparian Inventory Results
4. 2008-2009 Riparian Inventory Results
5. 2011 LANL Riparian Inventory Results
   Stream Assessment Documents for 20.6.4.128 NMAC Segment Waters at LANL
   a. Photographs of channel surrounding gage stations
   b. Hydrology Protocol Level 1 Field Sheets – completed at each gage station
   c. Precipitation and flow graphs (2010-2014). Date ranges vary depending on gage start-up and operating status.

July 7, 2016 – Site tour (with Amigos Bravos) which included stops at Water Canyon (above State Road 501), Pajartio Canyon (at E250), Three Mile Canyon (at E246), DP Canyon at (E039.1 and E040), and Los Alamos Canyon (at E030).

July 19, 2016 – Amigos Bravos requests expansion of HP work to include AUs within Los Alamos Canyon.

November 3, 2016 – NMED, Amigos Bravos and LANL conduct Level 1 HP in Lower Ancho Canyon.

November 17, 2016 – NMED, Amigos Bravos and LANL conducted Level 1 HP in upper Water Canyon (above SR 501).

Note: November 2016 supplements HP assessments conducted in DP Canyon by LANL and NMED in May of 2015.

February 23, 2017 – Green Committee (established by Parties for the purpose of map and document review maps of potential Segment 128 assessment sites) meets with following agenda items:

- Review of Google/other aerial photos of LANL segments to identify green areas with higher potential for intermittent flows
    - Review map of LANL classified waters
    - Review active gages
- Recent changes to 303(d) Listing
- Review stream gage and precipitation (2010-2014) data provided in January 2016
- Review HP Determination Field sheets for Water and DP Canyons

April 20, 2017 – NMED created 128 Waters "Green Ribbon HPs" and provided two lists for HP activities. A list for future HP assessments and a list for canyons where HPs will be excluded[1] (the list was based on discussions held between the Parties on February 23, 2017).

1. HP assessment completed or in need of completion

AU_NAME	NOTE	NMED Participation	NMED 2019 Participation
DP Canyon (Grade control to upper LANL bnd)	Completed	May 2015	
DP Canyon (Los Alamos Canyon to grade control)	Completed	May 2015	
Water Canyon (within LANL abv NM 501)	Completed	November 2016	
Arroyo de la Delfe (Pajarito to headwaters)			**Yes**
Ancho Canyon (Rio Grande to North Fork)	Completed	May 2017	**Yes**
Los Alamos Canyon (DP to upper LANL bnd)	Summer/Fall 2017		**Yes**
Los Alamos Canyon (NM-4 to DP Canyon)	Summer/Fall 2017		**Yes**
Mortandad Canyon (within LANL)	Summer/Fall 2017		**Yes**
Pajarito Canyon (lower LANL bnd to Two Mile Canyon	Summer/Fall 2017		**No**
Pajarito Canyon (Two Mile Canyon to Arroyo de La Delfe)	Summer/Fall 2017		**Yes**
Pajarito Canyon (within LANL above Starmers Gulch)	Summer/Fall 2017		**Yes**
Ten Site Canyon (Mortandad to headwaters)	Summer/Fall 2017		**Yes**
Two Mile Canyon (Pajarito to headwaters)	Summer/Fall 2017		**Yes**
Water Canyon (within LANL below Area-A Canyon)	Summer/Fall 2017		**Yes**

[1] Sites were excluded where the Parties agreed that they were not likely to be good candidates for increased use protection.

2. Reaches excluded from HP work.

AU_NAME	NOTE	NMED 2019 Participation
Ancho Canyon (North Fork to headwaters)	Exclude	**Yes**
Canada del Buey (within LANL)	Exclude	**No**
Canyon de Valle (below LANL gage E256)	Exclude	**Yes**
Canyon de Valle (within LANL abv Burning Ground Spring)	Exclude	**No**
Chaquehui Canyon (within LANL)	Exclude	**No**
Fence Canyon (above Potrillo)	Exclude	**No**
Indio Canyon (above Water Canyon)	Exclude	**No**
North Fork Ancho Canyon (Ancho Canyon to headwaters	Exclude	**No**
Potrillo Canyon	Exclude	**No**
Sandia Canyon (within LANL below Sigma Canyon)	Exclude	**No**
Three Mile Canyon (Pajarito to headwaters)	Exclude	**No**

May 24, 2017 – Deployment of thermograph below Ancho Canyon spring.

May 25, 2017 – NMED, Amigos Bravos and LANL conducted Level 1 HP in lower Ancho Canyon.

February 15, 2018 – NMED email requesting a quality assurance review of existing work and plan for spring-summer 2018 HP activities.

May 18, 2018 – Deployment of thermograph in Water Canyon below SR 501.

March 5, 2018 – LANL response to NMED (2/15/18) agreeing to quality assurance review and request for developing an agreed upon process for reclassification of Ancho, Water and DP. Specify plans for 2018 field work is premature given current work load.

April 18, 2018 – Due to poor water and snow conditions NMED urges indefinite postponement of field work for 2018 HP assessments.

June 12, 2018 – Pursuant to February 15, 2018 request, LANL, NMED and Amigos Bravos completed a quality review of HP field sheets for 128 sites under the Joint Stipulation (Water, DP and Ancho).

October 11, 2018 – LANL aquatic life survey sampling in lower Ancho Canyon.

October 25, 2018 – Aquatic life survey sampling completed in Water Canyon (above SR 501).

June 3, 2019 – NMED correspondence to LANL listing waterbodies for which an HP was completed, HPs in need of completion and waters where an HP was not needed. This list was identical to the list provided by NMED on April 20, 2017. NMED proposes parties jointly complete field work in the upcoming 2019 field season.

June 18, 2019 –LANL correspondence (EPC-DO: 19-197) informing NMED that Triad will be completing HPs in 2019 and plans to share all information.

June 2019 – October 2019 – Completed Level 1 and Level 2 HPs. Approximately 44% of all HPs were conducted with NMED.

January 30, 2020 –LANL transmits (EPC-DO: 20-031) level 1 HP documents to NMED:

- Level 1 HP Determination Field Sheets and Photographs
- Summary spreadsheet containing HP Level 1 individual attribute scores and total scores
- Map containing: streams and classifications, HP sites, HP scores, springs, gages, alluvial wells and NPDES Outfalls.

February 20, 2020 – LANL transmits (email communication R. Gallegos to J. Fullam, K. Barrios, S. Lemon) Map (revised) w/HP locations to NMED.

April 8, 2020 –LANL transmits (EPC-DO: 20-113) Level II HP Documents to NMED

- Level 2 Field Sheets and Photographs – 30 Sites
- Macroinvertebrate Metrics from Level 2 Sites – 14 Sites
- Surface Flow Hydrographs w/index
- Alluvial Well Hydrographs w/index

June – July 2020 – Completed 12 Level 1 HPs at sites requiring additional information.

August 19, 2020 – NMED Triennial Petition filed with the WQCC. Despite Joint Stipulation agreement for parties to agree upon revisions, NMED proposes changes to Section 126 and 128 waters without consultation with LANL or Amigos Bravos.

September 18, 2020 – NMED initiates plans for upcoming meeting to discuss Joint Stipulation Work Plan.

October 2020 – Beginning in May of 2019 through October 2020, DOE/NMED/LANL held a series of regularly schedule monthly meetings to discuss various surface water quality issues, including Joint Stipulation.

October 5, 2020 – LANL received NMED's petition for the Triennial Review.

October 7, 2020 – LANL learns that the Joint Stipulation Work Plan NMED is drafting is going to be an Existing Use Attainability Work Plan (EUA), a tool that NMED is planning on deploying for the first time.

October 15, 2020 – NMED schedules October 28, 2020 meeting for parties to discuss NMED's EUA work plan.

October 27, 2020 - NMED provides draft EUA to Joint Stipulation Parties.

October 27, 2020 - LANL request extension of EUA work plan discussions (set for October 28, 2020).

November 6, 2020 – NMED sets EUA work plan discussion for November 19, 2020.

November 19, 2020 – Parties hold discussions EUA work plan.

December 14, 2020 - LANL (EPC-DO: 20-408) provides comments to EUA work plan.

December 16, 2020 – NMED, Amigos Bravos and LANL hold Joint Stipulation discussions based on reference to LANL map.

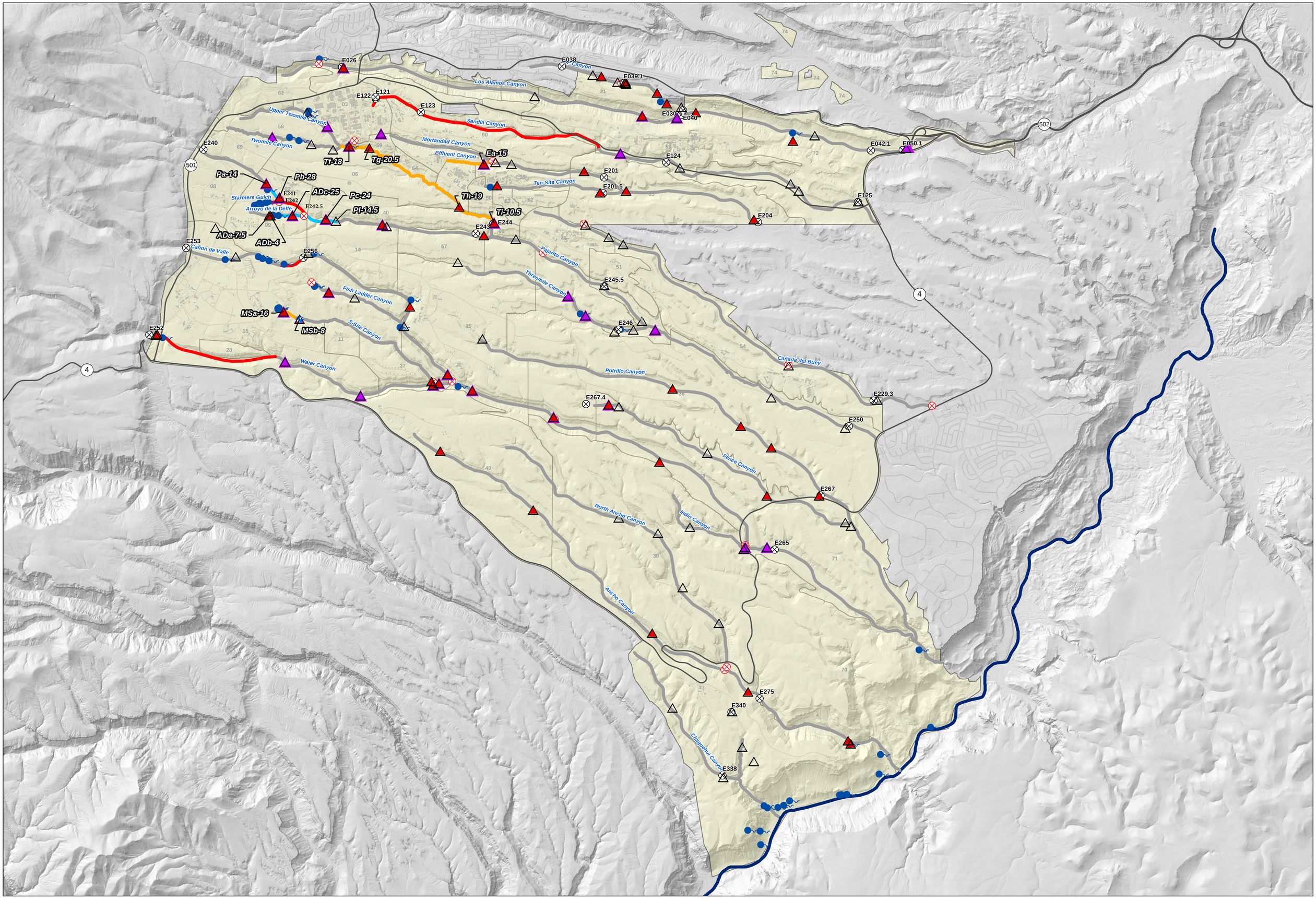
January 6, 2021 – LANL (EPC-DO: 20-421) submits comments to NMED's Triennial Petition.

January 13, 2021 – LANL (email communication R. Gallegos to J. Fullam, K. Barrios, S. Lemon) provided map of potential areas of agreement based on December 16, 2020 discussion.

February 10, 2021 – In the NMED/LANL regular monthly meeting NMED indicates that they will amend their petition regarding LANL segment waters to include only those where agreement was reached on December 16, 2020. NMED indicated that perennial waters (based on HP) at LANL currently characterized as 128 waters are considered unclassified 20.6.4.99 waters, contrary to 2005 WQCC classification and 2007 EPA approval.

March 12, 2021 – NMED files amended petition. LANL files protective petition.

Exhibit 37



HP Level 1 with NMED in Attendance
HP Level 1 without NMED in attendance
HP Level II
Spring
Active Gage
Inactive Gage
Alluvial Groundwater Monitoring Well MSC 16-06293

Existing NMAC Water Body Classification

20.6.4.114 - Rio Grande River
20.6.4.126 - Perennial Waters Within LANL
20.6.4.128 - Ephemeral And Intermittent Waters Within LANL

Proposed Stream Reach Agreements

126 Perennial
140-Non-perennial

LANL Structure
LANL
Technical Area
Paved Road

LA-UR-20-30297

Map #19-217-07
Created by Ben Sutter, IFPROG.
March 4, 2021.

This map was created for work processes associated with EPC. All other uses for this map should be confirmed with LANL EPC-CP staff.

State Plane Coordinate System
New Mexico, Central Zone, US Feet
NAD 1983 Datum

0 0.5 1 2 Miles

N W E S

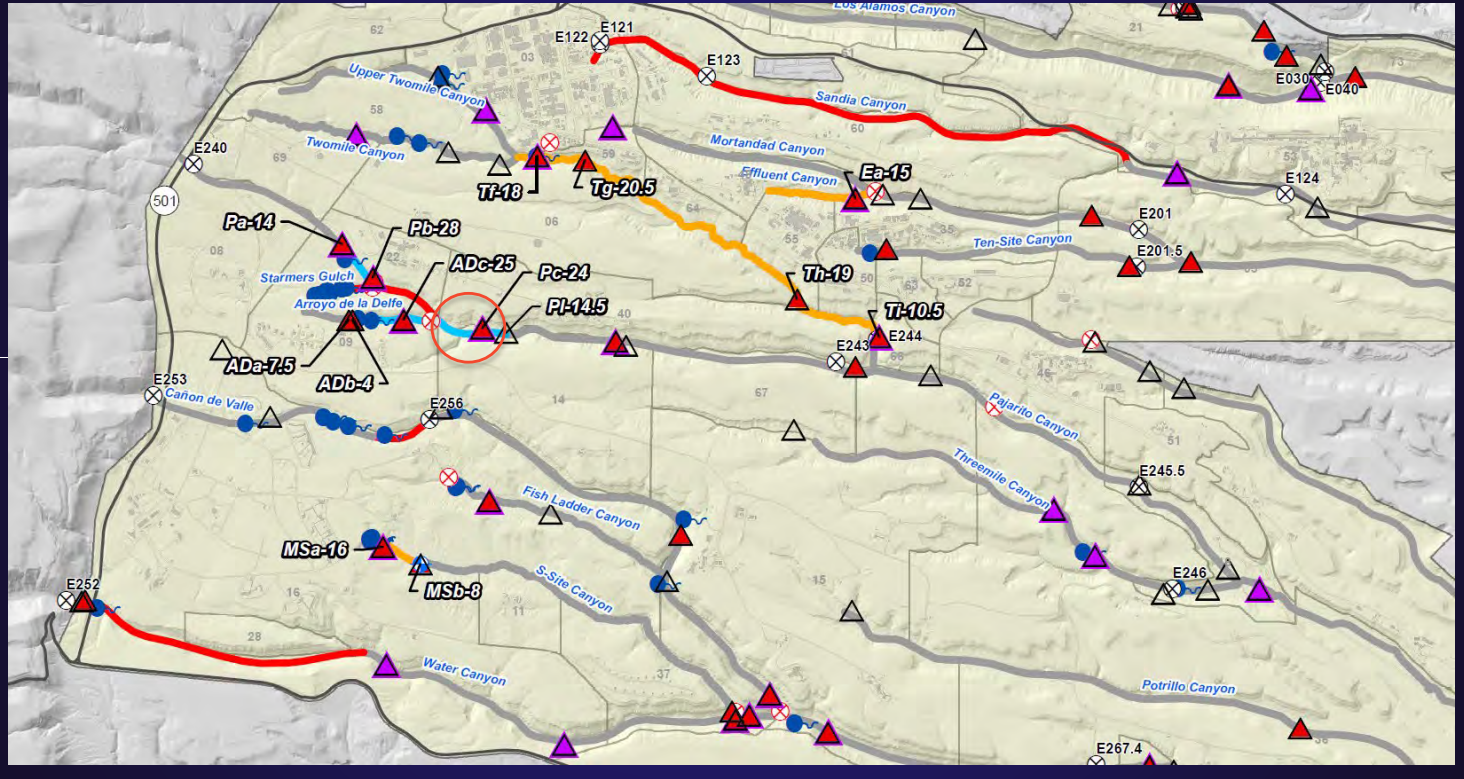
GIS Program

Los Alamos NATIONAL LABORATORY

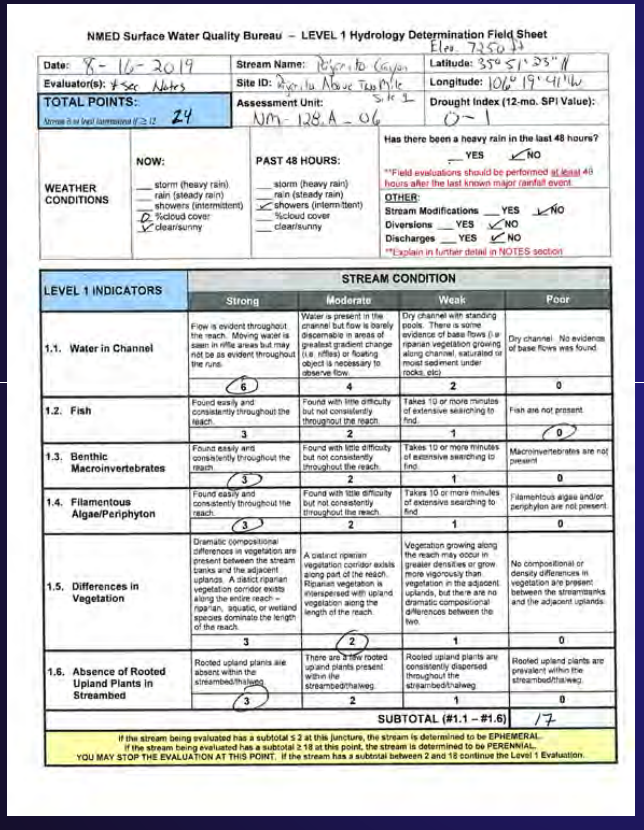
2020 TR LANL-00620

Exhibit 38

Pajarito Canyon – 0.5 Miles below Arroyo de la Delfe to Arroyo de la Delfe



2020 TR LANL-00622



NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Elev. 7350 ft

Date: 8-16-2019	Stream Name: Rio Pueblo Canyon	Latitude: 35° 51' 35" N
Evaluator(s): #Sec Notes	Site ID: Rio Pueblo Above Trib M/L Site 2	Longitude: 106° 19' 41" W
TOTAL POINTS: 24 (Stream is at least intermittent if ≥ 19)	Assessment Unit: NM-128.A_06	Drought Index (12-mo. SPI Value): 0~1

WEATHER CONDITIONS

NOW:
- ___ storm (heavy rain)
- ___ rain (steady rain)
- ___ showers (intermittent)
- D %cloud cover
- ✓ clear/sunny

PAST 48 HOURS:
- ___ storm (heavy rain)
- ___ rain (steady rain)
- ✓ showers (interm'ittent)
- ___ %cloud cover
- ___ clear/sunny

Has there been a heavy rain in the last 48 hours?
___ YES ✓ NO

**Field evaluations should be performed at least 48 hours after the last known major rainfall event.

OTHER:
Stream Modifications ___ YES ✓ NO
Diversions ___ YES ✓ NO
Discharges ___ YES ✓ NO
**Explain in further detail in NOTES section

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.1. Water in Channel	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the runs.	Water is present in the channel but flow is barely discernable in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow.	Dry channel with standing pools. There is some evidence of base flows (i.e riparian vegetation growing along channel, saturated or moist sediment under rocks, etc)	Dry channel. No evidence of base flows was found.
	(6)	4	2	0
1.2. Fish	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Fish are not present.
	3	2	1	(0)
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
	(3)	2	1	0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
	(3)	2	1	0
1.5. Differences in Vegetation	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distict riparian vegetation corridor exists along the entire reach – riparian, aquatic, or wetland species dominate the length of the reach.	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two.	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands.
	3	(2)	1	0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed/thalweg.	There are a few rooted upland plants present within the streambed/thalweg.	Rooted upland plants are consistently dispersed throughout the streambed/thalweg.	Rooted upland plants are prevalent within the streambed/thalweg.
	(3)	2	1	0
SUBTOTAL (#1.1 – #1.6)				17

If the stream being evaluated has a subtotal ≤ 2 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.7. Sinuosity	Ratio > 1.4. Stream has numerous, closely-spaced bends, few straight sections.	Ratio < 1.4. Stream has good sinuosity with some straight sections.	Ratio < 1.2. Stream has very few bends and mostly straight sections.	Ratio = 1.0. Stream is completely straight with no bends.
	3	2	(1)	0
1.8. Floodplain and Channel Dimensions	Ratio > 2.5. Stream is minimally confined with a wide, active floodplain.	Ratio between 1.2 and 2.5 (3.5). Stream is moderately confined. Floodplain is present, but may only be active during larger floods.	Ratio < 1.2. Stream is incised with a noticeably confined channel. Floodplain is narrow or absent and typically disconnected from the channel.	
	3	(1.5)	0	
1.9. In-Channel Structure: Riffle-Pool Sequence	Demonstrated by a frequent number of riffles followed by pools along the entire reach. There is an obvious transition between riffles and pools.	Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult.	Stream shows some flow but mostly has areas of pools or of riffles.	There is no sequence exhibited.
	(3)	2	1	0
SUBTOTAL (#1.1 – #1.9)				17 + 5.5 = 22.5

If the stream being evaluated has a subtotal ≤ 5 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 21 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 5 and 21 continue the Level 1 Evaluation.

1.10. Particle Size or Stream Substrate Sorting	Particle sizes in the channel are noticeably different from particle sizes in areas close to but not in the channel. There is a clear distribution of various sized substrates in the stream channel with finer particles accumulating in the pools, and larger particles accumulating in the riffles/runs.	Particle sizes in the channel are moderately similar to particle sizes in areas close to but not in the channel. Various sized substrates are present in the stream channel and are represented by a higher ratio of larger particles (gravel/cobble).	Particle sizes in the channel are similar or comparable to particle sizes in areas close to but not in the channel. Substrate sorting is not readily observed in the stream channel.
	3	(1.5)	0
1.11. Hydric Soils	Hydric soils are found within the study reach.	Hydric soils are not found within the study reach.	
	Present = 3		(Absent = 0)
1.12. Sediment on Plants and Debris	Sediment found readily on plants and debris within the stream channel, on the streambank, and within the floodplain throughout the length of the stream.	Sediment found on plants or debris within the stream channel although it is not prevalent along the stream. Mostly accumulating in pools.	Sediment is isolated in small amounts along the stream.	No sediment is present on plants or debris.
	1.5	1	0.5	(0)
TOTAL POINTS (#1.1 – #1.12)				22.5 + 1.5 = 24

SUPPLEMENTAL INDICATORS: The following indicators do not occur consistently throughout New Mexico but may be useful in the determination of perennially. If the indicator is present record score below and tally with previous score to compute TOTAL.

1.13. Seeps and Springs	Seeps and springs are found within the study reach.	Seeps and springs are not found within the study reach.
	Present = 1.5	(Absent = 0)
1.14. Iron Oxidizing Bacteria/Fungi	Iron-oxidizing bacteria and/or fungi are found within the study reach.	Iron-oxidizing bacteria and/or fungi are not found within the study reach.
	Present = 1.5	(Absent = 0)
TOTAL plus SUPPLEMENTAL POINTS (#1.1 – #1.14)		24 + 0 = 24.0

LEVEL 1 Field Measurements

Pebble Count Tally Sheet

Site Name: _____ Storet ID: _____

Date: _____ Crew: _____

Substrate Type	Diameter Range	In-Channel COUNT	In-Channel % Composition	Out of Channel COUNT	Out of Channel % Composition
Silt/Clay	< 0.06 mm				
Sand	0.06 – 2.0 mm (gritty)				
Gravel	2.0 – 64 mm	N/A			
Cobble	64 – 256	BMI 8/14/19			
Boulder	> 256 mm				
Bedrock	---				

Please be sure to measure at least 50 pebbles (10 in 5 transects or 5 in 10 transects- depending on stream size) for accurate distributional representation

INDICATOR #1.8 (*Floodplain and Channel Dimensions*) – MEASUREMENTS & CALCULATIONS**

Max Depth (#1)	Bankfull Stage (#2)	Maximum Depth Value (#3)	2x Maximum Depth Value (#3)	Flood-Prone Area Location (#4)	Flood-Prone Area Width (#5)	Bankfull Width (#6)	Floodplain to Active Channel Ratio (FPA Width / Bankfull Width)
7.85	7.20	0.65	1.30	6.55	10.00	~~10.00~~ 4.70	2.13

**REFER to Figure 3 on page 19 for clarification

7.85 − 7.20 = .65 → 2 → 1.30

7.85 × 1.30 = 6.55

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Photo Descriptions and NOTES

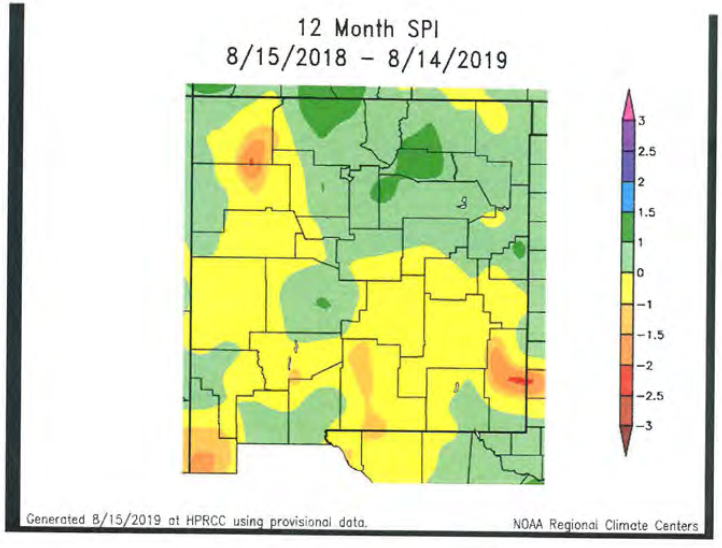
Photo #	Description (US, DS, LB, RB, etc.)	Notes
~~1~~ 1	upstream	Photos taken by Brian
~~2~~ 2	downstream	" " " "
~~3~~ 3	right bank	" " " "
4	left bank	" " " "
5	general channel upstream	" " " "
6	benthics found	" " " "

NOTES:

Evaluators: Brian Isaacs, Jennifer Fullam, Brad Schilling

Recent Precipitation at TA-6 Rain Gage: .01" on 8/14

.11" on 8/15


12 Month SPI
8/15/2018 – 8/14/2019
3
2.5
2
1.5
1
0
-1
-1.5
-2
-2.5
-3
Generated 8/15/2019 at HPRCC using provisional data.
NOAA Regional Climate Centers

Data is for tower ta6.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Fri Aug 16 06:31:18 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
8	13	2019	225	0
8	14	2019	226	0.01
8	15	2019	227	0.11

HP Level 1 – Pajarito Canyon – 0.5 Miles below Arroyo de la Delfe - Downstream

HP Level 1 – Pajarito Canyon – 0.5 Miles below Arroyo de la Delfe - Upstream

HP Level 1 – Pajarito Canyon – 0.5 Miles below Arroyo de la Delfe – Right Bank

2020 TR LANL-00629

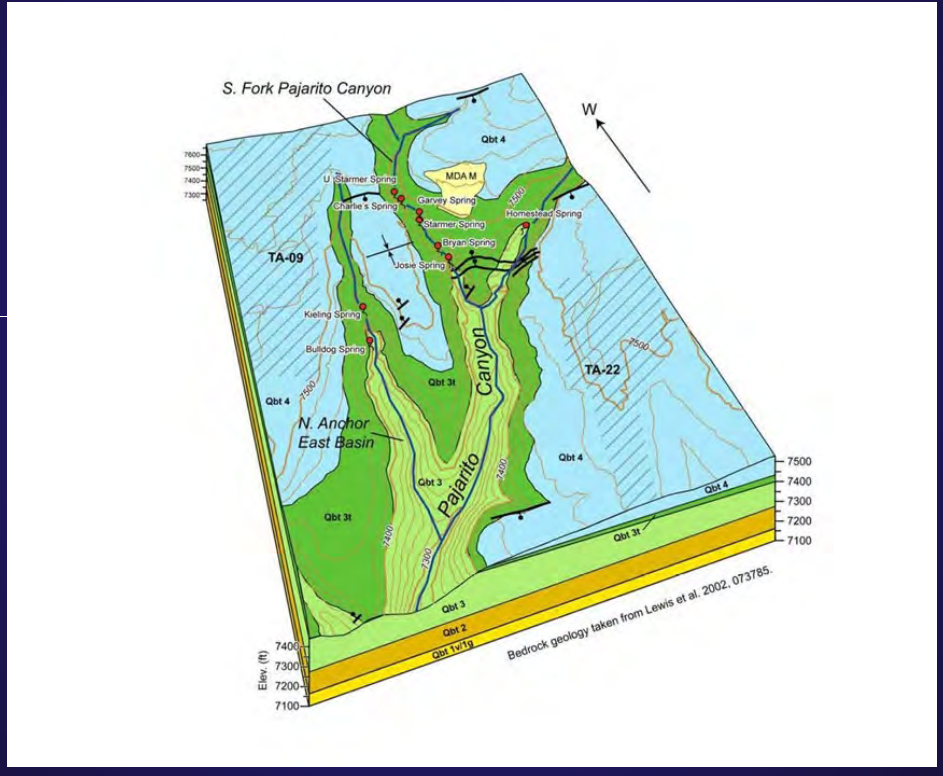

8-16-2019
Pajarito Canyon
Site 1
NM-128.A-06
Photo 4 CUT BANK

HP Level 1 – Pajarito Canyon – 0.5 Miles below Arroyo de la Delfe – Upstream

HP Level 1–Pajarito Canyon – 0.5 Miles below Arroyo de la Delfe-Benthics

2020 TR LANL-00632

Hydrogeologic Diagram of Pajarito Spring-Fed Reaches



2020 TR LANL-00633

Temperatures - U.S. Fish and Wildlife Use Study (2002)

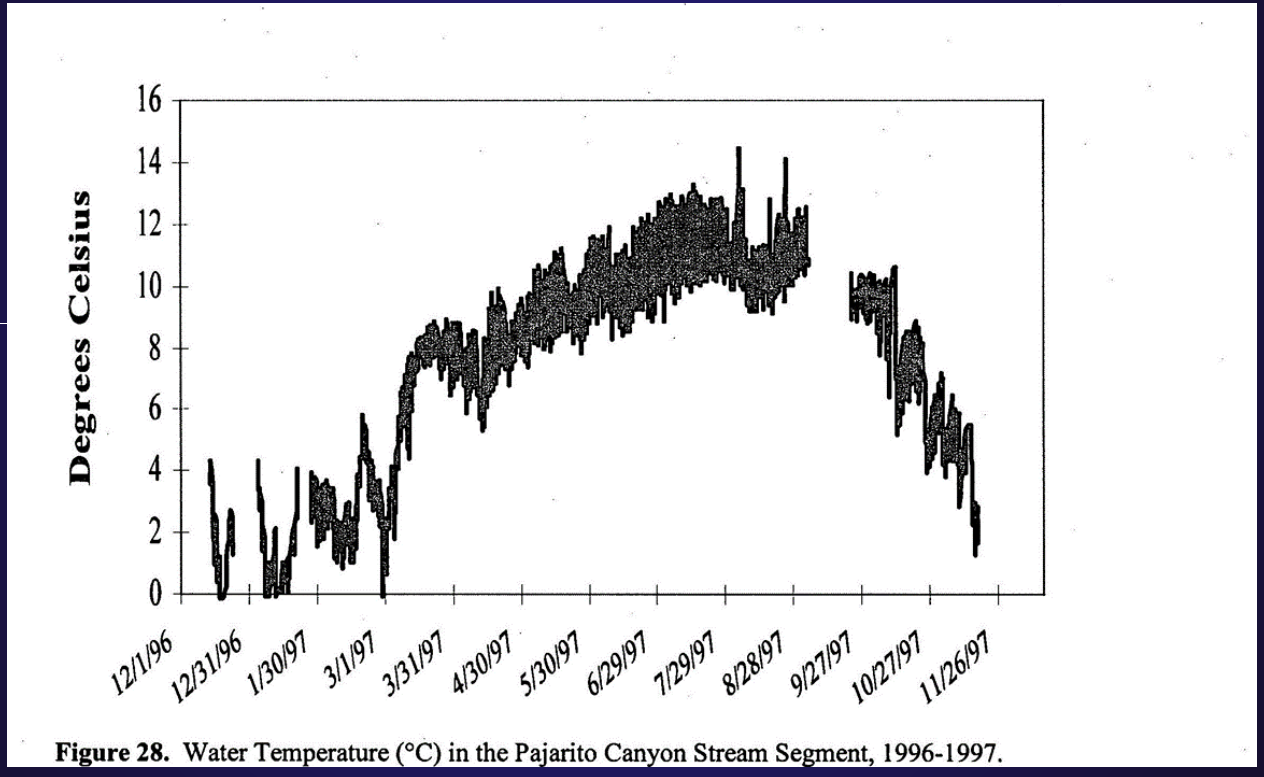
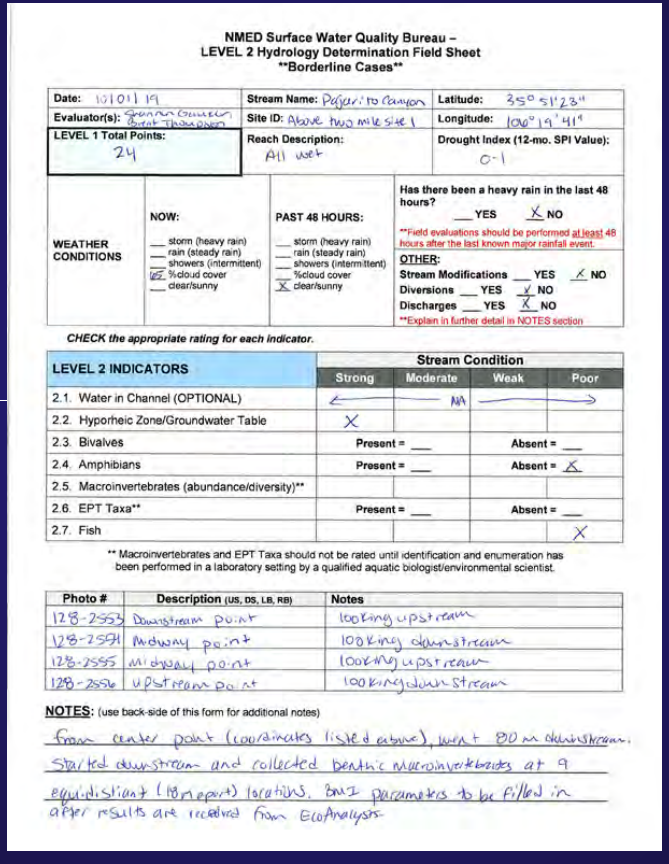


Figure 28. Water Temperature (°C) in the Pajarito Canyon Stream Segment, 1996-1997.

HP 2: Pajarito Canyon – 0.5 Miles below Arroyo de la Delfe - Upstream



NMED Surface Water Quality Bureau –
LEVEL 2 Hydrology Determination Field Sheet
****Borderline Cases****

Date: 10/01/19	**Stream Name:** Pajarito Canyon	**Latitude:** 35° 51' 23"
Evaluator(s): [illegible]	**Site ID:** Above two mile site 1	**Longitude:** 106° 19' 41"
LEVEL 1 Total Points: 24	**Reach Description:** All wet	**Drought Index (12-mo. SPI Value):** 0-1

	NOW:	PAST 48 HOURS:	
WEATHER CONDITIONS	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ☑ %cloud cover ___ clear/sunny	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ %cloud cover X clear/sunny	**Has there been a heavy rain in the last 48 hours?** ___ YES X NO **Field evaluations should be performed at least 48 hours after the last known major rainfall event. **OTHER:** **Stream Modifications** ___ YES X NO **Diversions** ___ YES X NO **Discharges** ___ YES X NO **Explain in further detail in NOTES section

CHECK the appropriate rating for each indicator.

LEVEL 2 INDICATORS	Stream Condition			
	Strong	Moderate	Weak	Poor
2.1. Water in Channel (OPTIONAL)	←	NA	→	
2.2. Hyporheic Zone/Groundwater Table	X			
2.3. Bivalves	Present = ___		Absent = ___	
2.4. Amphibians	Present = ___		Absent = X	
2.5. Macroinvertebrates (abundance/diversity)**				
2.6. EPT Taxa**	Present = ___		Absent = ___	
2.7. Fish				X

** Macroinvertebrates and EPT Taxa should not be rated until identification and enumeration has been performed in a laboratory setting by a qualified aquatic biologist/environmental scientist.

Photo #	Description (US, DS, LB, RB)	Notes
128-2553	Downstream point	looking upstream
128-2554	Midway point	looking downstream
128-2555	Midway point	looking upstream
128-2556	Upstream point	looking downstream

NOTES: (use back-side of this form for additional notes)

From center point (coordinates listed above), went 80 m downstream. Started downstream and collected benthic macroinvertebrates at 9 equidistant (10m apart) locations. BMI parameters to be filled in after results are received from EcoAnalysts

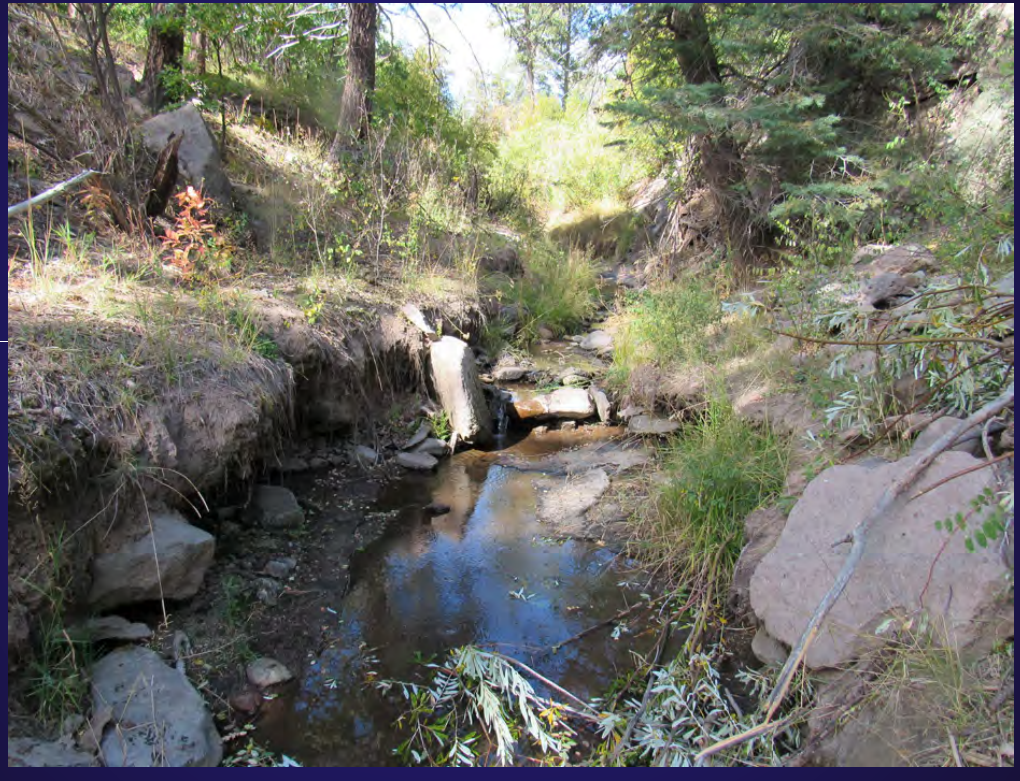
Summary of Benthic Data

Summary of Benthic Data for Proposed Waters 1			
Segment	**Level 1-2 Locations and Scores**	**Benthic Macroinvertebrate Narrative Score**	**EPT Taxa (Present/Absence)**
Pajarito above Starmers Site 1	Pa-14	-	-
Pajarito canyon from Starmers Gulch to Homestead Spring	Pb-28	Moderate	Present
Pajarito canyon 0.5 miles below Arroyo de La Delfe	Pc-24	Moderate	Present
Arroyo de la Delfe from Pajarito canyon upstream to Kieling Spring	Ac-25	Strong[1]	Present
S-Site canyon from alluvial groundwater well MSC 16-06293 upstream to Martin Spring	MSa-16	Strong[1]	Present
Effluent canyon from Mortandad canyon confluence upstream its headwaters	Ea-15	Weak	Present
Two Mile Canyon below Confluence	Tf-18	Moderate	Present
Two Mile Canyon TA-59	Tg-20.5	Moderate	Present
Two Mile Canyon at TA-55 Confluence	Th-19	-	-
Two Mile above E244	Ti-10.5	-	-
1. bivalves present			

Summary of Benthic Data (cont.)

Summary of Bentic Data for Proposed Waters 2									
Segment	Level 1-2 Locations	Benthic Macroinvertebrates	Total Species Taxa Richness	EPT Taxa Richness	% EPT	Intolerant Taxa Richness	Long Lived Taxa Richness	Benthic Macroinvertebrate Narrative Score	EPT Taxa (Present/Absent)
Pajarito above Starmers Site 1	Pa-14	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Pajarito canyon from Starmers Gulch to Homestead Spring	Pb-28	1863.1	35.00	5.0	8.8	1.0	1.0	Moderate	Present
Pajarito canyon 0.5 miles below Arroyo de La Delfe	PC-24	2036.0	40.00	7.0	40.7	2.0	0.0	Moderate	Present
Arroyo de la Delfe from Pajarito canyon upstream to Kieling Spring	Ac-25	4136.0	36.00	4.0	7.5	0.0	3.0	Strong[1]	Present
S-Site canyon from alluvial groundwater well MSC 16-06293 upstream to Martin Spring	MSa-16	1431.8	30.00	1.0	3.3	0.0	3.0	Strong[1]	Present
Effluent canyon from Mortandad canyon confluence upstream its headwaters	Ea-15	148.0	13.00	2.0	87.8	0.0	0.0	Weak	Present
Two Mile Canyon below Confluence	Tf-18	132.0	23.00	1.0	0.8	1.0	0.0	Moderate	Present
Two Mile Canyon TA-59	Tg-20.5	793.5	37.00	5.0	31.0	0.0	1.0	Moderate	Present
Two Mile Canyon at TA-55 Confluence	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Two Mile above E244	Ti-10.5	Not Collected	N/A	N/A	N/A	N/A	N/A	-	-
1. bivalves present									

HP 2: Pajarito Canyon – 0.5 Miles below Arroyo de la Delfe - Upstream

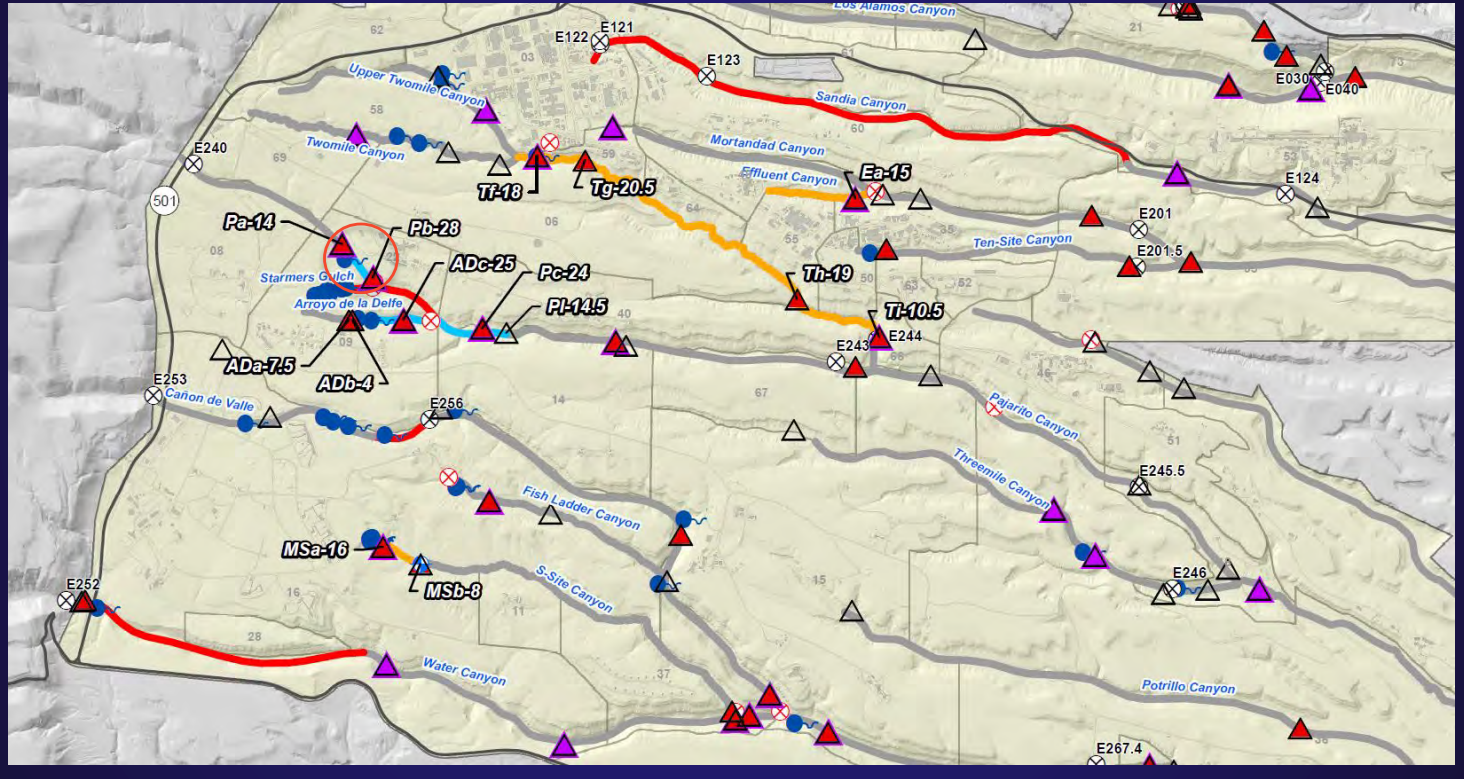


HP 2: Pajarito Canyon – 0.5 Miles below Arroyo de la Delfe – Midpoint Upstream

HP 2: Pajarito Canyon – 0.5 Miles below Arroyo de la Delfe – Midpoint Downstream

HP Level 2: Pajarito Canyon – 0.5 Miles below Arroyo de la Delfe - Upstream

Pajarito Canyon – Starmers Gulch to Homestead Spring



2020 TR LANL-00642

HP Level 1 – Pajarito Canyon – Starmers Gulch to Homestead Spring

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Date: 8/8/19	Stream Name: Pajarito Above Starmers	Latitude: 35° 51' 35" N
Evaluator(s): Robert Gallegos (see notes)	Site ID: Site 2 NM128.A.07 (has data)	Longitude: 106° 20' 13" W
TOTAL POINTS: 28 (Stream is at least intermittent if ≥ 12)	Assessment Unit: Site 2	Drought Index (12-mo. SPI Value): 0-1

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	Has there been a heavy rain in the last 48 hours?
	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) 50 %cloud cover ___ clear/sunny	___ storm (heavy rain) ___ rain (steady rain) X showers (intermittent) 30 %cloud cover ___ clear/sunny	___ YES X NO (see notes) **Field evaluations should be performed at least 48 hours after the last known major rainfall event. OTHER: Stream Modifications X YES ___ NO (see notes) Diversions ___ YES X NO Discharges ___ YES X NO **Explain in further detail in NOTES section

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.1. Water in Channel	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the runs.	Water is present in the channel but flow is barely discernable in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow.	Dry channel with standing pools. There is some evidence of base flows (i.e. riparian vegetation growing along channel, saturated or moist sediment under rocks, etc)	Dry channel. No evidence of base flows was found.
	(6)	4	2	0
1.2. Fish	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Fish are not present.
	3	2	1	(0)
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
	3	(2)	1	0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
	3	(2)	1	0
1.5. Differences in Vegetation	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distict riparian vegetation corridor exists along the entire reach – riparian, aquatic, or wetland species dominate the length of the reach.	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two.	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands.
	(3)	2	1	0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed/thalweg.	There are a few rooted upland plants present within the streambed/thalweg.	Rooted upland plants are consistently dispersed throughout the streambed/thalweg.	Rooted upland plants are prevalent within the streambed/thalweg.
	(3)	2	1	0
			SUBTOTAL (#1.1 – #1.6)	16

If the stream being evaluated has a subtotal ≤ 2 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.

[16]

LEVEL 1 INDICATORS	STREAM CONDITION			
	Strong	Moderate	Weak	Poor
1.7. Sinuosity	Ratio > 1.4. Stream has numerous, closely-spaced bends, few straight sections.	Ratio < 1.4. Stream has good sinuosity with some straight sections.	Ratio < 1.2. Stream has very few bends and mostly straight sections.	Ratio = 1.0. Stream is completely straight with no bends.
	3	(2)	1	0
1.8. Floodplain and Channel Dimensions	Ratio > 2.5. Stream is minimally confined with a wide, active floodplain.	Ratio between 1.2 and 2.5. Stream is moderately confined. Floodplain is present, but may only be active during larger floods.	Ratio < 1.2. Stream is incised with a noticeably confined channel. Floodplain is narrow or absent and typically disconnected from the channel.	
	3	(1.5)	0	
1.9. In-Channel Structure: Riffle-Pool Sequence	Demonstrated by a frequent number of riffles followed by pools along the entire reach. There is an obvious transition between riffles and pools.	Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult.	Stream shows some flow but mostly has areas of pools or of riffles.	There is no sequence exhibited.
	(3)	2	1	0
			SUBTOTAL (#1.1 – #1.9)	8/12/19 16.5 22.5

If the stream being evaluated has a subtotal ≤ 5 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 21 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 5 and 21 continue the Level 1 Evaluation.

1.10. Particle Size or Stream Substrate Sorting	Particle sizes in the channel are noticeably different from particle sizes in areas close to but not in the channel. There is a clear distribution of various sized substrates in the stream channel with finer particles accumulating in the pools, and larger particles accumulating in the riffles/runs.	Particle sizes in the channel are moderately similar to particle sizes in areas close to but not in the channel. Various sized substrates are present in the stream channel and are represented by a higher ratio of larger particles (gravel/cobble).	Particle sizes in the channel are similar or comparable to particle sizes in areas close to but not in the channel. Substrate sorting is not readily observed in the stream channel.
	3	(1.5)	0
1.11. Hydric Soils	Hydric soils are found within the study reach.		Hydric soils are not found within the study reach.
	Present = 3		Absent = (0)
1.12. Sediment on Plants and Debris	Sediment found readily on plants and debris within the stream channel, on the streambank, and within the floodplain throughout the length of the stream.	Sediment found on plants or debris within the stream channel although it is not prevalent along the stream. Mostly accumulating in pools.	Sediment is isolated in small amounts along the stream.	No sediment is present on plants or debris.
	1.5	(1)	0.5	0
			TOTAL POINTS (#1.1 – #1.12)	8/12/19 2.5 25

SUPPLEMENTAL INDICATORS: The following indicators do not occur consistently throughout New Mexico but may be useful in the determination of perenniality. If the indicator is present record score below and tally with previous score to compute TOTAL.		
1.13. Seeps and Springs	Seeps and springs are found within the study reach.	Seeps and springs are not found within the study reach.
	Present = (1.5)	Absent = 0
1.14. Iron Oxidizing Bacteria/Fungi	Iron-oxidizing bacteria and/or fungi are found within the study reach.	Iron-oxidizing bacteria and/or fungi are not found within the study reach.
	Present = (1.5)	Absent = 0
	TOTAL *plus* SUPPLEMENTAL POINTS (#1.1 – #1.14)	28

2020 TR LANL-00643

HP Level 1 – Pajarito Canyon – Starmers Gulch to Homestead Spring

LEVEL 1 Field Measurements

Pebble Count Tally Sheet

Site Name: ____________ **Storet ID:** ____________
Date: ____________ **Crew:** ____________

N/A AKB 8/7/19

Substrate Type	Diameter Range	In-Channel COUNT	In-Channel % Composition	Out of Channel COUNT	Out of Channel % Composition
Silt/Clay	< 0.06 mm				
Sand	0.06 – 2.0 mm (gritty)				
Gravel	2.0 – 64 mm				
Cobble	64 – 256				
Boulder	> 256 mm				
Bedrock	---				

Please be sure to measure at least 50 pebbles (10 in 5 transects or 5 in 10 transects- depending on stream size) for accurate distributional representation

INDICATOR #1.8 (*Floodplain and Channel Dimensions*) – MEASUREMENTS & CALCULATIONS**							
Max Depth (#1) 9.97	Bankfull Stage (#2) 8.86	Maximum Depth Value (#3) 1.11	2x Maximum Depth Value (#3) 2.22	Flood-Prone Area Location (#4) 7.75	Flood-Prone Area Width (#5)	Bankfull Width (#6)	Floodplain to Active Channel Ratio (FPA Width / Bankfull Width)
~~8.4~~	~~6.24~~	~~2.16~~	~~4.32~~	~~4.08~~	23.2	11.0	2.1

AKB 8/7/19

**REFER to Figure 3 on page 19 for clarification

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Photo Descriptions and NOTES

Photo #	Description (US, DS, LB, RB, etc.)	Notes
1	Pajarito Above Starmer Site 2 - US	
2	" " " " - DS	
3	" " " " - RB	
4	" " " " - LB	
5	" " " " - Channel DS	

NOTES:

Additional Observers: Sam Loftin, Brad Schilling, Brian Iacona, Kilkenny Bileen, Jennifer Fullam, Kris Barrios, Alethea Banar

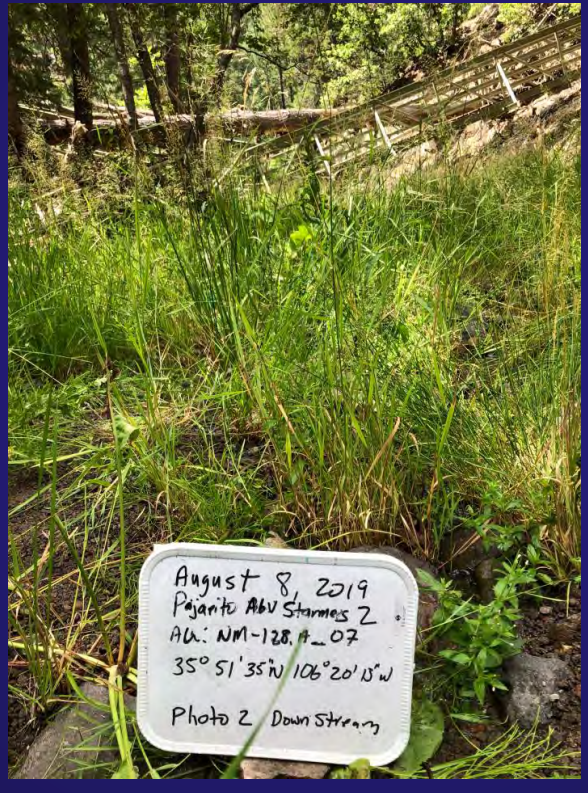
Stream Modifications: Two large culverts under Anchor Ranch road upstream of evaluation area (Site 1)

Rain Gage Data: TA6 gage 0.47" total 8/7/19, 0.84" total 8/6/19 (see attached precip. report)

Site is below spring and just above confluence of Starmer's Gulch

HP Level 1 – Pajarito Canyon – Starmers Gulch to Homestead Spring - Upstream

HP Level 1 – Pajarito Canyon – Starmers Gulch to Homestead Spring - Downstream



HP Level 1 – Pajarito Canyon – Starmers Gulch to Homestead Spring – Right Bank

HP Level 1 – Pajarito Canyon – Starmers Gulch to Homestead Spring – Left Bank

HP Level 1 – Pajarito Canyon – Starmers Gulch to Homestead Spring - Downstream

Hydrogeologic Diagram of Pajarito Spring-Fed Reaches

E241 – Pajarito above Starmers

Summary of Gage Flow Statistics

Station #	Station Name	Analysis Period	Average Percent Days of Flow	Flow Classification[1] Based on Percent Days with Flow	Current NMWQCC	*Proposed NMWQCC*
E240	Pajarito (below SR-501)	2000 - 2019	9.6%	Ephemeral / Intermittent	20.6.4.128	No change
E241	Pajarito (above Starmers)	2000 - 2009	76.8%	Intermittent / Perennial	20.6.4.128	20.6.4.126
E242	Pajarito (Starmer's Gulch)	2000 - 2009	97.5%	Perennial	20.6.4.126	No change
E242.5	Arroyo de la Delfe (above Pajarito)	2000 - 2009	81.8%	Perennial	20.6.4.128	20.6.4.126
E244	Twomile (above Pajarito)	2003 - 2011; 2015 - 2019	34.0%	Intermittent	20.6.4.128	20.6.4.140

Perennial flow
Borderline Intermittent / Perennial flow

[1]**Flow Classification based on criteria from Hedman & Osterkamp, 1982 (USGS Water Supply Paper #2193).**

Ephemeral: measurable discharge generally occurring less than 10% of the time
Intermittent: measurable surface discharge between 10 and 80% of the time
Perennial: measurable surface discharge > 80% of the time

Stream Flow in Upper Pajarito (Pajarito Canyon Investigation Report (2009)

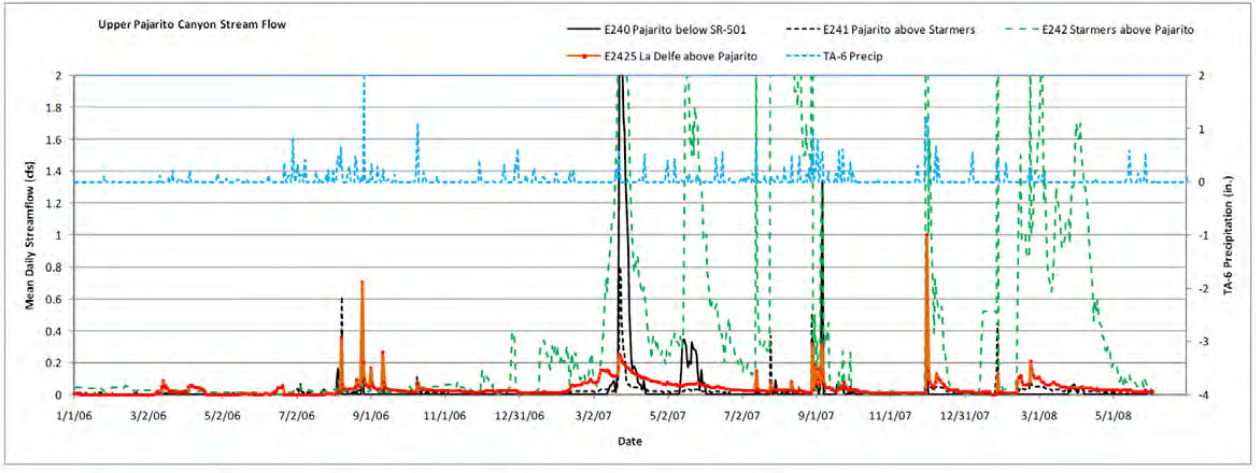
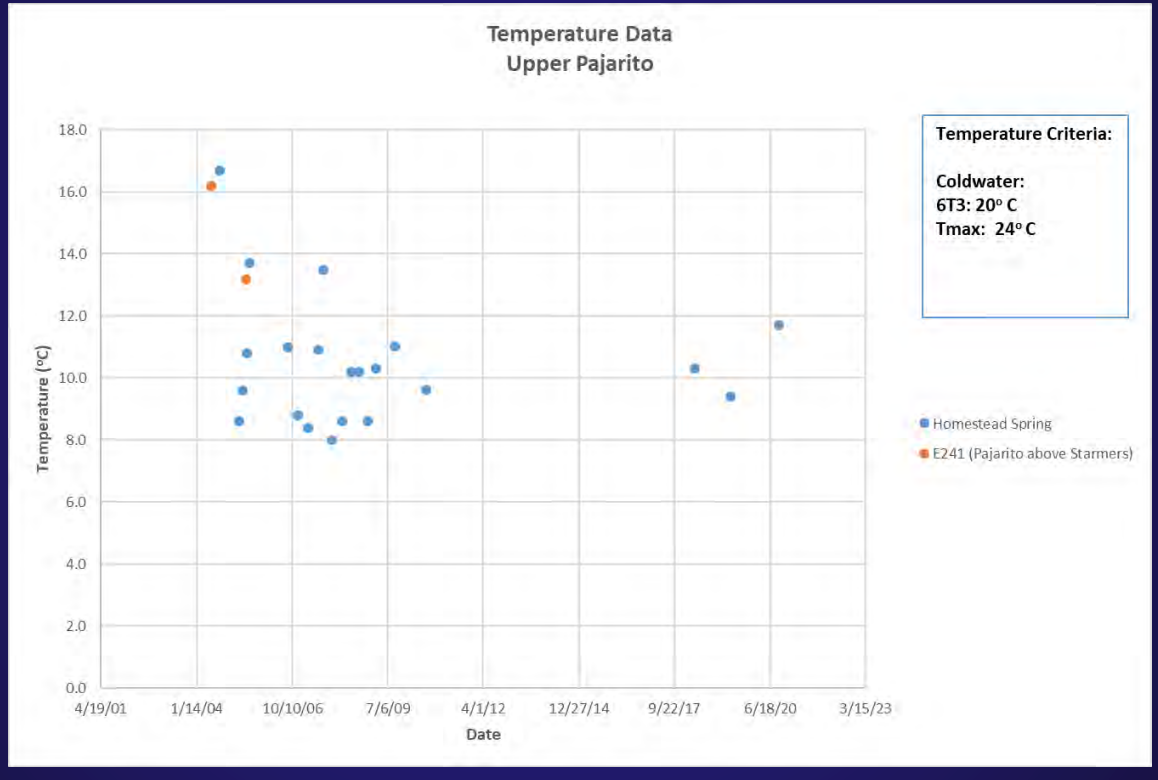


Figure L-2.0-2 Stream flow in upper Pajarito Canyon from January 2006 to June 2008

Pajarito Canyon Investigation Report

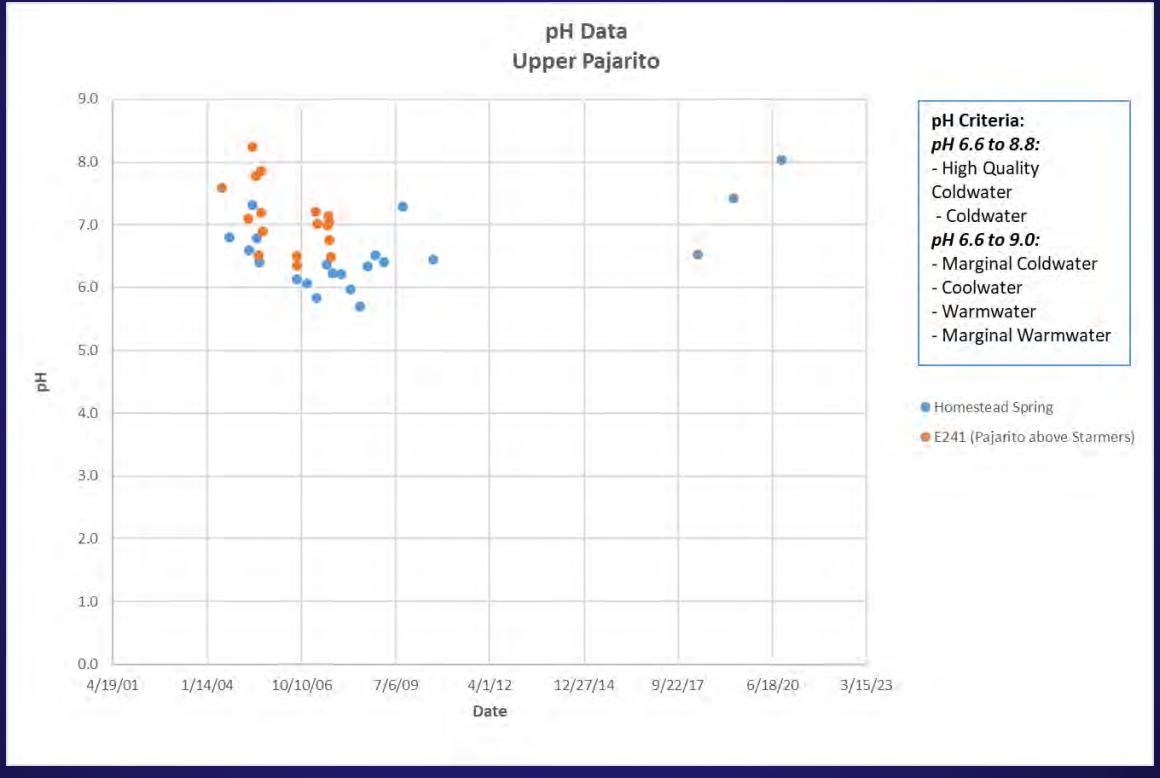
2020 TR LANL-00652

Temperature - Pajarito Canyon Starmers Gulch to Homestead Spring

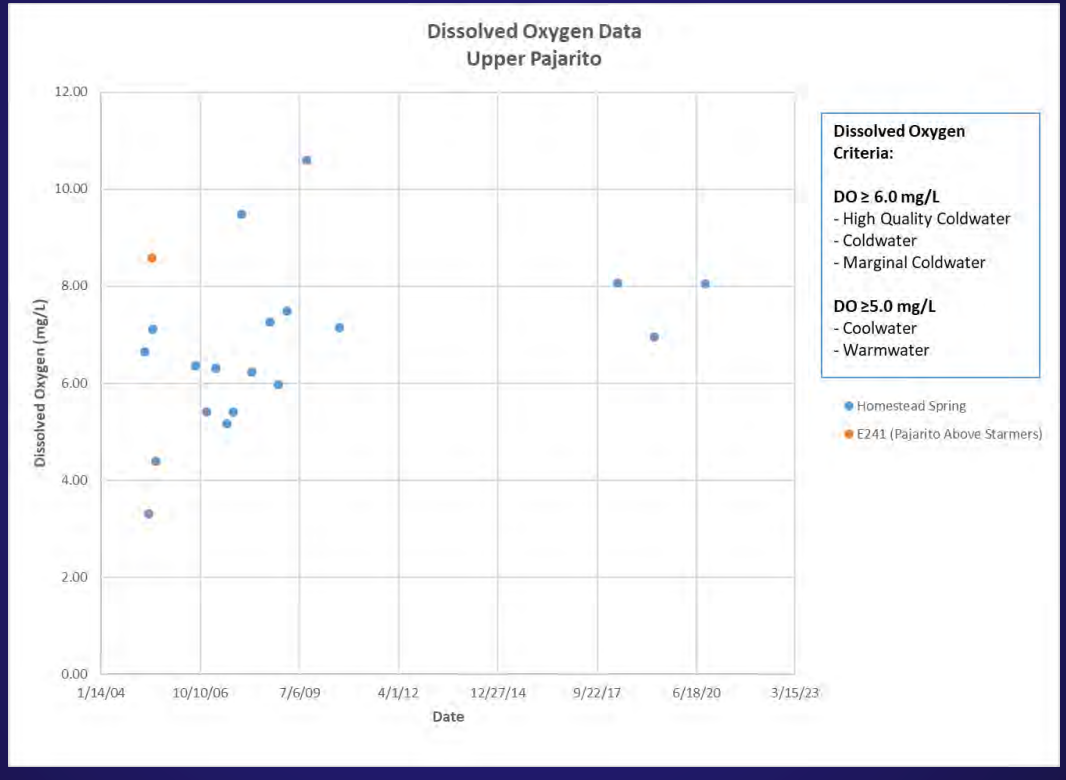


2020 TR LANL-00653

pH - Pajarito Canyon Starmers Gulch to Homestead Spring



DO – Pajarito Canyon Starmers Gulch to Homestead Spring



Temperatures - U.S. Fish and Wildlife Use Study (2002)

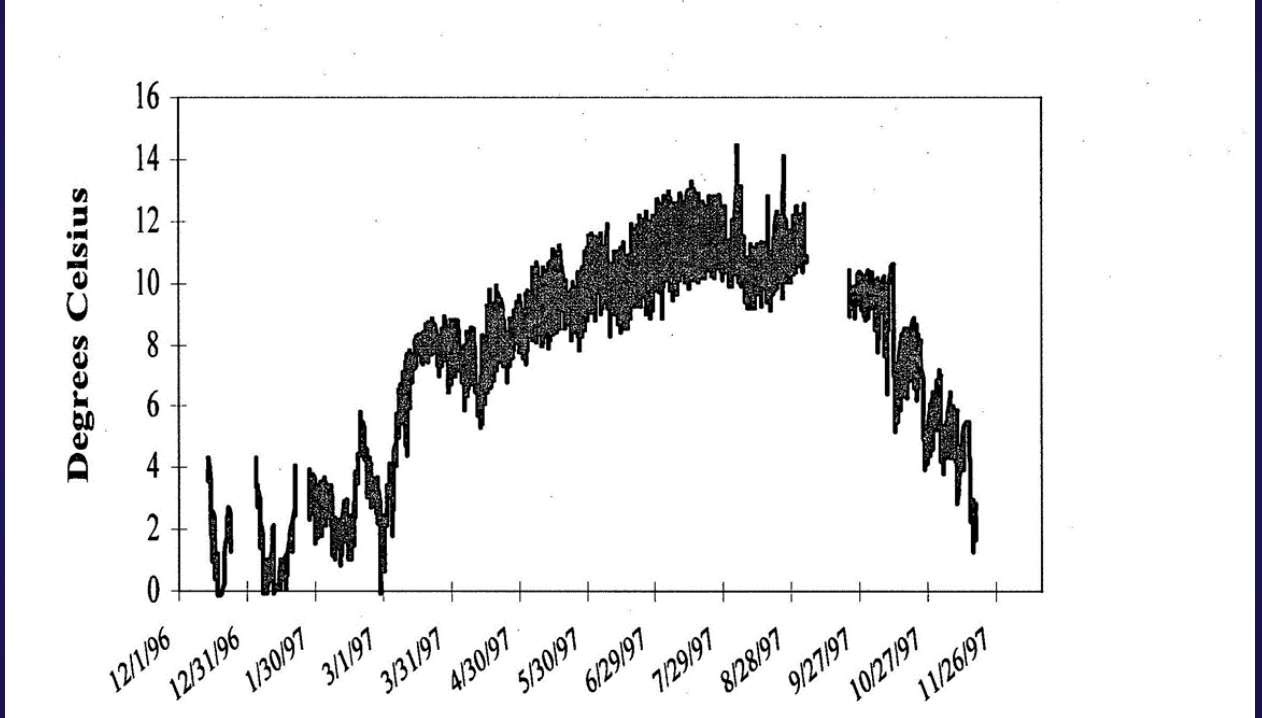


Figure 28. Water Temperature (°C) in the Pajarito Canyon Stream Segment, 1996-1997.

HP Level 2: Pajarito Canyon Starmers Gulch to Homestead Spring

NMED Surface Water Quality Bureau –
LEVEL 2 Hydrology Determination Field Sheet
****Borderline Cases****

Date: 9/10/or/2019	Stream Name: Pajarito Canyon	Latitude: 35°51'35"
Evaluator(s): T. Stanek, J. Bright	Site ID: Above Starmers Site 2	Longitude: 106°20'13"
LEVEL 1 Total Points: 28	Reach Description: Pools connected by moist channel	Drought Index (12-mo. SPI Value): D-1

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	Has there been a heavy rain in the last 48 hours?
	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) 15 %cloud cover X clear/sunny	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) 60 %cloud cover X clear/sunny	___ YES X NO **Field evaluations should be performed at least 48 hours after the last known major rainfall event. OTHER: Stream Modifications X YES ___ NO Diversions ___ YES X NO Discharges ___ YES X NO **Explain in further detail in NOTES section

CHECK the appropriate rating for each indicator.

LEVEL 2 INDICATORS	Stream Condition			
	Strong	Moderate	Weak	Poor
2.1. Water in Channel (OPTIONAL)	←	NA		→
2.2. Hyporheic Zone/Groundwater Table		X		
2.3. Bivalves	Present = ___		Absent = ___	
2.4. Amphibians	Present = ___		Absent = X	
2.5. Macroinvertebrates (abundance/diversity)**				
2.6. EPT Taxa**	Present = ___		Absent = ___	
2.7. Fish				X

** Macroinvertebrates and EPT Taxa should not be rated until identification and enumeration has been performed in a laboratory setting by a qualified aquatic biologist/environmental scientist.

Photo #	Description (US, DS, LB, RB)	Notes
100-4090	Downstream looking upstream	
100-4091	midpoint downstream	
100-4091	mid poin upstream	
100-4092	upstream looking downstream	

NOTES: (use back-side of this form for additional notes)
Stream modifications ≈ V-notch weir above storm water sampling point
Start point 35°51'33.3", 106°20'12.2"
End point 35°51'35.7", 106°20'14.0"

Transect 1 - sampled
Transect 2 - Dry, not sampled
Transect 3 - sampled
Transect 4 - sampled
Transect 5 - sampled
Transect 6 - sampled
Transect 7 - Dry, not sampled
Transect 8 - Dry, not sampled
Transect 9 - Dry, not sampled

page # 2 for
Pajarito Canyon
Above Starmers Site 2
10/01/19

2020 TR LANL-00657

Summary of Benthic Data

Summary of Benthic Data for Proposed Waters 1			
Segment	**Level 1-2 Locations and Scores**	**Benthic Macroinvertebrate Narrative Score**	**EPT Taxa (Present/Absence)**
Pajarito above Starmers Site 1	Pa-14	-	-
Pajarito canyon from Starmers Gulch to Homestead Spring	Pb-28	Moderate	Present
Pajarito canyon 0.5 miles below Arroyo de La Delfe	Pc-24	Moderate	Present
Arroyo de la Delfe from Pajarito canyon upstream to Kieling Spring	Ac-25	Strong[1]	Present
S-Site canyon from alluvial groundwater well MSC 16-06293 upstream to Martin Spring	MSa-16	Strong[1]	Present
Effluent canyon from Mortandad canyon confluence upstream its headwaters	Ea-15	Weak	Present
Two Mile Canyon below Confluence	Tf-18	Moderate	Present
Two Mile Canyon TA-59	Tg-20.5	Moderate	Present
Two Mile Canyon at TA-55 Confluence	Th-19	-	-
Two Mile above E244	Ti-10.5	-	-
1. bivalves present			

Summary of Benthic Data (cont.)

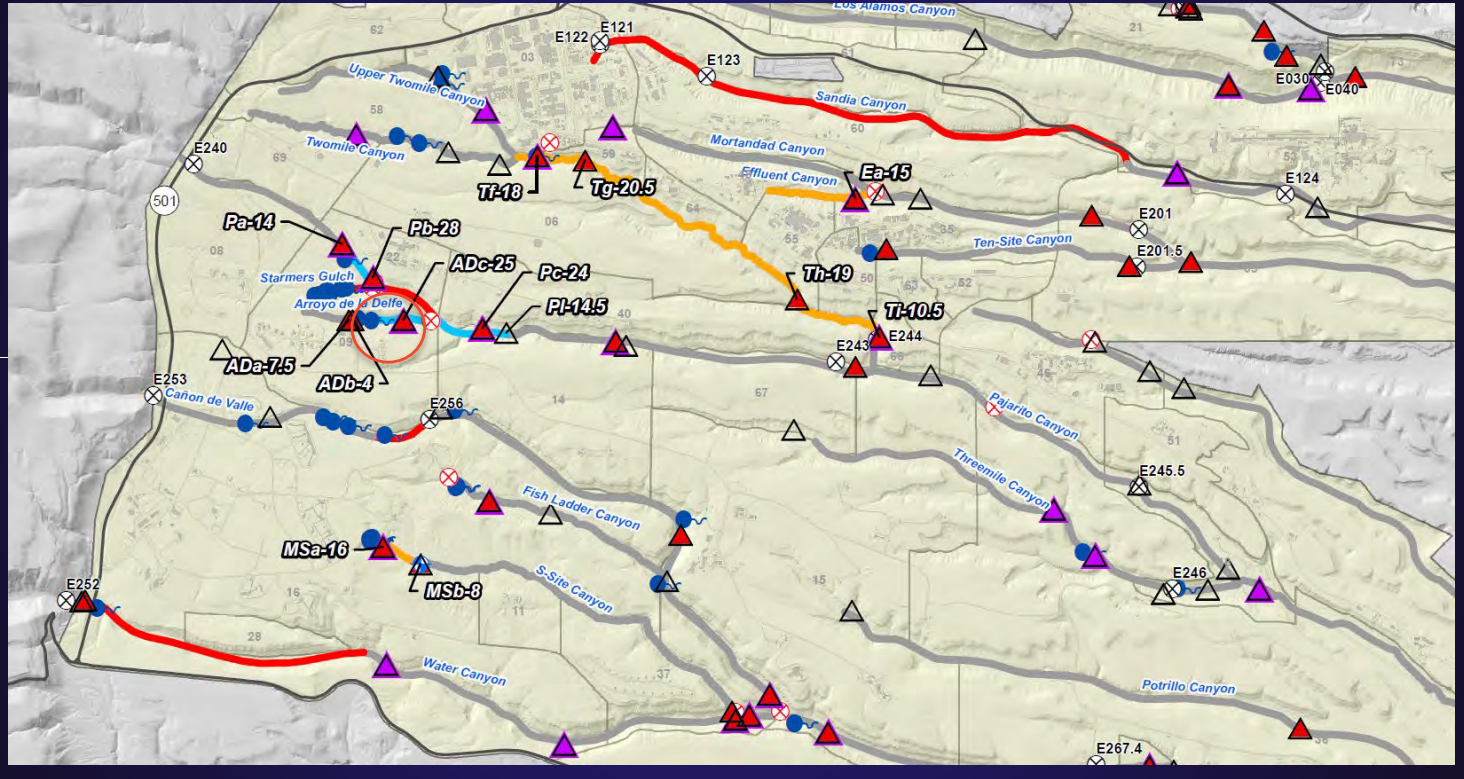
Summary of Bentic Data for Proposed Waters 2									
Segment	Level 1-2 Locations	Benthic Macroinvertebrates	Total Species Taxa Richness	EPT Taxa Richness	% EPT	Intolerant Taxa Richness	Long Lived Taxa Richness	Benthic Macroinvertebrate Narrative Score	EPT Taxa (Present/Absent)
Pajarito above Starmers Site 1	Pa-14	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Pajarito canyon from Starmers Gulch to Homestead Spring	Pb-28	1863.1	35.00	5.0	8.8	1.0	1.0	Moderate	Present
Pajarito canyon 0.5 miles below Arroyo de La Delfe	PC-24	2036.0	40.00	7.0	40.7	2.0	0.0	Moderate	Present
Arroyo de la Delfe from Pajarito canyon upstream to Kieling Spring	Ac-25	4136.0	36.00	4.0	7.5	0.0	3.0	Strong[1]	Present
S-Site canyon from alluvial groundwater well MSC 16-06293 upstream to Martin Spring	MSa-16	1431.8	30.00	1.0	3.3	0.0	3.0	Strong[1]	Present
Effluent canyon from Mortandad canyon confluence upstream its headwaters	Ea-15	148.0	13.00	2.0	87.8	0.0	0.0	Weak	Present
Two Mile Canyon below Confluence	Tf-18	132.0	23.00	1.0	0.8	1.0	0.0	Moderate	Present
Two Mile Canyon TA-59	Tg-20.5	793.5	37.00	5.0	31.0	0.0	1.0	Moderate	Present
Two Mile Canyon at TA-55 Confluence	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Two Mile above E244	Ti-10.5	Not Collected	N/A	N/A	N/A	N/A	N/A	-	-
1. bivalves present									

HP 2: Upstream/Downstream Pajarito Canyon Starmers Gulch to Homestead Spring

HP Level 2: HP 2: Midpoint Pajarito Canyon Starmers Gulch to Homestead Spring

Exhibit 39

Arroyo de La Delfe – Pajarito Canyon



2020 TR LANL-00663

HP Level 1 – Arroyo de la Delfe – Pajarito Canyon to Kieling Spring

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Elev. 7380

Date: 8/16/2016	Stream Name: Arroyo de la Delfe	Latitude: 35° 51' 25" N	
Evaluator(s): Fulton, Schilling, Drew	Site ID: Arroyo Del Delfe Downstream of Pajarito Springs	Longitude: 106° 20' 41" W	
TOTAL POINTS: (Stream is at least intermittent if ≥ 11) 25	Assessment Unit: NM-128.A_16	Drought Index (12-mo. SPI Value): 0.1	

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	Has there been a heavy rain in the last 48 hours?
	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) D ___%cloud cover ✓ clear/sunny	___ storm (heavy rain) ___ rain (steady rain) ✓ showers (intermittent) ___ %cloud cover ___ clear/sunny	___ YES ✓ NO **Field evaluations should be performed at least 48 hours after the last known major rainfall event. OTHER: Stream Modifications ___ YES ✓ NO Diversions ___ YES ✓ NO Discharges ___ YES ✓ NO **Explain in further detail in NOTES section

LEVEL 1 INDICATORS	STREAM CONDITION: Strong	Moderate	Weak	Poor
1.1. Water in Channel	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the runs.	Water is present in the channel but flow is barely discernable in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow.	Dry channel with standing pools. There is some evidence of base flows (i.e. riparian vegetation growing along channel, saturated or moist sediment under rocks, etc)	Dry channel. No evidence of base flows was found.
	6	4	2	0
1.2. Fish	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Fish are not present.
	3	2	1	(0)
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
	(3)	2	1	0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
	3	(2)	1	0
1.5. Differences in Vegetation	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach – riparian, aquatic, or wetland species dominate the length of the reach.	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two.	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands.
	(3)	2	1	0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed/thalweg.	There are a few rooted upland plants present within the streambed/thalweg.	Rooted upland plants are consistently dispersed throughout the streambed/thalweg.	Rooted upland plants are prevalent within the streambed/thalweg.
	(3)	2	1	0
SUBTOTAL (#1.1 – #1.6)				17

If the stream being evaluated has a subtotal ≤ 2 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.

LEVEL 1 INDICATORS	STREAM CONDITION: Strong	Moderate	Weak	Poor
1.7. Sinuosity	Ratio > 1.4. Stream has numerous, closely-spaced bends, few straight sections.	Ratio < 1.4. Stream has good sinuosity with some straight sections.	Ratio < 1.2. Stream has very few bends and mostly straight sections.	Ratio = 1.0. Stream is completely straight with no bends.
	3	(2)	1	0
1.8. Floodplain and Channel Dimensions	Ratio > 2.5. Stream is minimally confined with a wide, active floodplain. 3.13	Ratio between 1.2 and 2.5. Stream is moderately confined. Floodplain is present, but may only be active during larger floods.	Ratio < 1.2. Stream is incised with a noticeably confined channel. Floodplain is narrow or absent and typically disconnected from the channel.	
	(3)	1.5	0	
1.9. In-Channel Structure: Riffle-Pool Sequence	Demonstrated by a frequent number of riffles followed by pools along the entire reach. There is an obvious transition between riffles and pools.	Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult.	Stream shows some flow but mostly has areas of pools or of riffles.	There is no sequence exhibited.
	3	2	(1)	0
SUBTOTAL (#1.1 – #1.9)				17 + 6 = 23

If the stream being evaluated has a subtotal ≤ 5 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 21 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 5 and 21 continue the Level 1 Evaluation.

1.10. Particle Size or Stream Substrate Sorting	Particle sizes in the channel are noticeably different from particle sizes in areas close to but not in the channel. There is a clear distribution of various sized substrates in the stream channel with finer particles accumulating in the pools, and larger particles accumulating in the riffles/runs.		Particle sizes in the channel are moderately similar to particle sizes in areas close to but not in the channel. Various sized substrates are present in the stream channel and are represented by a higher ratio of larger particles (gravel/cobble).	Particle sizes in the channel are similar or comparable to particle sizes in areas close to but not in the channel. Substrate sorting is not readily observed in the stream channel. Silt in channel
	3		1.5 (0.5)	0
1.11. Hydric Soils	Hydric soils are found within the study reach.		Hydric soils are not found within the study reach.	
	Present = 3		Absent = 0	
1.12. Sediment on Plants and Debris	Sediment found readily on plants and debris within the stream channel, on the streambank, and within the floodplain throughout the length of the stream.	Sediment found on plants or debris within the stream channel although it is not prevalent along the stream. Mostly accumulating in pools.	Sediment is isolated in small amounts along the stream.	No sediment is present on plants or debris.
	1.5	1	0.5	(0)
TOTAL POINTS (#1.1 – #1.12)				23 + 0.5 = 23.5

SUPPLEMENTAL INDICATORS: The following indicators do not occur consistently throughout New Mexico but may be useful in the determination of perenniality. If the indicator is present record score below and tally with previous score to compute TOTAL.		
1.13. Seeps and Springs	Seeps and springs are found within the study reach.	Seeps and springs are not found within the study reach.
	Present = 1.5	Absent = 0
1.14. Iron Oxidizing Bacteria/Fungi	Iron-oxidizing bacteria and/or fungi are found within the study reach.	Iron-oxidizing bacteria and/or fungi are not found within the study reach.
	Present = 1.5	Absent = 0
TOTAL *plus* SUPPLEMENTAL POINTS (#1.1 – #1.14)		23.5 + 1.5 = 25

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HP Level 1 – Arroyo de la Delfe – Pajarito Canyon to Kieling Spring

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Photo Descriptions and NOTES

Photo #	Description (US, DS, LB, RB, etc.)	Notes
1	upstream	Photos by Brian
2	downstream	" "
3	right bank	" "
4	left bank	" "
5	overall channel	" "
6	Sediment from chnnel with benthics	

NOTES:

vegetation - locust, grasses, gooseberry, rushes, rose, thistle
benthics - worms, water striders, larvae (mayfly)

Intermittent shows → at TA-6 gage station .01" on 8/14/15 and .11" on 8/15

LEVEL 1 Field Measurements

Pebble Count Tally Sheet

Site Name: _____ Storet ID: _____

Date: _____ Crew: _____

Substrate Type	Diameter Range	In-Channel COUNT	In-Channel % Composition	Out of Channel COUNT	Out of Channel % Composition
Silt/Clay	< 0.06 mm				
Sand	0.06 – 2.0 mm (gritty)				
Gravel	2.0 – 64 mm	N/A			
Cobble	64 – 256	Brian 8/16/15			
Boulder	> 256 mm				
Bedrock	—				

Please be sure to measure at least 50 pebbles (10 in 5 transects or 5 in 10 transects- depending on stream size) for accurate distributional representation

INDICATOR #1.8 (*Floodplain and Channel Dimensions*) – MEASUREMENTS & CALCULATIONS**

Max Depth (#1)	Bankfull Stage (#2)	Maximum Depth Value (#3)	2x Maximum Depth Value (#3)	Flood-Prone Area Location (#4)	Flood-Prone Area Width (#5)	Bankfull Width (#6)	Floodplain to Active Channel Ratio (FPA Width / Bankfull Width)
6.77 ~~5.85~~	5.85	0.92	1.84	4.93	14.40'	4.60'	3.13

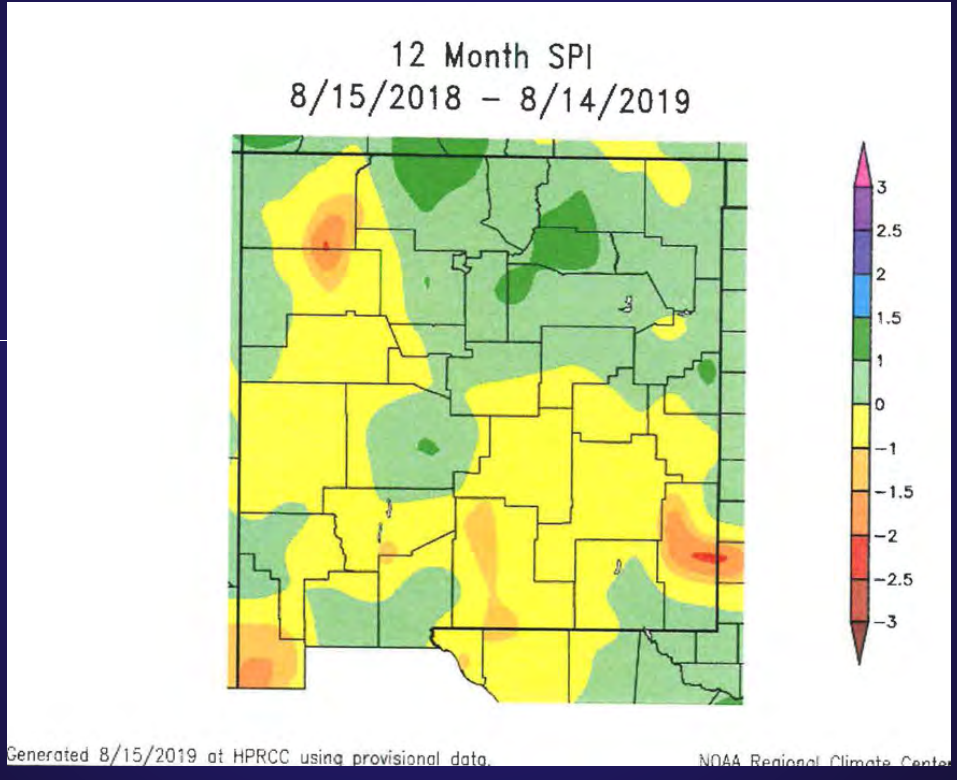
**REFER to Figure 3 on page 19 for clarification

6.77 5.85 .92 2 1.84

6.77 1.84 4.93

2020 TR LANL-00665

12 Month Standard Precipitation Index



Rainfall Amounts

Data is for tower ta6.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Fri Aug 16 06:31:18 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
8	13	2019	225	0
8	14	2019	226	0.01
8	15	2019	227	0.11

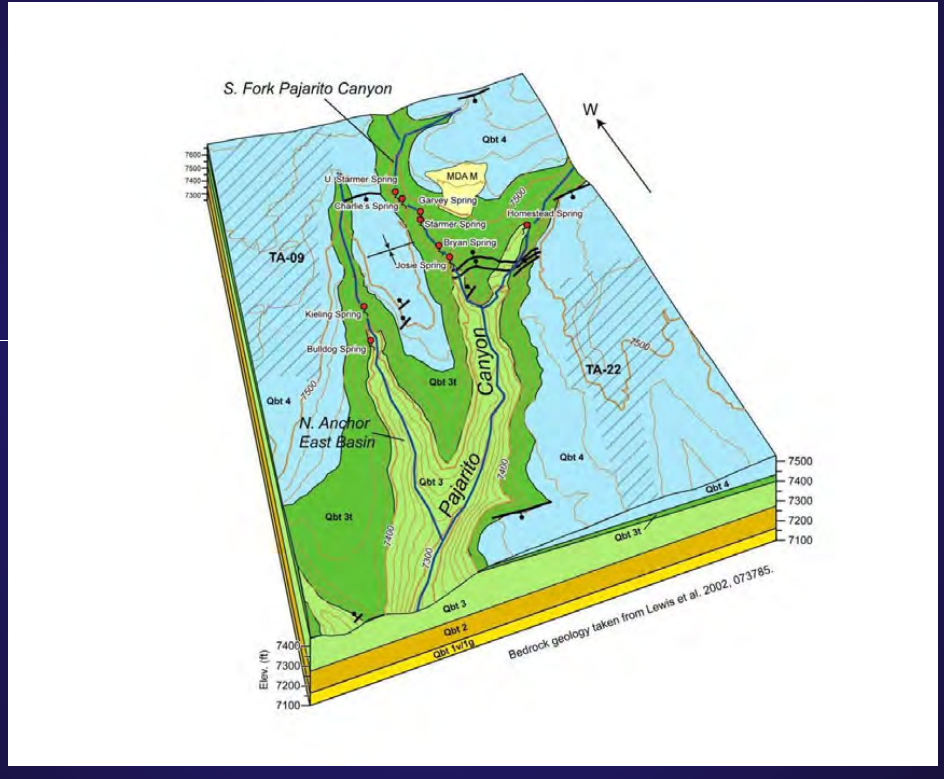
HP1 - Upstream/Downstream – Arroyo de la Delfe - Pajarito Canyon to Kieling Spring

HP 1 - Right/Left Bank – Arroyo de la Delfe – Pajarito Canyon to Kieling Spring

HP- 1 Upstream – Arroyo de la Delfe – Pajarito Canyon to Kieling Spring

HP 1 - Arroyo de la Delfe - Macroinvertebrates

Hydrogeologic Diagram of Pajarito Spring-Fed Reaches



E242.5 Arroyo de la Delfe above Pajarito

Summary of Gage Flow Statistics

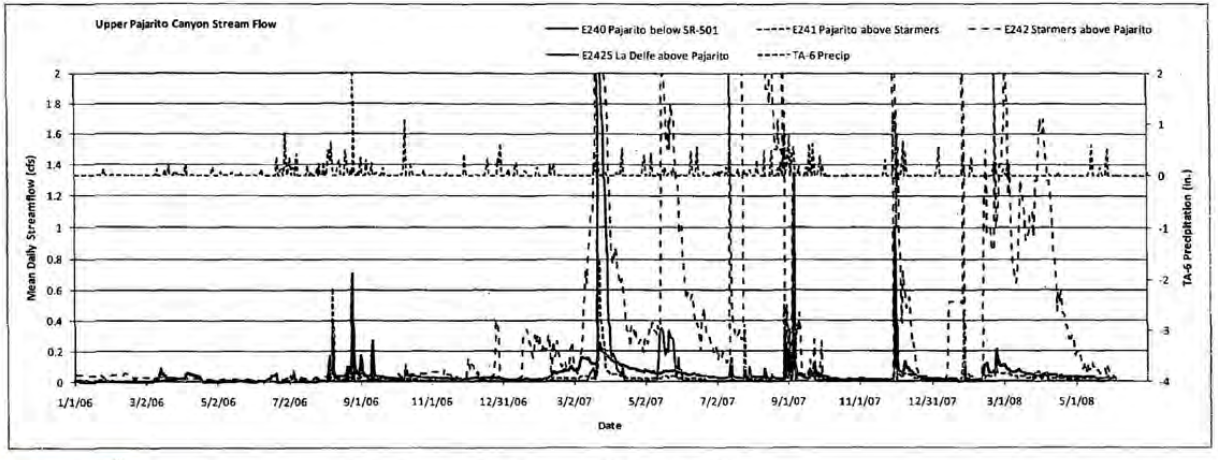
Station #	Station Name	Analysis Period	Average Percent Days of Flow	Flow Classification[1] Based on Percent Days with Flow	Current NMWQCC	*Proposed NMWQCC*
E240	Pajarito (below SR-501)	2000 - 2019	9.6%	Ephemeral / Intermittent	20.6.4.128	No change
E241	Pajarito (above Starmers)	2000 - 2009	76.8%	Intermittent / Perennial	20.6.4.128	20.6.4.126
E242	Pajarito (Starmer's Gulch)	2000 - 2009	97.5%	Perennial	20.6.4.126	No change
E242.5	Arroyo de la Delfe (above Pajarito)	2000 - 2009	81.8%	Perennial	20.6.4.128	20.6.4.126
E244	Twomile (above Pajarito)	2003 - 2011; 2015 - 2019	34.0%	Intermittent	20.6.4.128	20.6.4.140

Perennial flow
Borderline Intermittent / Perennial flow

[1]**Flow Classification based on criteria from Hedman & Osterkamp, 1982 (USGS Water Supply Paper #2193).**

Ephemeral: measurable discharge generally occurring less than 10% of the time
Intermittent: measurable surface discharge between 10 and 80% of the time
Perennial: measurable surface discharge > 80% of the time

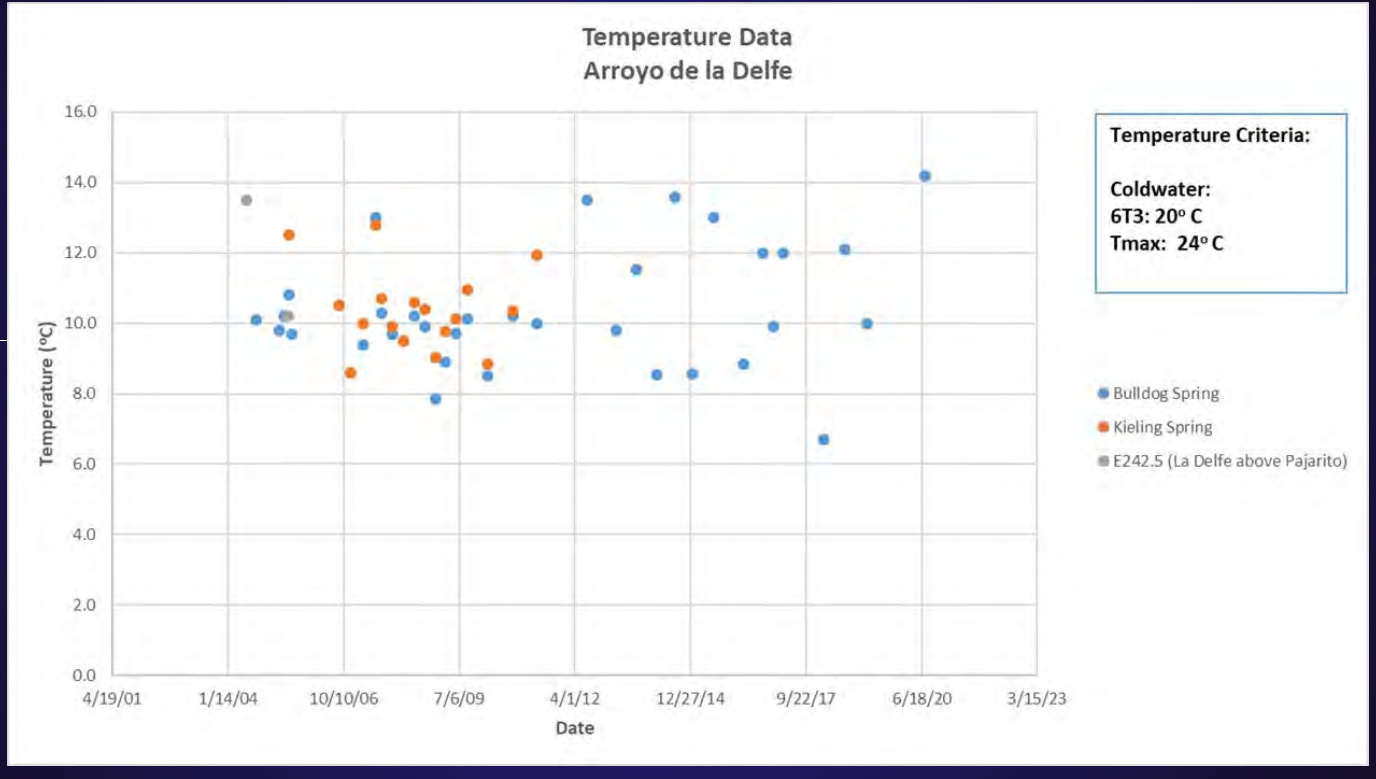
Stream Flow in Upper Pajarito (Pajarito Canyon Investigation Report (2009)



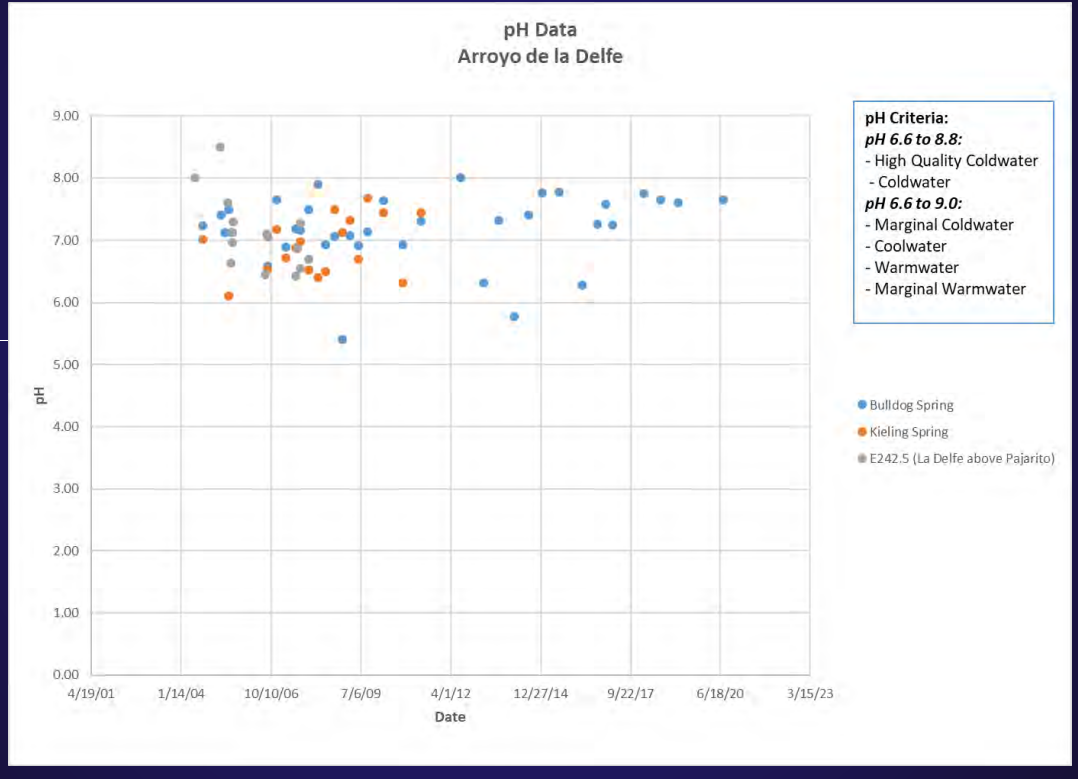
Pajarito Canyon Investigation Report

Figure L-2.0-2 Stream flow in upper Pajarito Canyon from January 2006 to June 2008

Temperature – Arroyo de la Delfe

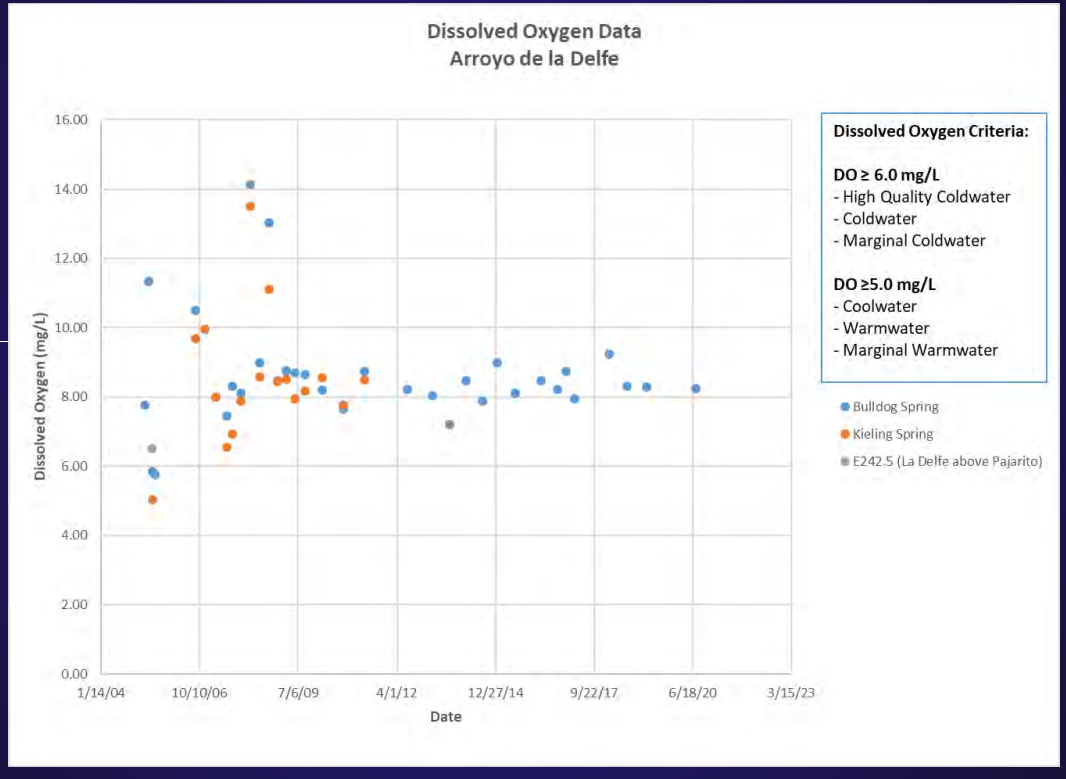


pH – Arroyo de la Delfe



2020 TR LANL-00676

DO – Arroyo de la Delfe



Temperatures - U.S. Fish and Wildlife Use Study (2002)

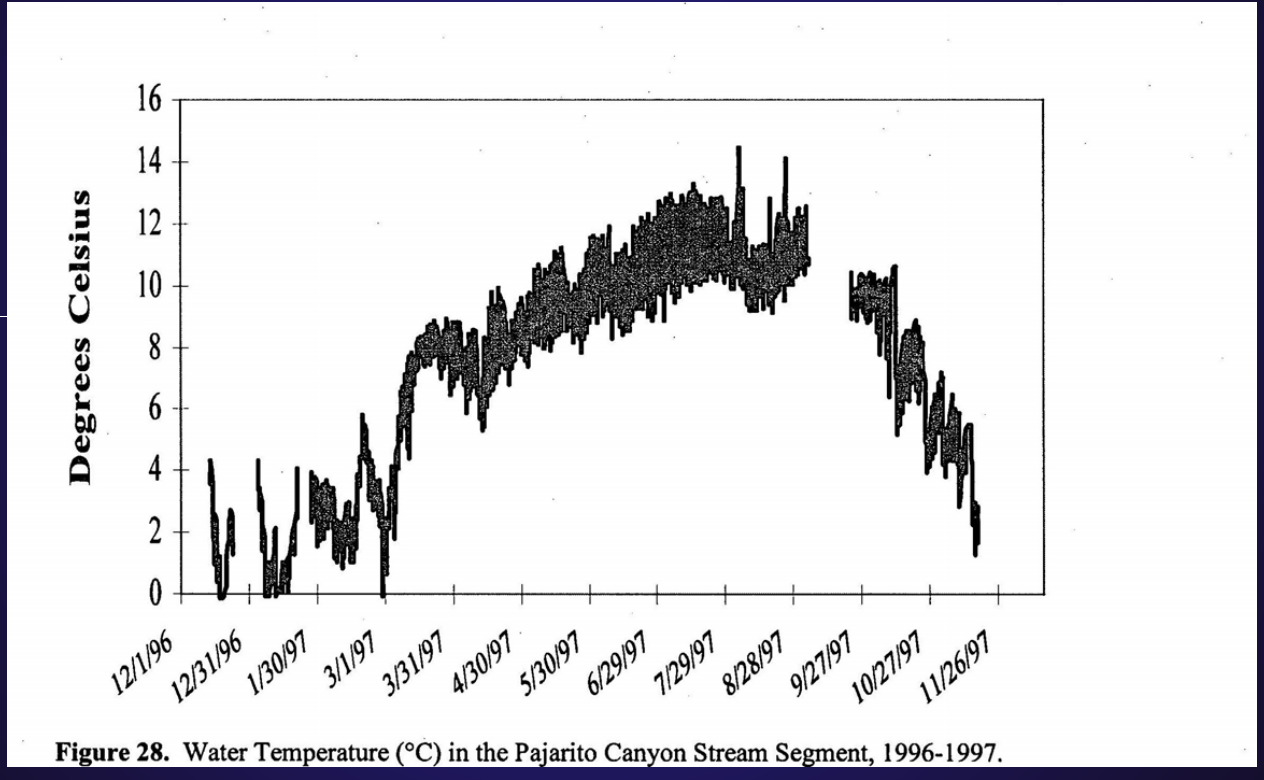
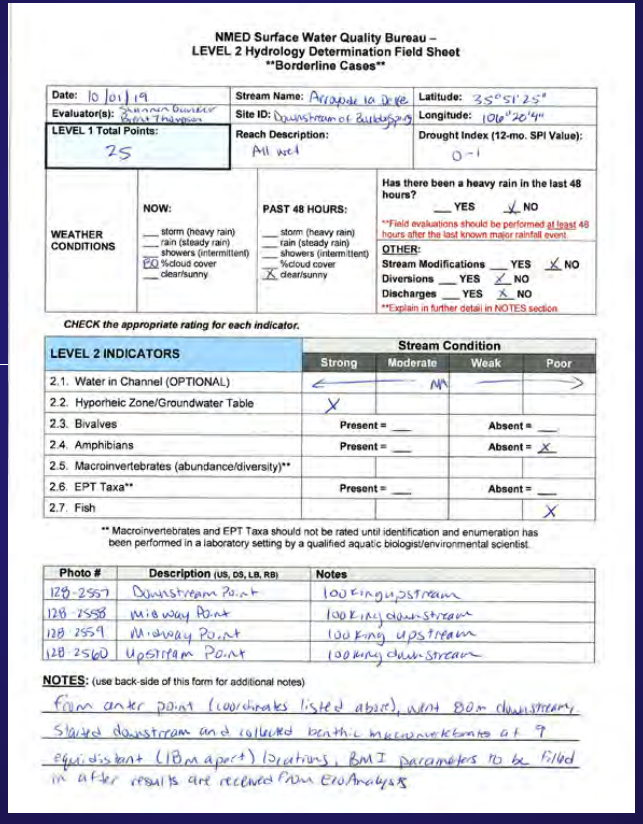


Figure 28. Water Temperature (°C) in the Pajarito Canyon Stream Segment, 1996-1997.

HP Level 2: Arroyo de la Delfe – Pajarito Canyon to Kieling Spring



NMED Surface Water Quality Bureau –
LEVEL 2 Hydrology Determination Field Sheet
****Borderline Cases****

Date: 10/01/19	Stream Name: Arroyo de la Delfe	Latitude: 35°51'25"
Evaluator(s): Shannon Bowser, Brent Thompson	Site ID: Downstream of Kieling Spring	Longitude: 106°20'44"
LEVEL 1 Total Points: 25	Reach Description: All wet	Drought Index (12-mo. SPI Value): 0-1

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:
	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) 80 %cloud cover ___ clear/sunny	___ storm (heavy rain) ___ rain (steady rain) ___ showers (interm/tent) ___ %cloud cover X clear/sunny

Has there been a heavy rain in the last 48 hours? ___ YES X NO

**Field evaluations should be performed at least 48 hours after the last known major rainfall event.

OTHER:
Stream Modifications ___ YES X NO
Diversions ___ YES X NO
Discharges ___ YES X NO
**Explain in further detail in NOTES section.

CHECK the appropriate rating for each indicator.

LEVEL 2 INDICATORS	Stream Condition: Strong	Moderate	Weak	Poor
2.1. Water in Channel (OPTIONAL)	←	NA	→	
2.2. Hyporheic Zone/Groundwater Table	X			
2.3. Bivalves	Present = ___		Absent = ___	
2.4. Amphibians	Present = ___		Absent = X	
2.5. Macroinvertebrates (abundance/diversity)**				
2.6. EPT Taxa**	Present = ___		Absent = ___	
2.7. Fish				X

** Macroinvertebrates and EPT Taxa should not be rated until identification and enumeration has been performed in a laboratory setting by a qualified aquatic biologist/environmental scientist.

Photo #	Description (US, DS, LB, RB)	Notes
128-2557	Downstream Point	100 King, upstream
128-2558	Midway Point	100 King, downstream
128-2559	Midway Point	100 King upstream
128-2560	Upstream Point	100 King downstream

NOTES: (use back-side of this form for additional notes)

From anker point (coordinates listed above), went 80m downstream, started downstream and collected benthic macroinvertebrates at 9 equidistant (18m apart) locations. BMI parameters to be filled in after results are received from EcoAnalysts

2020 TR LANL-00679

Summary of Benthic Data

Summary of Benthic Data for Proposed Waters 1			
Segment	**Level 1-2 Locations and Scores**	**Benthic Macroinvertebrate Narrative Score**	**EPT Taxa (Present/Absence)**
Pajarito above Starmers Site 1	Pa-14	-	-
Pajarito canyon from Starmers Gulch to Homestead Spring	Pb-28	Moderate	Present
Pajarito canyon 0.5 miles below Arroyo de La Delfe	Pc-24	Moderate	Present
Arroyo de la Delfe from Pajarito canyon upstream to Kieling Spring	Ac-25	Strong[1]	Present
S-Site canyon from alluvial groundwater well MSC 16-06293 upstream to Martin Spring	MSa-16	Strong[1]	Present
Effluent canyon from Mortandad canyon confluence upstream its headwaters	Ea-15	Weak	Present
Two Mile Canyon below Confluence	Tf-18	Moderate	Present
Two Mile Canyon TA-59	Tg-20.5	Moderate	Present
Two Mile Canyon at TA-55 Confluence	Th-19	-	-
Two Mile above E244	Ti-10.5	-	-
1. bivalves present			

Summary of Benthic Data (cont.)

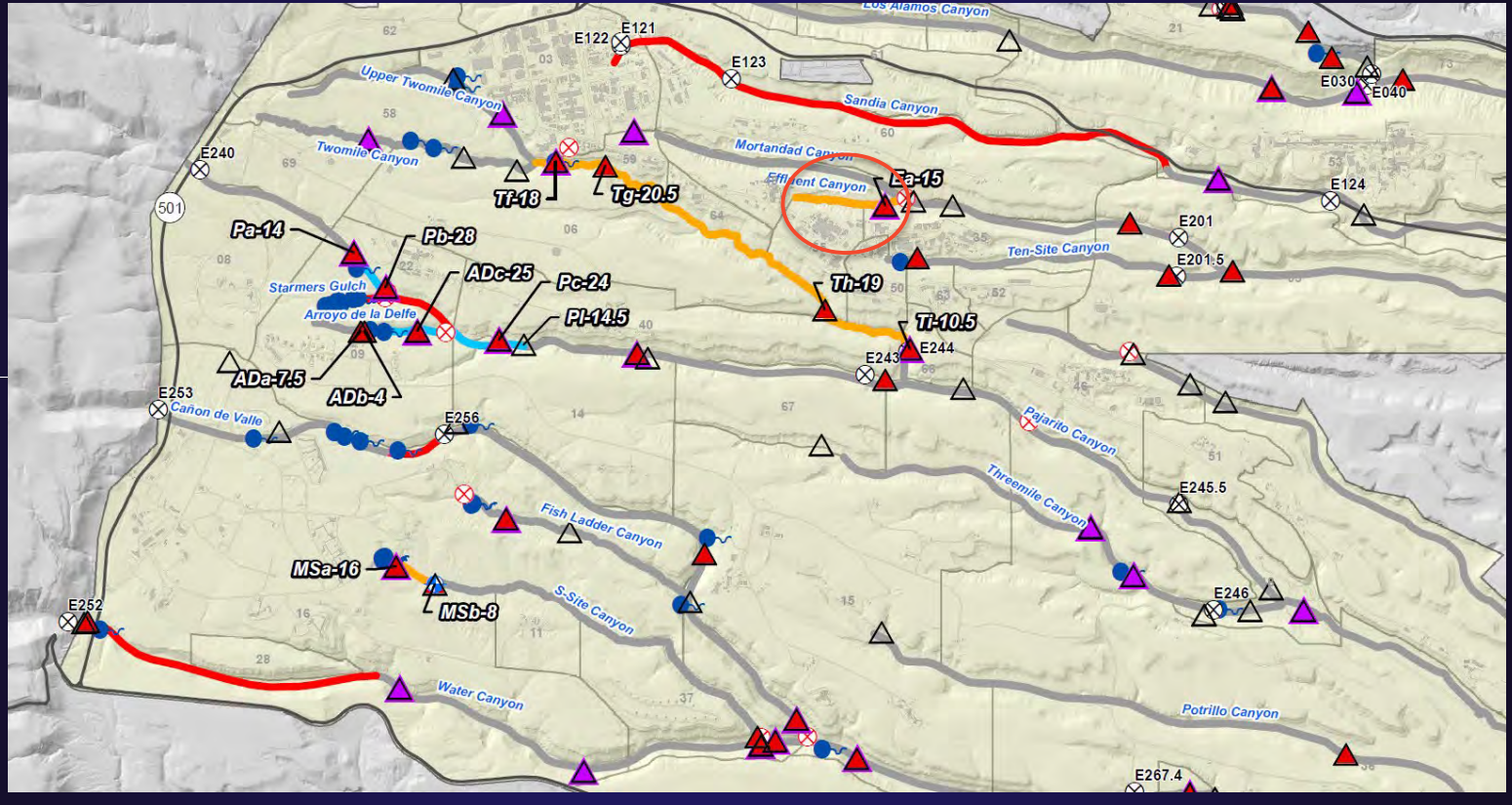
Summary of Bentic Data for Proposed Waters 2									
Segment	Level 1-2 Locations	Benthic Macroinvertebrates	Total Species Taxa Richness	EPT Taxa Richness	% EPT	Intolerant Taxa Richness	Long Lived Taxa Richness	Benthic Macroinvertebrate Narrative Score	EPT Taxa (Present/Absent)
Pajarito above Starmers Site 1	Pa-14	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Pajarito canyon from Starmers Gulch to Homestead Spring	Pb-28	1863.1	35.00	5.0	8.8	1.0	1.0	Moderate	Present
Pajarito canyon 0.5 miles below Arroyo de La Delfe	PC-24	2036.0	40.00	7.0	40.7	2.0	0.0	Moderate	Present
Arroyo de la Delfe from Pajarito canyon upstream to Kieling Spring	Ac-25	4136.0	36.00	4.0	7.5	0.0	3.0	Strong[1]	Present
S-Site canyon from alluvial groundwater well MSC 16-06293 upstream to Martin Spring	MSa-16	1431.8	30.00	1.0	3.3	0.0	3.0	Strong[1]	Present
Effluent canyon from Mortandad canyon confluence upstream its headwaters	Ea-15	148.0	13.00	2.0	87.8	0.0	0.0	Weak	Present
Two Mile Canyon below Confluence	Tf-18	132.0	23.00	1.0	0.8	1.0	0.0	Moderate	Present
Two Mile Canyon TA-59	Tg-20.5	793.5	37.00	5.0	31.0	0.0	1.0	Moderate	Present
Two Mile Canyon at TA-55 Confluence	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Two Mile above E244	Ti-10.5	Not Collected	N/A	N/A	N/A	N/A	N/A	-	-
1. bivalves present									

HP 2: Upstream/Downstream Arroyo de la Delfe below Kieling Spring

HP Level 2: Upstream/Downstream Arroyo de la Delfe below Kieling Spring

Exhibit 40

Effluent Canyon - Mortandad to Headwaters



2020 TR LANL-00685

HP Level 1 – Effluent Canyon Mortadad to Headwaters

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Elevation: 7,110 ft.

Date: 9/5/2019	Stream Name: Effluent Canyon	Latitude: 35°51'54" N
Evaluator(s): * See Notes	Site ID: [illegible]	Longitude: 106° 17' 52" W
TOTAL POINTS: 15 (Stream is at least intermittent if ≥ 12)	Assessment Unit: N/A	Drought Index (12-mo. SPI Value): 0-1

WEATHER CONDITIONS	NOW:	PAST 48 HOURS:	
	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ %cloud cover X clear/sunny	___ storm (heavy rain) ___ rain (steady rain) ___ showers (intermittent) ___ %cloud cover X clear/sunny	Has there been a heavy rain in the last 48 hours? ___ YES X NO **Field evaluations should be performed at least 48 hours after the last known major rainfall event. OTHER: Stream Modifications X YES ___ NO Diversions ___ YES X NO Discharges X YES ___ NO **Explain in further detail in NOTES section

LEVEL 1 INDICATORS	STREAM CONDITION: Strong	Moderate	Weak	Poor
1.1. Water in Channel	Flow is evident throughout the reach. Moving water is seen in riffle areas but may not be as evident throughout the runs.	Water is present in the channel but flow is barely discernable in areas of greatest gradient change (i.e. riffles) or floating object is necessary to observe flow.	Dry channel with standing pools. There is some evidence of base flows (i.e. riparian vegetation growing along channel, saturated or moist sediment under rocks, etc)	Dry channel. No evidence of base flows was found
	6	4	(2)	0
1.2. Fish	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Fish are not present.
	3	2	1	(0)
1.3. Benthic Macroinvertebrates	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Macroinvertebrates are not present.
	3	2	(1)	0
1.4. Filamentous Algae/Periphyton	Found easily and consistently throughout the reach.	Found with little difficulty but not consistently throughout the reach.	Takes 10 or more minutes of extensive searching to find.	Filamentous algae and/or periphyton are not present.
	3	2	1	(0)
1.5. Differences in Vegetation Veg Found: [illegible], chokecherry, Virginia Creeper, [illegible], [illegible] grass; Riparian Vegetation in patches – uneven distribution	Dramatic compositional differences in vegetation are present between the stream banks and the adjacent uplands. A distinct riparian vegetation corridor exists along the entire reach – riparian, aquatic, or wetland species dominate the length of the reach.	A distinct riparian vegetation corridor exists along part of the reach. Riparian vegetation is interspersed with upland vegetation along the length of the reach.	Vegetation growing along the reach may occur in greater densities or grow more vigorously than vegetation in the adjacent uplands, but there are no dramatic compositional differences between the two.	No compositional or density differences in vegetation are present between the streambanks and the adjacent uplands.
	3	2	(1.5) 1	0
1.6. Absence of Rooted Upland Plants in Streambed	Rooted upland plants are absent within the streambed/thalweg	There are a few rooted upland plants present within the streambed/thalweg	Rooted upland plants are consistently dispersed throughout the streambed/thalweg	Rooted upland plants are prevalent within the streambed/thalweg.
	3	(2)	1	0
			SUBTOTAL (#1.1 – #1.6)	6.5

If the stream being evaluated has a subtotal ≤ 2 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 18 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 2 and 18 continue the Level 1 Evaluation.

LEVEL 1 INDICATORS	STREAM CONDITION: Strong	Moderate	Weak	Poor
1.7. Sinuosity	Ratio > 1.4. Stream has numerous, closely-spaced bends, few straight sections.	Ratio < 1.4. Stream has good sinuosity with some straight sections.	Ratio < 1.2. Stream has very few bends and mostly straight sections.	Ratio = 1.0. Stream is completely straight with no bends.
	3	(2)	1	0
1.8. Floodplain and Channel Dimensions	Ratio > 2.5. Stream is minimally confined with a wide, active floodplain.	Ratio between 1.2 and 2.5. 1.26 Stream is moderately confined. Floodplain is present, but may only be active during larger floods.		Ratio < 1.2. Stream is incised with a noticeably confined channel. Floodplain is narrow or absent and typically disconnected from the channel.
	3	(1.5)		0
1.9. In-Channel Structure: Riffle-Pool Sequence	Demonstrated by a frequent number of riffles followed by pools along the entire reach. There is an obvious transition between riffles and pools.	Represented by a less frequent number of riffles and pools. Distinguishing the transition between riffles and pools is difficult.	Stream shows some flow but mostly has areas of pools or of riffles.	There is no sequence exhibited.
	(3)	2	1	0
			SUBTOTAL (#1.1 – #1.9)	13

If the stream being evaluated has a subtotal ≤ 5 at this juncture, the stream is determined to be EPHEMERAL.
If the stream being evaluated has a subtotal ≥ 21 at this point, the stream is determined to be PERENNIAL.
YOU MAY STOP THE EVALUATION AT THIS POINT. If the stream has a subtotal between 5 and 21 continue the Level 1 Evaluation.

LEVEL 1 INDICATORS	Strong	Moderate	Weak	Poor
1.10. Particle Size or Stream Substrate Sorting	Particle sizes in the channel are noticeably different from particle sizes in areas close to but not in the channel. There is a clear distribution of various sized substrates in the stream channel with finer particles accumulating in the pools, and larger particles accumulating in the riffles/runs.	Particle sizes in the channel are moderately similar to particle sizes in areas close to but not in the channel. Various sized substrates are present in the stream channel and are represented by a higher ratio of larger particles (gravel/cobble).		Particle sizes in the channel are similar or comparable to particle sizes in areas close to but not in the channel. Substrate sorting is not readily observed in the stream channel.
	3	(1.5)		0
1.11. Hydric Soils	Hydric soils are found within the study reach.		Hydric soils are not found within the study reach.	
	Present = 3		Absent (= 0)	
1.12. Sediment on Plants and Debris	Sediment found readily on plants and debris within the stream channel, on the streambank, and within the floodplain throughout the length of the stream.	Sediment found on plants or debris within the stream channel although it is not prevalent along the stream. Mostly accumulating in pools.	Sediment is isolated in small amounts along the stream.	No sediment is present on plants or debris.
	1.5	1	(0.5)	0
			TOTAL POINTS (#1.1 – #1.12)	15

SUPPLEMENTAL INDICATORS: The following indicators do not occur consistently throughout New Mexico but may be useful in the determination of perenniality. If the indicator is present record score below and tally with previous score to compute TOTAL.

1.13. Seeps and Springs SEP GCS retain water	Seeps and springs are found within the study reach.	Seeps and springs are not found within the study reach.
	Present = 1.5	Absent (= 0)
1.14. Iron Oxidizing Bacteria/Fungi	Iron-oxidizing bacteria and/or fungi are found within the study reach.	Iron-oxidizing bacteria and/or fungi are not found within the study reach.
	Present = 1.5	Absent (= 0)
TOTAL *plus* SUPPLEMENTAL POINTS (#1.1 – #1.14)		15

HP Level 1 – Effluent Canyon Mortadad to Headwaters

LEVEL 1 Field Measurements

Pebble Count Tally Sheet

Site Name: ____________________ **Storet ID:** ____________________
Date: ____________________ **Crew:** ____________________

Substrate Type	Diameter Range	In-Channel COUNT	In-Channel % Composition	Out of Channel COUNT	Out of Channel % Composition
Silt/Clay	< 0.06 mm				
Sand	0.06 – 2.0 mm (gritty)				
Gravel	2.0 – 64 mm	N/A BRZ 9/9/19			
Cobble	64 – 256				
Boulder	> 256 mm				
Bedrock	---				

Please be sure to measure at least 50 pebbles (10 in 5 transects or 5 in 10 transects-depending on stream size) for accurate distributional representation

INDICATOR #1.8 (*Floodplain and Channel Dimensions*) – MEASUREMENTS & CALCULATIONS**							
Max Depth (#1)	Bankfull Stage (#2)	Maximum Depth Value (#3)	2x Maximum Depth Value (#3)	Flood-Prone Area Location (#4)	Flood-Prone Area Width (#5)	Bankfull Width (#6)	Floodplain to Active Channel Ratio (FPA Width / Bankfull Width)
9.23'	8.50'	.73'	1.46'	7.77'	6.4'	5.0'	1.28

**REFER to Figure 3 on page 19 for clarification

NMED Surface Water Quality Bureau – LEVEL 1 Hydrology Determination Field Sheet

Photo Descriptions and NOTES

Photo #	Description (US, DS, LB, RB, etc.)	Notes
1	Upstream	
2	Downstream	
3	Right Bank	
4	Left Bank	
5	Overall Channel Upstream	
6	Macroinvertebrate-Worm	

NOTES:

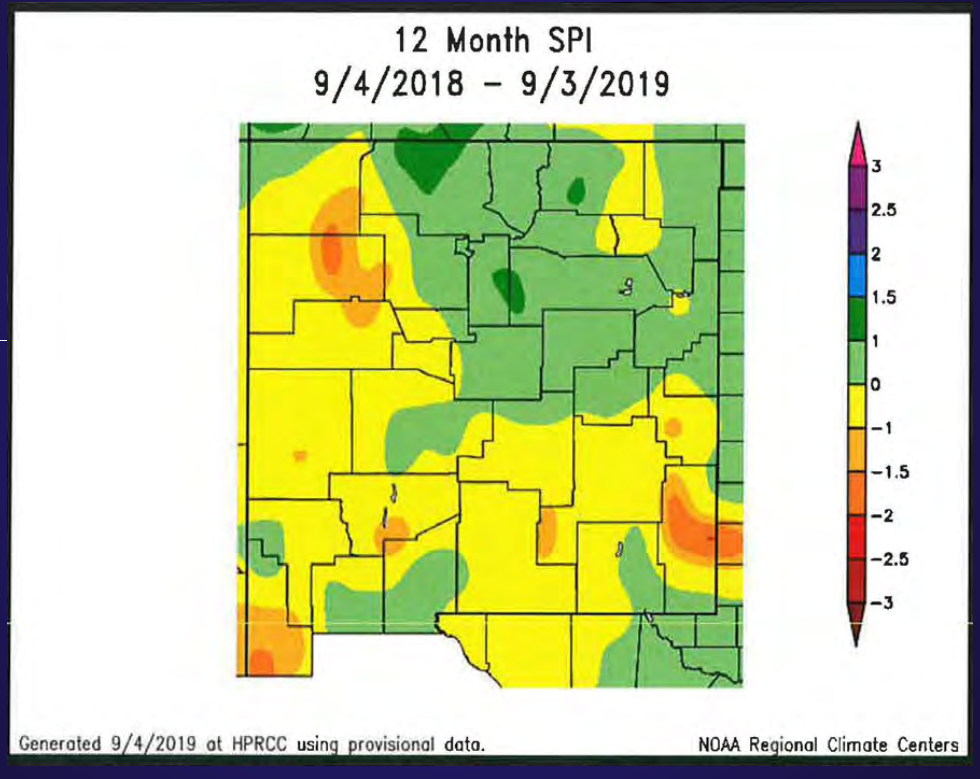
Evaluators: Marcie Shendo, Jim Loftin, Brad Schilling, Jennifer Fullam, Cruz Dominguez

Stream modification: SEP Grade Control Structure

Discharge - Downstream of outfall 051 - not currently discharging
* 21,345 gallons of effluent discharged from outfall on a single day in June 2019

2020 TR LANL-00687

12 Month Standard Precipitation Index



Rainfall Amounts

Data is for tower ta6.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 05 13:41:36 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	1	2019	244	0.25
9	2	2019	245	0
9	3	2019	246	0
9	4	2019	247	0

Data is for tower ta49.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 05 13:42:11 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	1	2019	244	0.16
9	2	2019	245	0
9	3	2019	246	0
9	4	2019	247	0

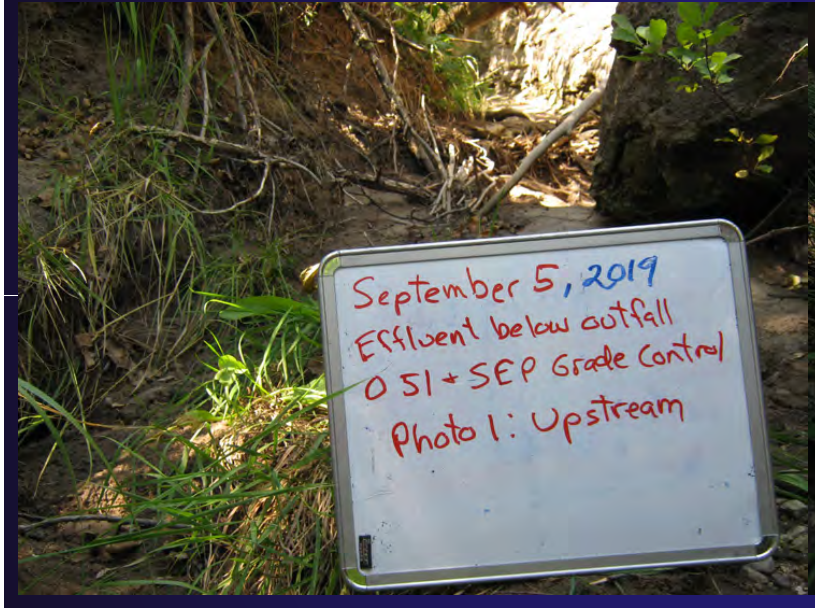
Data is for tower ta53.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 05 13:42:59 2019 MST.
All data times are MST.

month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	1	2019	244	0.04
9	2	2019	245	0
9	3	2019	246	0
9	4	2019	247	0

Data is for tower ta54.
This file was obtained from the LANL Weather Machine, http://weather.lanl.gov.
Request made on Thu Sep 05 13:43:28 2019 MST.
All data times are MST.

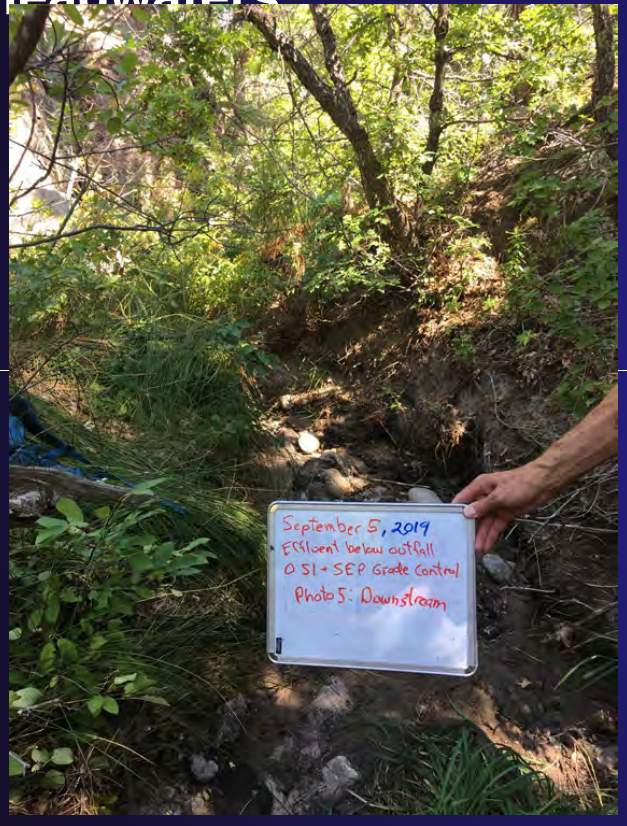
month	day	year	doy	tprecip
mm	dd	yyyy	ddd	in
9	1	2019	244	0
9	2	2019	245	0.19
9	3	2019	246	0
9	4	2019	247	0

Upstream/Downstream - Effluent Canyon from Mortandad toHeadwaters



Right Bank/Left Bank – Effluent Canyon Mortandad to Headwaters

Downstream and – Effluent Canyon Motandad to Headwaters



NMED Surface Water Quality Bureau –
LEVEL 2 Hydrology Determination Field Sheet
****Borderline Cases****

Date: 10/22/19 9:20	**Stream Name:** Effluent Canyon	**Latitude:** 35°51'54"
Evaluator(s): Shannon Gaukler, Somastana, Katie	**Site ID:** Below 051 outfall	**Longitude:** -106°17'52"
LEVEL 1 Total Points: 15 (11/9/19)	**Reach Description:** One small pool	**Drought Index (12-mo. SPI Value):** 0-1

WEATHER CONDITIONS	**NOW:** __ storm (heavy rain) __ rain (steady rain) __ showers (intermittent) __ %cloud cover X clear/sunny	**PAST 48 HOURS:** __ storm (heavy rain) __ rain (steady rain) __ showers (intermittent) __ %cloud cover X clear/sunny	**Has there been a heavy rain in the last 48 hours?** __ YES X NO **Field evaluations should be performed at least 48 hours after the last known major rainfall event. **OTHER:** **Stream Modifications** X YES __ NO **Diversions** __ YES X NO **Discharges** X YES __ NO **Explain in further detail in NOTES section

CHECK the appropriate rating for each indicator.

LEVEL 2 INDICATORS	Stream Condition			
	Strong	Moderate	Weak	Poor
2.1. Water in Channel (OPTIONAL)	←	N/A		→
2.2. Hyporheic Zone/Groundwater Table				X
2.3. Bivalves	Present = __		Absent = X	
2.4. Amphibians	Present = __		Absent = X	
2.5. Macroinvertebrates (abundance/diversity)**				
2.6. EPT Taxa**	Present = __		Absent = __	
2.7. Fish				X

** Macroinvertebrates and EPT Taxa should not be rated until identification and enumeration has been performed in a laboratory setting by a qualified aquatic biologist/environmental scientist.

Photo #	Description (US, DS, LB, RB)	Notes
128-2606	upstream point	looking downstream
128-2605	midway point	looking upstream
128-2604	midway point	looking downstream
128-2603	downstream poit	looking upstream

NOTES: (use back-side of this form for additional notes)

from center point listed above, assessed stream bed 80 m downstream and 80 m upstream. One small pool of water collected @ 25 m downstream. BMI'S parameters to be filled in after results are received from BioAnalysts
Outfalls present at end of upstream point. Outfalls visible in photo 128-2606

Summary of Benthic Data

Summary of Benthic Data for Proposed Waters 1			
Segment	**Level 1-2 Locations and Scores**	**Benthic Macroinvertebrate Narrative Score**	**EPT Taxa (Present/Absence)**
Pajarito above Starmers Site 1	Pa-14	-	-
Pajarito canyon from Starmers Gulch to Homestead Spring	Pb-28	Moderate	Present
Pajarito canyon 0.5 miles below Arroyo de La Delfe	Pc-24	Moderate	Present
Arroyo de la Delfe from Pajarito canyon upstream to Kieling Spring	Ac-25	Strong[1]	Present
S-Site canyon from alluvial groundwater well MSC 16-06293 upstream to Martin Spring	MSa-16	Strong[1]	Present
Effluent canyon from Mortandad canyon confluence upstream its headwaters	Ea-15	Weak	Present
Two Mile Canyon below Confluence	Tf-18	Moderate	Present
Two Mile Canyon TA-59	Tg-20.5	Moderate	Present
Two Mile Canyon at TA-55 Confluence	Th-19	-	-
Two Mile above E244	Ti-10.5	-	-
1. bivalves present			

Summary of Benthic Data (cont.)

Summary of Bentic Data for Proposed Waters 2									
Segment	Level 1-2 Locations	Benthic Macroinvertebrates	Total Species Taxa Richness	EPT Taxa Richness	% EPT	Intolerant Taxa Richness	Long Lived Taxa Richness	Benthic Macroinvertebrate Narrative Score	EPT Taxa (Present/Absent)
Pajarito above Starmers Site 1	Pa-14	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Pajarito canyon from Starmers Gulch to Homestead Spring	Pb-28	1863.1	35.00	5.0	8.8	1.0	1.0	Moderate	Present
Pajarito canyon 0.5 miles below Arroyo de La Delfe	PC-24	2036.0	40.00	7.0	40.7	2.0	0.0	Moderate	Present
Arroyo de la Delfe from Pajarito canyon upstream to Kieling Spring	Ac-25	4136.0	36.00	4.0	7.5	0.0	3.0	Strong[1]	Present
S-Site canyon from alluvial groundwater well MSC 16-06293 upstream to Martin Spring	MSa-16	1431.8	30.00	1.0	3.3	0.0	3.0	Strong[1]	Present
Effluent canyon from Mortandad canyon confluence upstream its headwaters	Ea-15	148.0	13.00	2.0	87.8	0.0	0.0	Weak	Present
Two Mile Canyon below Confluence	Tf-18	132.0	23.00	1.0	0.8	1.0	0.0	Moderate	Present
Two Mile Canyon TA-59	Tg-20.5	793.5	37.00	5.0	31.0	0.0	1.0	Moderate	Present
Two Mile Canyon at TA-55 Confluence	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	-
Two Mile above E244	Ti-10.5	Not Collected	N/A	N/A	N/A	N/A	N/A	-	-
1. bivalves present									

HP 2: Downstream/Upstream Effluent Canyon Mortandad to Headwaters

HP 2: Downstream/Upstream Effluent Canyon Mortandad to Headwaters