Supporting Information for R189-08
Summary of Public Outreach
Select Public Comment and Division Response

The Nevada Division of Environmental Protection held public workshops on the proposed regulations on May 13th in Las Vegas and May 14th in Carson City. Approximately 50 people combined attended the workshops, largely representing the regulated community and the environmental consulting industry.

In addition to the public workshops, targeted outreach was made to agencies responsible for resource management, local governments, and large facility owners who may be impacted by the propose regulations.

Outreach made to:

American Council of Engineering Companies

Resource management agencies:

Truckee Meadows Water Authority
Southern Nevada Water Authority
Las Vegas Valley Watershed Advisory Council

Facilities provided with outreach:

Department of Defense (Hawthorne Army Depot, Nellis AFB, NAS Fallon)
Kinder Morgan
Boeing

Official comments were solicited through public announcement, targeted outreach, and public workshops. The Nevada Division of Environmental Protection fielded numerous clarifying questions and informal comments that help to involve language changes being suggested by the Division in the errata sheet for R189-08. Official comment letters were received from the American Council of Engineering Companies, Kinder Morgan, and a certified environmental manager. Response to comments were prepared for all formal comments received. Response to comments for Kinder Morgan and Ms. Tamara Pelham have been attached for consideration by the State Environmental Commission. These response to comments were selected because they encapsulate the major issues discussed in public workshops and outreach efforts.

Additional comments are being accepted up to the date of the SEC hearing, and the SEC members will be informed of the receipt of any comments requiring attention at the time of the hearing. The NDEP will provide official response to any comments received and will include them in the administrative record for proposed regulation R189-08

ndep
NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
protecting the future for generations

STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

May 19, 2009

Jacquelin Buratovich, P.E.
Contract Project Manager
Kinder Morgan Energy Partners, L.P.
370 Van Gordon Street
Lakewood, CO 80228-8304

RE: **Response to comments on Revised Proposed Regulation of the State Environmental Commission LCB File No. R189-08**

Dear Ms. Buratovich:

The Nevada Division of Environmental Protection, Bureau of Corrective Actions received comments on the referenced proposed regulations from your office in correspondence dated May 7, 2009. The referenced proposed regulation includes revisions to the State of Nevada site cleanup and leaking underground storage tank programs. Comments have been accepted as part of the public involvement process prior to a hearing for adoption in front of the State Environmental Commission. The comments and responses will be incorporated into the public record accompanying the proposed regulation at the SEC hearing.

Comment: *Section 4.Why is this a 'stand-alone' section instead of being integrated into 445A 227, 2272, and 22725?*
Response: This was written as a stand-alone section in order to prevent redundancy of language across several sections of the Chapter. While this was largely a stylistic choice, we do believe that dealing with environmental covenants in a single section serves some minor functional purposes as well. First, it does not give undue importance to the use of environmental covenants as one tool among many to protect human health and the environment. If language relevant to environmental covenants was integrated across all sections where decisions are made about the protection of human health and the environment, it might be indicative that environmental covenants were given preference over other remedial options. Secondly, the language of this section was drafted to emphasize the voluntary nature of environmental covenants; integration across several sections might confuse the voluntary nature through drafting errors or simply by undue repetition.

Comment: *Section 8(3). In this section as in other sections with multiple conditions, it would be helpful to clarify whether the provisions are alternative, or whether all conditions apply. This can be determined by the convention requiring the reader to look for the final conjunction in the list ("and" or "or");however, it is not clear that this drafting convention is always deliberate or intended or applied. Apparently, the provisions of Section 8(3) are*

intended to be alternatives, but the ambiguities could be avoided with additional text – "follow up reporting is sufficient to demonstrate one or more of the following:"
Response: The convention for the construction of series using an "and" or an "or" conjunction is deliberate and strictly adhered to by Legislative Counsel Bureau drafters of statutory and regulatory language in the NRS and NAC. An "and" construction requires that all elements in the series be true. An "or" construction requires that only one element in the series be true. The provisions of Section 8(3) are intended to be alternatives and are governed by the "or" construction. However, because this section contains multiple subsections that complicate comprehension and since other reviewers have indicated confusion, the Division will look at their options for adding clarifying language similar to that recommended in the comment.

Comment: *Section 8(3)(a). This provision is ambiguous. It apparently intends to say that an assessment may not be necessary if abatement actions taken by the owner or operator reduce contamination below the action level, but it could be read to mean that the excessive levels of contamination were not caused by the owner or operator.*
Response: The intention of the regulatory language is interpreted correctly by the commenter. The Division recognizes the ambiguity as being logically valid; however, we do not envision that the language will result in ambiguity in practice. The identified ambiguity is present in the existing regulation and has never been identified as a source of confusion by the regulated community. Also, the abatement actions taken by a facility owner/operator pursuant to NAC 445A.22695 must, by the very nature of abatement, result in the reduction of contamination, not an increase, so the comparison against action levels referred to in this subsection must necessarily be in terms of a reduction of contamination not a contribution. However, the Division will look at their options for changing the proposed language from "The level of contamination of the soil **does not exceed**" to "The level of contamination of the soil **no longer exceeds**" for clarification.

Comment: *Section 8(3)(c). It would be helpful to define "environmental media."*
Response: Drafting guides for regulatory and statutory language indicate that a word or phrase that is used in only one section of a Chapter is not given a meaning in the preface sections of a Chapter. Definitions are also not required where the meaning of a phrase is not subject to different interpretations. As presented in this subsection, environmental media are limited to those explicitly dealt with in the corrective action portions of NAC 445A, which includes soil, groundwater, and surface water.

Comment: *Section 9(2)(a). "actual or imminent effect on groundwater..." Since a substance could be released into groundwater and cause an 'effect' that poses no risk (no receptors, de minimus quantities), would it not be appropriate to qualify this requirement with some measure of risk?*
Response: The equivalent language in the existing regulation is "actual or imminent *impact* on groundwater." The proposed regulation replaces "impact" with "effect" since drafting guidelines gives preference to the term "effect" over "impact." The Division has no control over the drafting guidelines and must defer to the Legislative Council Bureau on this substitution.

While it may be the case that the original phrasing, with the term "impact," was more open to risk considerations, the Division does not fundamentally disagree with the use of the word "effect." The Division must uphold statutory mandates to prevent degradation of waters of

the State, and this mandate is not tied to acceptable risk or receptor use. When interpreting the regulations, the Division will maintain the priority to prevent ***any*** discharge to waters of the State that are not regulated under permit. This does not affect the Division's ability to establish appropriate action levels and make consideration of risk when determining acceptable cleanup actions for waters that have already been impacted; this section merely gives authority to the Division to consider taking action on a release to prevent groundwater contamination before the contamination occurs.

Comment: *Section 13. What is the relationship between 1(a) and (b)? Is this intended to allow either method (background or risk)? Section 13(2) says that if more than one action level can be established through Section 13(1), then the most restrictive applies, but not more restrictive than background. Read literally, this means that once background levels are established, background will always be the action level, because a less restrictive level established through a risk assessment can't be selected, based upon 13(2). The intention was probably to allow a less restrictive action level to be determined by risk assessment, and if more than one level is suggested by the risk analysis, the level chosen must be the most restrictive of the 13(1)(b) levels, correct? Section 13(1)(b) only has utility if this interpretation is correct.*

We respectfully offer the observation that the current regulation suffers from this same ambiguity, as does 445A.22735 (action level for groundwater).

Response: The current regulation contains the same ambiguity and has not led to any difficulty in its implementation. However, it appears that the additional language and other changes made in this section may have exacerbated the ambiguity. We will examine options for the alteration of the section to eliminate the ambiguity or to control it through other means. The simplest fix for this ambiguity is to clarify that the most restrictive action level established using the criteria set forth in ***subsection 1(b)*** must be used.

We would argue that due to the current construction and language in 445A.22735 (action level for groundwater) the same ambiguity does not exist or is constrained to such a point as to be effectively non-existent.

Comment: *Section 14(2). Again, it would be helpful to clarify whether (a)(b)(c) must all be satisfied, or are they alternatives. The regulation says all subsections of (a) must be satisfied. Note that since these provisions are intended to be available to allow an owner or operator to avoid initiating a corrective action, it may not be appropriate or possible to have three years of monitoring data to submit with the request.*

Response: Subsections (a), (b), and (c) of Section 14(2) are governed by an "and" construction meaning that all elements in this series must be satisfied. Since there are many subsections and levels of language involved, the NDEP will examine options for the addition of clarifying language.

Comment: *Section 14(2)(c)(1). Could the economic or technological impracticability of treating groundwater result from the contamination at issue?*

Response: No, the Division will not allow that to be a consideration in its determination

Comment: *Section 14(2)(c)(2). How were these three conditions selected? There could possibly be other applicable legal restrictions on the use of the groundwater.*

Response: These three conditions were not meant to be exclusive and were included as the most prominent legal restrictions applicable for the use of groundwater. The Division will examine its options for adding clarifying language. In the absence of clarifying language, the Division would still allow additional legal restriction or institutional control to be presented and considered as part of an evaluation for exemptions from groundwater corrective action.

Comment: *Section 21(1). The requirement to submit a report "regardless of the amount of the release for which the report is submitted" is confusing. Presumably the report is still only required for the "reportable quantities" set forth in NAC 445A.347 and the referenced CFRs. Requiring reporting any and all spills/releases puts an extraordinary burden on industry, and even filling station operators if taken literally.*

Response: The requirement to report a release event "regardless of the amount of the release" is tied only to one specific category of operating releases involving underground storage tanks. The category of releases covered by Section 21(1) is specifically limited to a confirmed release from an underground storage tank for which reporting is required in accordance with 40 C.F.R. 280.61 and can most generally be thought of as a leak in the underground portions of a regulated underground storage tank. This type of leak event requires notification to the implementing agency at the time of confirmation, not at a point where the facility owner/operator can conclude how much substance is being released to the environment as a result of the underground leak. This obligation arises from the requirement of an underground storage tank owner/operator to work with UST compliance officers to resolve the underground leak and assess the extent of impacts that may have resulted.

This requirement does not cover all operating spills or releases at underground storage tank sites. A distinction is made in the new language of the regulations between a confirmed release from an underground storage tank (Section 21(1)) and a spill/overfill (Section 21(2)). The more rigorous reporting requirement are placed on confirmed releases from the UST because these events represent an on-going release in the underground portions of a storage tank which are only discoverable through indirect observation either by leak detection, tightness tests, or excavation around the UST. All other releases at a UST facility are still subject to reportable quantities as discussed in the response to comment below.

The proposed regulation does not present an extraordinary burden on industry because this notification requirement is explicitly present in federal regulations and has been a component of the regulatory program for underground storage tanks since the adoption of those federal regulations over a decade ago. The proposed regulation attempts to add clarity to the distinction between "confirmed releases" and spill/overfills. The proposed regulations also creates a structure whereby corrective action requirements for leaking USTs are not immediately invoked as a result of the required notification but are still tied to the 3 cubic yard trigger, similar to all other release events.

Comment: *Section 21(5). Spill and overfill are defined as "any release..." Again, please confirm that reporting of such releases is still limited by the "reportable quantities" set forth elsewhere in the regulations.*

Response: The "spill or overfill" definition is tied to the release event requiring reporting under Section 21(2). These events are subject to the reportable quantities of 25 gallons, 3 cubic yards of soil, or the discovery in groundwater. This reporting requirement is in compliance with federal regulations governing operation of underground storage tanks. "Spill or overfill" events

generally correspond to one-time incidents, occurring at the surface of a facility or from equipment not considered part of the underground storage tank. The definition is intended to assist a facility owner/operator to distinguish between a "confirmed release" and all other types of releases, which are covered under the definition of a "spill or overfill." Because of the complications involved in the operation of underground storage tanks, particularly the potential for underground releases, there may be difficulty in maintaining a clear distinction between what compromises a "confirmed release" and a "spill/overfill," particularly when soil contamination must be investigated to determine whether it is the result of a leak in the UST, a previous spill/overfill, or historic contamination tied to other removed tanks or past site operations; however, this distinction is necessary, and the proposed regulations adds needed clarity. UST compliance programs may choose to put out further clarifying guidelines and information to UST owners and operators that builds on the regulatory language.

If you have any questions regarding the responses, I would be happy to discuss any issue in further detail with you by e-mail (ssmale@ndep.nv.gov) or by phone (775-687-9384). We also welcome any participation you may wish to have at the State Environmental Commission hearing on June 17, 2009 in Reno, NV.

Sincerely,

Scott Smale
Bureau of Corrective Actions

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NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
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STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

June 8, 2009

Ms. Tamara Pellham
639 Isbell Road, Suite 390
Reno, NV 89509-4967

re: Response to comments on proposed regulation R189-08

Dear Ms. Pellham:

The Nevada Division of Environmental Protection, Bureau of Corrective Actions has received and reviewed comments provided by you in correspondence dated June 3, 2009. Responses to the provided comments have been drafted that indicate where changes to the proposed regulation are recommended based on a comment, that provide clarification where requested, and that provides the position of the Division if a comment has not been incorporated into the proposed regulation.

Comment 1. It was explained during the workshop that proposed regulations are intended to provide a regulatory vehicle allowing the Bureau of Corrective Actions ("BCA") to issue "guidelines" regarding technical methods, sampling procedures, waste management processes, site characterization strategy, etc. Proposed regulations potentially used for purposes of issuing reference "guidelines" include, at a minimum, those added or amended under: Section 3, Section 8, and Section 14. Pending "guidelines" are effectively an extension of the proposed regulations, which will, by virtue of publication and distribution by BCA, become *de facto* requirements. Deviation from published "guidelines," that functionally equate to policy, will require technical defense to both a regulated entity (potentially responsible party) as well as the BCA, whether the technical deviation is widely accepted or uniquely innovative.

An effort to defend, as opposed to an effort to propose, any number of technical approaches within the universe of options affording a solution to an environmental challenge or concern will be more rigorous and time consuming, and therefore, costly. This situation conceivably creates an economic deterrent to the pursuit of alternative or innovative technical approaches that are not specifically endorsed by BCA-published "guidelines". Without a better understanding of how these "guidelines" will be framed and a reasonable opportunity to provide comment and input, it cannot be assumed that the guidelines, as extensions of the proposed body of regulations, will not have an economic impact on the regulated community. It is, therefore, premature to conclude that proposed regulations will have, "No economic impacts to the public...," as stated in response to element number 5 on the *Form #1 – R189-08*. If the preconceived "guidelines" are critical to the execution of the proposed regulations, then the "guidelines" should be *included* in proposed regulations and the public should be given a reasonable opportunity to comment.

Response: In drafting the proposed regulations, care was taken to ensure that the fundamental elements and hallmarks of the Division's established cleanup program were not changed or eliminated. The fundamental elements and hallmarks of the Division's cleanup program include: a single set of easy-to-understand regulations that can accommodate all sites, from the response

after a simple release to a facility-wide cleanup of a site with a long operating history; the flexibility to expand and collapse the level of detail and effort necessary to make determinations about the protectiveness of cleanups based on a number of considerations; the ability of a facility owner or operator to drive cleanup and make determinations about the best approach; and the avoidance of regulating innovation out of existence through the use of exclusionary language. The approach that has developed over time and is reflected in both the current and proposed regulation is a framework that is driven by obligations on a facility owner and operator to undertake cleanup with defined decision points that allow for concurrence by the Division. The regulations avoid language that would give the Division authority to dictate any particular cleanup or method of assessment.

The Division realizes that while the cleanup program as it has been developed has a number of benefits for the regulated community, there are also a number of disadvantages. Most important is the lack of specificity in the regulatory language that would assist the regulated community determine what will satisfy the Division at those points which require regulatory concurrence. Having specific language and requirements written into regulation allows a facility owner to know what hurdles he must pass and how they need to be satisfied; however, this use of specific language can also serve to limit options that may result in a more cost-effective or timely solution.

The Division believes that the best approach is to maintain maximum flexibility in regulatory language, where the inclusion of specific language would have the greatest effect in limiting options available to the regulated community. The Division is comfortable that the flexibility in regulations will not result in cleanups that are not protective of human health and the environment, because the Division, and not the facility owner or operator, still retains the ultimate authority to make this determination. However, the Division feels it is appropriate to put out supporting information that would assist the regulated community efficiently achieve concurrence. This can best be done through the publishing of guidelines, guidance, or opinions that do not rise to the level of regulatory requirements and can be revised, refined, and drafted through an on-going, collaborative process with the regulated community. This may actually result in lower cost as opposed to increased cost, as the necessity of expended costs will be dictated more by site-specific conditions rather than guidelines.

The Division can provide supporting information without limiting a facility owner or operator's ability to pursue alternative methods or apply innovative processes. Supporting information, whatever it is called, is drafted to assist the regulated community in knowing what methods have been successful in achieving concurrence and can be employed with less effort required for justification. This does not mean that any method published in guidelines or guidance must be adhered to at a site. Therefore, guidelines do not become de facto requirements as the program is implemented in Nevada. If a facility owner or operator wishes to pursue an alternative approach, which is still allowable under regulations, the Division must consider it, but depending on the decision being made, the Division will need to evaluate it before it is employed, and this may require additional justification to be provided by a facility owner, just as for any new approach. Any investigation approach or procedures proposed by an owner/operator, regardless of whether it is specifically anticipated and described in Division guidelines, will need to justified as technical defensible in light of site-specific conditions.

Comment 2. New regulation proposed under Section 5 reasonably falls under the jurisdiction of the Bureau of Waste Management and is redundant to both state and federal regulation. Proper and appropriate waste management is already required by law, whether it is generated as a function of

a corrective action or any other process. Waste management per the nondescript "manner approved by the Division" is vague and ambiguous, and it is unclear what additional waste management requirements might be relevant beyond those already required by law. Furthermore, the proposed regulation suggests that current waste management laws or regulations are insufficient to address waste generated by corrective actions, yet the proposed regulation does not add particular clarification that might otherwise improve the regulation and proper handling of hazardous or regulated waste. Until this proposed regulation is further clarified, i.e. defining what "manner approved by the Division" actually means, the implications of the proposed regulation are equivocal and cannot be clearly interpreted for purposes of public comment.

Response: Material handling requirements in Section 5 are intended to support the consolidated cleanup authorities of the Division, which are primarily handled through the Bureau of Corrective Actions. The language was drafted to avoid redundancy and duplication of existing requirements while not superseding or eliminating requirements to obtain permits or comply with transport and disposal laws overseen by other programs within the Division. The language in Section 5 has been taken from existing cleanup regulations in NAC 459.9974 where it provided necessary clarification that management considerations must still be made for soil removed from the ground even if that soil has concentrations below action levels. As a critical clarification, this language is considered appropriate for consolidation in the proposed regulation to apply to all cleanup cases and not just leaking underground storage tanks. The language has been generalized to apply to hazardous substances, hazardous wastes, and regulated substances, whereas the original language applied only to petroleum contamination.

The proposed regulation states that materials removed as a result of corrective action or an assessment under the oversight of the Division must be managed in a manner approved by the Division. It has not been drafted as a waste disposal requirement and does not duplicate the extensive federal and state laws governing disposal. Remediation of a release, whether it be through federal RCRA Corrective Actions, Clean Water Act authorities, or any equivalent State response program, involves a number of decisions about the handling of contaminated material, and many of these decisions occur prior to waste designation and waste disposal. All federal and state cleanup programs create some flexibility in waste laws, such as the Area of Contamination policy and "contained-in" policies under RCRA, which allow materials to be removed, managed, and handled on-site without a waste designation that would require disposal in strict accordance with disposal regulations. This allows cleanup authorities to consider on-site management and treatment options for materials undergoing remediation. Section 5 gives authority to the Division to make determinations about the proper management of materials that have not received a waste designation or are being treated or handled through on-site remediation.

As a component of remediation, off-site waste disposal must still be evaluated as a remedial alternative, and it is appropriate that the Division requires a facility owner or operator to document that off-site disposal will be employed and that adequate information has been collected to support the disposal option. Section 5 grants the authority to the Division to require that these determinations are made in a corrective action plan or assessment work plan that is reviewed by the Division. This does not duplicate those authorities that require proper waste transport or disposal once it has been determined that off-site disposal is a remedial option that will be employed at a site. It also does not absolve a facility owner or operator from complying with those requirements and obtaining all necessary permits.

Section 5 has been added into the cleanup regulations (and was originally adopted into the Underground Storage Tank regulations at NAC 459.9974) to clarify that decisions about the handling of contaminated media are undertaken as a part of remediation authority. Because there are many other programs and authorities within the Division that could potentially have

oversight of contaminated media, it is important to maintain a unifying corrective action authority to expedite site cleanups and eliminate multiple regulatory oversight. When site cleanup results in waste disposal or the use of a treatment process that is regulated by another authority, a facility owner or operator must comply with those requirements, but the authority of the Division to ensure that the cleanup is protective and that the cleanup has not resulted in the transfer of issues to other sites through improper management is central.

The language of Section 5 is particularly important to ensure that the Division's authority to ensure that a cleanup is protective is not limited through the improper application of action levels. The language has been drafted such that any material contaminated with a hazardous substance, hazardous waste, or regulated substance that is removed must still be subject to management approval, not just those materials that are above an action level. An action level is a site-specific determinant that a contaminant presents a threat at a site given many factors that include, but is not limited to, its quantity, concentration, location, mobility, and proximity to receptors. An action level does not determine whether soil or groundwater is considered a waste, and soil or groundwater that is contaminated below action levels at a site does not mean that the material can be handled as though it were not subject to remediation.

Comment 3. Proposed language for Nevada Administrative Code ("NAC") 445A.22695(2) discusses, "immediate action after a release of a hazardous substance, hazardous waste or a regulated substance occurs or upon a discovery of *any contaminated media specified by the Director...*" Please clarify what is meant by *any contaminated media specified by the Director*? Please provide examples of what media might be included or intended to be captured in this particular language.

Response: Subsection 2 of Section 9 of the proposed regulation details the authority of the Division to require an owner or operator to take immediate action after a release of a hazardous substance to abate or mitigate imminent threats to waters of the State and public health. This language has been retained from the current regulations; however, the retained language includes a clarification of the Division's authority. The new language is intended to make clear that the Division has the authority to require immediate action to abate imminent and substantial threats even if the order does not come immediately after a release. The added language covers situations where a release may have occurred sometime in the past and was either not detected, apparent, or reported, but the discovery of the contamination at a later time still warrants immediate action. The "media specified by the Director" should be taken to include all those situations when notification of contamination discovered in media must be made to the Division under NAC 445A.345 to 445A.348, which includes surface water, groundwater, soil, and other surfaces of land.

Comment 4. Proposed modifications to NAC 445A.2272 are relatively substantial, yet the term "*appropriate level of concentration*" was not altered. An argument can easily be made that there is no "appropriate" level of concentration of a hazardous substance, hazardous waste, or regulated substance in the soil that is protective of waters of the State. While the regulation is open for modification, it is suggested to change the word "appropriate" to "tolerable", "agreeable", "manageable", or "ineffectual":, etc., or simply remove the adjective so that the regulation does not suggest that subsurface contamination is "appropriate" in any particular circumstance.

NAC 445A.2272 also inserts new language indicating that action levels will be derived based on "(2) A study approved by the Division," yet the methods available, agreeable, or approved by the Division to derive fundamental remedial action levels has not been discussed or publicized. Without more information clarifying what method of '*study*' will be acceptable, there is an undefined and unrestricted potential for this proposed regulation to have significant economic impact on existing and future remedial projects. It is easily conceivable that the basic derivation of remedial

action levels could become an academic study for a wide range of remedial scenarios. This regulation is considered too vague and has the potential to be applied inconsistently and potentially unfairly.

Response: The language referenced in the first portion of the comment has been retained from the current regulation, which states that action levels for soil must be set at an appropriate level based on protection of waters of the State, human health, and the environment. The existing phrasing and structure means nothing more than action levels must be set appropriately. The Division does not feel that the language requires clarification.

The new language at Section 13(1)(a)(2), which adds the phrase "A study approved by the Division," is only tied to the establishment of a background concentration or volume of a hazardous substance, hazardous waste, or regulated substance. The existing language in regulation required clarification because it stated that a background concentration could only be set forth in a permit issued by the Division; however, a relevant permit that sets forth background concentrations for soil would be present in very few, if any, situations. The clarifying language allows a owner or operator to submit a study for approval that establishes a background concentration for use as an action level in the absence of a permit. While there is existing guidance provided by EPA and DoD, the Division welcomes input on appropriate, scalable, and technically defensible methodologies for conducting background concentration studies from the regulated community.

Comment 5. Proposed modifications to NAC 445A.22725 strike the 10,000 milligram per liter ("mg/L") threshold concentration for total dissolved solids ("TDS"), above which groundwater is not reasonably expected to be a source of drinking water and corrective action to reach a drinking water standard is not required, yet the revised regulation does not include language clarifying what criteria will be used to assess groundwater quality as a source or potential source of drinking water. What, if any, criteria will be used to determine when corrective action for releases to groundwater is not required? This comment is a request for the regulation to be further amended to reference the particular criteria used to determine when groundwater is or is not reasonably expected to be a source of drinking water.

Response: The 10,000 milligrams per liter threshold was struck from the regulations as being redundant, since it constituted only one specific consideration for determining whether it was economically or technologically impractical to render the water fit for human consumption but did not subsequently limit any other potential considerations. The proposed regulation retains the general language currently contained in regulation as being more flexible while still serving to support arguments that are based on the effect that total dissolved solids may have for use considerations. As discussed previously, the Division does not want to unnecessarily limit considerations through the use of regulatory language that could exclude any reasonable supporting information on a site-by-site basis. At this point, the Division prefers to let the regulated community present any and all arguments that they feel have scientific merit to satisfy this individual element of the groundwater corrective action exemption. As the process for issuing groundwater exemptions outlined in the proposed regulation develops and matures, the Division will be in a better position to put out supporting information on those criteria that are determined to be consistently compelling and demonstrable.

Comment 6. The requirement to provide data for 3 years of quarterly groundwater monitoring to substantiate site closure (NAC 445A.22725), versus the minimum of 1 year that is currently required in regulation will (NAC 445A.22745), by default, has an economic impact on the regulated community.

Response: Language in the existing regulation at NAC 445A.22745 does not create a requirement for a minimum of 1 year of groundwater monitoring prior to closure of a site, so the inclusion in the proposed regulation of 3 years of monitoring to support closure is not equivalent and does not represent an increased burden or economic impact to the regulated community. The 1-year monitoring period in existing regulations is related to the termination of a treatment system and is not equivalent to the Division's authority to require additional corrective action or grant site closure.

The 1-year monitoring requirement in NAC 445A.22745(1) is in place to ensure that a year of groundwater monitoring is conducted after termination of a remediation system to assess any potential for rebound in the concentrations of contaminants. This language was taken directly from NAC 459.9979, which places the required monitoring period **after** termination of remediation, but due to language changes during the later adoption of the same cleanup regulations in NAC 445A, the monitoring period was mistakenly placed **concurrent** with remediation by Legislative Counsel Bureau drafters. The Division approached the adoption of cleanup language in NAC 445A to exactly mimic the program that had existed in NAC 459. The intention to create the same authorities and same structure in NAC 445A as was in NAC 459 was presented to the State Environmental Commission and was a condition of adoption; therefore, these two sets of regulations have always been interpreted equivalently. The 1-year monitoring period in NAC 445A.22745(1) is used by the Division to require a year of monitoring after termination of remediation to assess rebound and post-remedial conditions, as the language in NAC 459.9979 clearly intended in the original.

The proposed regulation ensures that the proper language from NAC 459.9979 is used as the basis for post-remediation monitoring requirements and eliminates the incorrect language the exists in NAC 445A(1). The difference in post-remediation monitoring language in the original was one of the driving forces for the proposal of revisions to these regulations

The next comment and response-to-comment addresses the difference between the Division's decision to allow termination of a remedial system and to grant site closure. The two concepts are not equivalent, and the monitoring periods attached to them remain distinct requirements though they may still overlap in certain situations.

Comment 7. The post-remedial groundwater monitoring requirements specified in proposed language for NAC 445A.22745(2) is confusing given the proposed language and groundwater monitoring requirements specified for projects "after the termination of remediation pursuant to NAC 445A.22745" in NAC 445A.22725(2)(a)(3). Please clarify and reconcile the intent of this post-remediation groundwater monitoring requirements. Clarification in the body of proposed regulations is recommended.

Response: Existing groundwater cleanup regulations contain sections for the Division's authority to require corrective action (NAC 44A.22725 and NAC 459.9977) and separate sections for determining when remediation may be terminated (NAC 445A.22745 and NAC 459.9978). The proposed regulation retains this structure and uses much of the existing language. However, the proposed regulation also adds some clarifying language that is intended to clarify how these two decisions are related.

The term "corrective actions" is a broader term that includes all components of a remedy that are taken to achieve protectiveness. This includes removal and treatment of contaminants (which taken together constitute the general term "remediation") but also includes engineering controls, institutional controls, segregation, encapsulation, receptor control, and any number of additional actions that don't involve the treatment of groundwater to remove or destroy contaminants. A case is properly considered "closed" once it is determined that all corrective

actions have been taken which will result in a permanent remedy that is protective of human health and the environment. Although site closure commonly corresponds with the completion of groundwater remediation (particularly if groundwater remediation is the exclusive component of corrective action being taken at the site), there are many instances where termination of groundwater remediation does not mean that the Division has determined that no further corrective actions are necessary.

The existing regulations allow for a treatment system to be terminated once it has reached the limits of its effectiveness in removing contaminants from the groundwater. The limit of effectiveness is demonstrated through matching the asymptotic portions of a concentration curve. However, the concentrations reached at this point may still be above action levels and may still present a threat to human health and the environment—at which point, the Division has the authority to determine whether additional corrective actions (not involving re-initiating the treatment system) are necessary. It should also be noted that the proposed regulation includes an additional condition for termination of a remediation system at concentrations that would be above action levels (Section 15(1)(b)).

The proposed regulation adds language that makes it more explicit that the termination of remediation above action levels must be coupled with a consideration of whether residual concentrations are protective of human health and the environment or whether additional corrective actions must be considered. Under the proposed regulation, a site can only be closed if treatment of groundwater meets action levels or an exemption from groundwater corrective action (or further corrective action after treatment) is granted based on the protectiveness to human health and the environment.

By way of example, consider a facility with a large solvent plume that is migrating towards a domestic supply well. A pump-and-treat system is installed in the body of the plume and operated for a number of years. During its operation, the pump-and-treat system manages to remove a significant mass of contaminants from the groundwater but is eventually shut off due to diminishing returns as demonstrated by reaching the zero slope portion of the concentration vs. time curve. This determination to terminate the pump-and-treat system is not equivalent to closing the site, because residual contamination may still present a threat. Under the current regulations, it wouldn't be appropriate to equate the termination of a remediation system as an automatic granting of site closure, and the proposed regulations makes that even more clear. In our example, if the pump-and-treat system is shut-off and it is shown that the remaining contamination will still reach the domestic supply well at concentrations above drinking water standards, then the facility owner still has an obligation to undertake additional corrective action, such as the installation of pre-treatment on the supply well or some other action to protect receptors.

Decisions about site closure and termination of remediation are distinct, and the monitoring periods attached to the one or the other are not equivalent, though they may overlap on a case-by-case basis. Section 14(2)(a)(3) states that the Division needs 3 years of monitoring data (or another period specified by the Division, it should be noted) as a basis for making a determination that a site can be closed with contamination above action levels. This is to ensure that the Division is making decisions with sufficient information to control against any reasonable changes in future conditions. Section 15(2) states that the Division needs 1 year of monitoring after termination of remediation to understand post-remedial conditions and assess rebound. If termination of remediation occurs at concentrations above action levels, the facility owner will still need to apply for an exemption from further corrective action; in this scenario, the groundwater data collected during design, operation, and post-remedial monitoring of the

treatment system may be used on a case-by-case basis to satisfy the monitoring period required for an exemption from further corrective action above action levels. The different monitoring periods will not need to be satisfied consecutively in all cases.

Comment 8. Proposed modifications to NAC 445A.22745(1)(b) are unclear. At a minimum, it would be helpful to reverse the order of NAC 445A.22745(1)(b) and 445A.22745(1)(c) since 445A.22745(1)(b) references the content of 445A.22745(1)(c). The proposed regulation could be further clarified if separated into more than one sentence or bulleted. *(example provided)*

Response: The Division agrees with the comment. The Division's order of preference for termination of a remediation system is: 1) concentrations consistently meet action levels, 2) data match the asymptotic portions of a concentration curve, and 3) another condition set forth in an approved plan of corrective action. Since the termination condition currently listed in Section 15(1)(b) is only available if it is determined that the asymptotic test in Section 15(1)(c) is not appropriate, a natural order is created that doesn't need to be prefaced. The Division recommends eliminating the phase "***in the following order of preference.***" from Section 15(1).

Your comment letter concludes with the following general comment:

> Generally, the proposed regulations afford the Division more discretion over the establishment of action levels and the conditions warranting corrective action and site closure without including clear criteria regarding how these parameters will be derived, executed, or applied. Consequently, there is concern that proposed regulations may be inconsistently interpreted, used, or applied by different regulators within the same Bureau or by regulators within Bureaus outside of Corrective Actions. While it is acknowledged that over-regulation is not helpful or warranted, the regulated community is best served when regulations are prescriptive and the method of application is clearly understood. In several instances, proposed regulations fail to achieve these characteristics.

Hopefully the concerns in the comment letter have been addressed through the responses to specific comments. We continue to make an effort to chart an appropriate course on corrective action between flexibility in allowable procedures and protectiveness of corrective actions. The proposed regulations do not alter fundamental authorities inherent in current corrective action regulations but are intended to reflect a more efficient application of those authorities. We welcome further engagement with the regulated community, the consulting industry, and the general public through the framework created by the cleanup regulations, and we do not anticipate that that engagement would end with the hearing at the State Environmental Commission. The proposed regulation is scheduled for a hearing in front of the SEC on June 17th and 9:30am at the Nevada Department of Wildlife's conference room A, 1100 Valley Road, Reno, NV.

Sincerely,

Scott Smale
Bureau of Corrective Actions

cc: Leo Drozdoff, Administrator, NDEP
Jim Najima, Chief, BCA
John Walker, SEC Secretary