

March 16, 2012

MEMORANDUM

To: Shannon Harbour, NDEP

From: Allan J. DeLorme, PE
John M. Pekala, PG
Christopher J. Ritchie

Subject: Comments on NDEP Proposed Regional Groundwater Monitoring Program

On behalf of the Nevada Environmental Response Trust (the Trust), this memorandum provides comments to the Nevada Division of Environmental Protection (NDEP) on the information presented during the February 16, 2012 BMI Complex All Companies Meeting held at the Southern Nevada Water Authority (SNWA) office in Las Vegas, Nevada and related documentation provided by Shannon Harbour of NDEP by email on February 22, 2012. Our comments are summarized below.

Data Selection and Analyte Evaluation

- In the McGinley & Associates, Inc. (MGA) Table 6 *Summary of Current Monitoring Program: Water Levels* only 32 wells are listed as being monitored for water levels by the Trust. Please note that the Trust monitors water levels in approximately 270 wells routinely—on either a quarterly or annual basis. For extraction wells, the frequency of monitoring is monthly. Additionally, the Trust monitors numerous wells screened within the Middle and Deep water bearing zones which appear to have been omitted from Table 6. The Trust brings this to the attention of NDEP and requests clarification on how data were selected and filtered for incorporation into Table 6. It should be noted that the Trust did not perform a complete and thorough review of the information contained within all of the data comprising MGA's evaluation; however, our general review suggests that the other Tables appear to adequately summarize the Trust's current groundwater monitoring program.

Data Gaps and Monitoring Program Recommendations

- In the presentation slides, NDEP notes that in addition to pH and electrical conductivity (EC), dissolved oxygen (DO) and oxidation reduction potential (ORP) should be collected and recorded for all wells that are monitored. Although the Trust agrees that DO and ORP are valuable data, particularly for understanding of groundwater redox conditions and evaluation of the fate and transport of organic compounds and metal species, DO and ORP are field-measured parameters that are significantly influenced by the method of purging (e.g., traditional pumping, bailing, or low-flow sampling techniques) as well as the method of measurement. ENVIRON notes that consistent and reliable results for DO and ORP are difficult to achieve without performing low-flow purging using bladder pumps with measurements collected from a flow-through cell with

zero headspace. Therefore, requiring the measurement of DO and ORP at every monitoring well may be difficult to achieve without a significant increase in time and resources given that significant changes to existing sampling procedures and equipment would likely be necessary. The Trust recommends that a subset of wells be identified where DO and ORP data are necessary to satisfy specific needs of the regional groundwater plan and where the additional procedures could be readily implemented.

- In the presentation slides and MGA's memorandum provided following the meeting, numerous data gaps within each of the three water bearing zones were identified by MGA and NDEP, particularly with regard to metals. The Trust generally agrees with the data gaps identified based on the information presented during and following the All Companies meeting and (to the extent such is currently available) requests that additional information be provided as to how NDEP would propose addressing these data gaps at individual sites. For example, would individual sampling plans be required at each site with identified data gaps and these plans be integrated into existing (or future) site investigation programs?

Transect Monitoring

- The Trust generally agrees with the proposed regional transect monitoring approach and believes the proposed approach will provide for consistency among the various sites and companies' monitoring programs. In addition, the Trust recognizes the need for additional sampling to understand regional background of certain COPCs and the proposed transect monitoring should provide information critical to future decision-making regarding remedial action objectives and associated remedy selection criteria.
- MGA has identified specific analytes as regionally significant constituents (RSCs) which include certain VOCs, metals, organochlorine pesticides, and general chemistry parameters (perchlorate, nitrate, and TDS). The methodology used by MGA in identifying RSCs appears to be reasonable and based on well-established technical principles. The Trust notes, however, that the monitoring recommendations indicated that "for each chemical class it is expected that the entire class of chemicals be monitored". The Trust requests clarification from NDEP regarding the meaning of the term "chemical class" within the context of MGA's recommendation, particularly with respect to the metals and general chemistry parameters identified.
- The Trust believes that the proposed regional approach for groundwater monitoring will integrate most efficiently with the RI/FS process by separating the NERT site into discrete Operable Units addressing: 1) on-site soil and groundwater contamination (On-Site OU), and 2) off-site groundwater contamination (Off-Site OU). This approach will allow for a more manageable RI/FS process whereby many of the currently anticipated future informational needs and data gaps for the regional groundwater plume are addressed (at least in part) by the proposed regional monitoring program, and for Data Quality Objectives (DQOs) to be addressed regionally, rather than on a site-specific basis. Moreover, because the regional groundwater is affected by various other source areas, designation of a separate Off-Site OU would more easily allow for the

consideration of such issues in the development of a Conceptual Site Model and Remedial Action Objectives. At the same time, a more focused and site-specific Conceptual Site Model can be developed for the On-Site OU which would appropriately address the NERT site proper as a source area for the regional groundwater contamination.

We appreciate the opportunity to comment on the information presented to the Companies and look forward to further discussion pertaining to the proposed regional groundwater monitoring program. Please contact us if you have any questions about the information provided herein.