

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 11, 2009

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Notice of Decision

Water Pollution Control Permit
Number NEV0089068

Barrick Goldstrike Mines, Inc.

Boulder Valley Infiltration Project

The Nevada Division of Environmental Protection (Division) has decided to renew Water Pollution Control Permit NEV0089068 to Barrick Goldstrike Mines, Inc. for the Boulder Valley Infiltration Project. This permit authorizes the construction, operation, and closure of approved infiltration facilities in Eureka County. The Division has been provided with sufficient information, in accordance with Nevada Administrative Code (NAC) 445A.350 through NAC 445A.447, to assure the Division that the groundwater quality will not be degraded by this operation, and that public safety and health will be protected.

The permit will become effective May 26, 2009. The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to Nevada Revised Statute (NRS) 445A.605 and NAC 445A.407. All requests for appeals must be filed by 5:00 PM, May 21, 2009, on Form 3, with the State Environmental Commission, 901 South Stewart Street, Suite 4001, Carson City, Nevada 89701-5249. For more information, contact Paul Eckert at (775) 687-9401 or visit the Division's Bureau of Mining Regulation website at www.ndep.nv.gov/bmrr/bmrr01.htm.

Two comments were received during the public comment period. The first was received by e-mail on April 7, 2009 from Sue Gilbert of the Nevada Division of Water Resources. The second was received by e-mail on April 24, 2009 from Tom Myers on behalf of Great Basin Resource Watch. Division responses are attached to this notice.

NDEP Response to Nevada Division of Water Resources (NDWR) Comment Letter dated April 7, 2009.

Comment: "All waters of the State belong to the public and may be appropriated for beneficial use pursuant to the provisions under Chapters 533 and 534 of the Nevada Revised Statutes (NRS), and not otherwise. Any water developments constructed and utilized for a beneficial use whether surface or underground must be done so in compliance with the referenced chapters of the NRS

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for the subject parcels of land wholly situated within the State of Nevada. Currently the applicant has applications and permits of file with the Division of Water Resources. The project proponent will be required to have adequate water rights for all proposed uses pursuant to the above referenced statutes. The project proponent must verify that the water management plan is still consistent with both Order 1038 and the actual proposed usage as permitted by NDWR. If not, contact the Division of Water Resources for additional permitting assistance.”

Response: Comment noted.

NDEP Response to Great Basin Resource Watch (GBRW) Comment Letter dated April 24, 2009.

Comment 1: “As outlined in the fact sheet, at least four permits cover the water management system in Boulder Valley. These are related to each other and it is possible that activities in one permit affect the other. For example, this permit covers the TS Ranch, but does not sample the springs caused by infiltration from the reservoir nor does it adequately sample groundwater near the reservoir (see the discussion below). It would make sense for every party concerned to combine these permits, with the probable exception of the NPDES permit.”

Response: While the consolidation of the two permits issued by BMRR (Infiltration NEV0089068 and Recirculation NEV0095114) may be pursued at some future time, the Division is presently not considering this course of action. The primary function of the Infiltration permit is the reintroduction of dewatering water to waters of the state via rapid infiltration basins, while the Recirculation permit is concerned with the treatment of the water for As and the seasonal pumpback to the TS Ranch Reservoir. The UIC and NPDES permits are not administered by BMRR and may not, therefore, be combined with NEV0089068 or NEV0095114.

Comment 2: “The infiltration basins were constructed just one-half mile from Boulder Creek. The basins and other associated infiltration facilities (TS Ranch Reservoir, injection wells, and irrigation pivots) have caused groundwater levels in Boulder Valley to rise from 10 to 500 feet across large areas (Plume, 2005). The mounds may be causing seepage to Boulder Creek. If there is not a permit that requires inspection of the creek for seepage, NDEP should amend this permit to require such an analysis. This permit should require Barrick to report water quality at stations along this creek. Note that the Boulder Valley Monitoring Plan requires flow measurement and chemistry, so all that is needed is for this data to be reported to NDEP along with adding another station just downstream from the infiltration basins. The permit should also require an annual survey of Boulder Creek during a dry period to determine whether there are seeps or springs, which could be linked to the infiltration systems, discharging into the creek.”

Response: The reviewer has correctly assessed groundwater mounding around the TS Reservoir due to the groundwater infiltration system. However, the review erroneously states the upper end of water level rise as 500 ft (actual value is 50 ft).

Boulder Creek is an ephemeral stream. In a normal precipitation year, it starts to flow near the end of March due to snowmelt in the mountains and diminishes around the end of May or early June. Boulder Creek is a losing stream below Boulder Narrows (above TS Reservoir). The river bed is far above the current groundwater table, thus there is no groundwater seepage into the stream. Barrick monitors three stations on Boulder Creek (BC-A, BC-B and BC-C) within the groundwater mounding zone, and no seeps or springs have been observed. Because station BC-B is only 2,000 ft cross-gradient from the TS reservoir, there is no need for another station. The

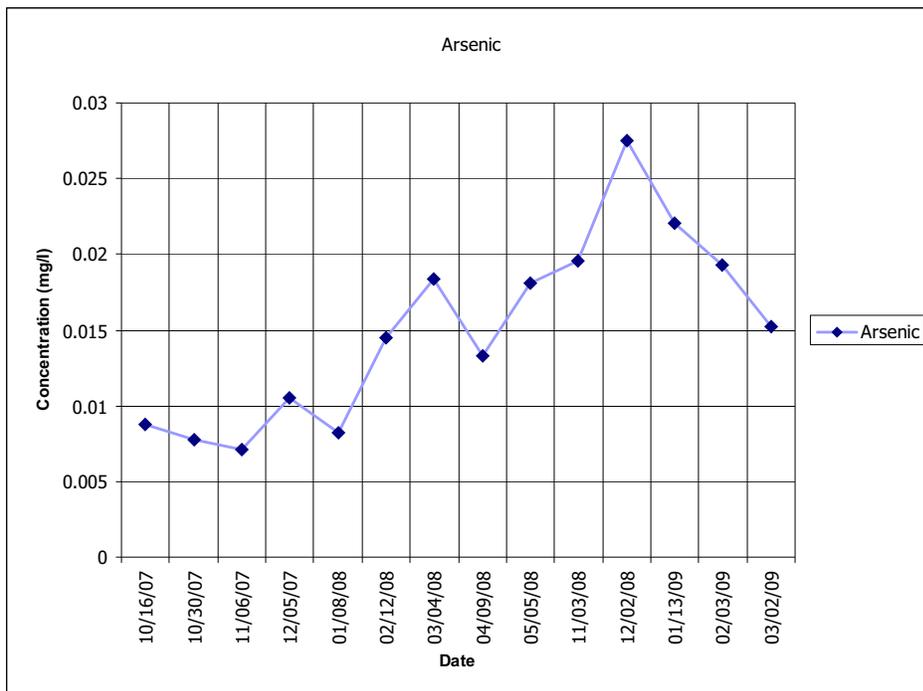
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Boulder Valley Monitoring Plan (BVMP) does require flow measurement and chemistry of surface water streams. BVMP is currently submitted on a semi-annual basis to the regulators, including the Division, and is available to the public upon request.

Comment 3: “The 2008 Annual Report shows a significant increase in arsenic concentration in the feed water (GFPD-02A). However, the annual report does not include graphs for treated water, so it is not known if this represents the quality of water being discharged to the groundwater; it is also not known whether the treatment plants have been operated. The permit requires the annual report to include only information from items I.D.1 through I.D.5, not I.D.6 which would be treated water. Based on the footnote for I.D.6, the “ferric sulfate treatment water treatment plant is operated as needed for arsenic reduction in the non-irrigation season” (Draft permit, page 3). How does Barrick determine whether treatment is necessary? How does NDEP verify whether treatment is being used when necessary? It appears that Barrick did not treat the water referred to in the previous paragraph because there is no evidence that the monitoring wells were sampled monthly as required when the treatment plant is operating, according to the referenced footnote. Is this correct?”

Response: Since 2007, when the inflow of treated Leeville water was reduced, excess mine water has been treated at the Ferric Sulfate Treatment Plant prior to infiltration into the groundwater system through the TS Ranch Reservoir. The feed water is sampled as “GFPD-02A”, and discharge water is sampled as “CCE”. Figure 1 indicates that the arsenic concentration of “CCE” is below the Profile I reference value (50 ppb). The data have been included in the permit reports.

Figure 1. Arsenic Concentration of Excess Mine Water after Treatment (CCE)



Sand Dune canal flow, in the non-irrigation season, is introduced into the volcanic rock aquifer through the infiltration ponds. Canal water is sampled daily and analyzed for arsenic at the mine lab. If As exceeds the Profile I reference value (50 ppb), the Pumpback One Treatment Plant commences operation.

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In summary, waters infiltrated into the groundwater system are in compliance with the Profile I reference values. The groundwater monitoring wells are sampled at the frequency specified in the permit. No exceedance of the Profile I reference value for As has been observed in the monitoring wells.

Comment 4: “The annual report does not show that any of the monitoring wells have been affected by the arsenic being discharged to the alluvium, but the location of the monitoring wells is not opportune for monitoring water quality from discharge to the infiltration basins. Only NA-22 is nearby, and it does not appear to be downgradient from the basin (although at the scale of the map, it is difficult to determine). NA-10 and NA-18 are east of the TS Ranch Reservoir, at least 2.5 miles from the basin; these are not downgradient from the reservoir either (although the mounding may have locally changed the direction of the gradient). IMW-93-2 is about one mile southwest of the basin. The other monitoring wells are even further away.

The monitoring well locations could have been selected better. Two of them, IMV93-3 and NA-32, are close enough to the irrigation pivots to be sampling the effects of irrigation return flow rather than the infiltration basins. NDEP should reconsider whether a few more shallow monitoring wells and piezometers should be installed near the basins so that the sampling is of the discharge water and any leaching that could be occurring?”

Response: *The Division is satisfied that the groundwater monitoring network was properly designed to monitor groundwater quality near the infiltration facilities. For example, NA-22 is immediately adjacent to the infiltration ponds, which receive canal water. NA-10 is about 0.7 miles away (not > 2.5 miles as stated in the review) from the TS reservoir, which receives excess mine water. The volcanic rock aquifer in the TS Reservoir area is quite permeable (about 100 ft/day). Figure 2 illustrates water levels recorded at several volcanic aquifer piezometers near the TS Reservoir. Among these piezometers, NA-10 and NA-18 are included in the permit, and NA-14 (not included in the permit) is at the downstream edge of the TS Reservoir. These wells have virtually identical responses to the infiltration.*

Regarding the other monitoring wells mentioned in the review, IMW93-2 and IMW93-3 were screened in volcanic rock downstream of the injection wells (BVI-1, 2, 3 and 4). NA-32, screened in alluvium, was designed to monitor the alluvial aquifer response to groundwater mounding in the volcanic aquifer.

The Division believes that the existing monitoring program, implemented by Barrick, is comprehensive and appropriate. No modification to the program is needed.

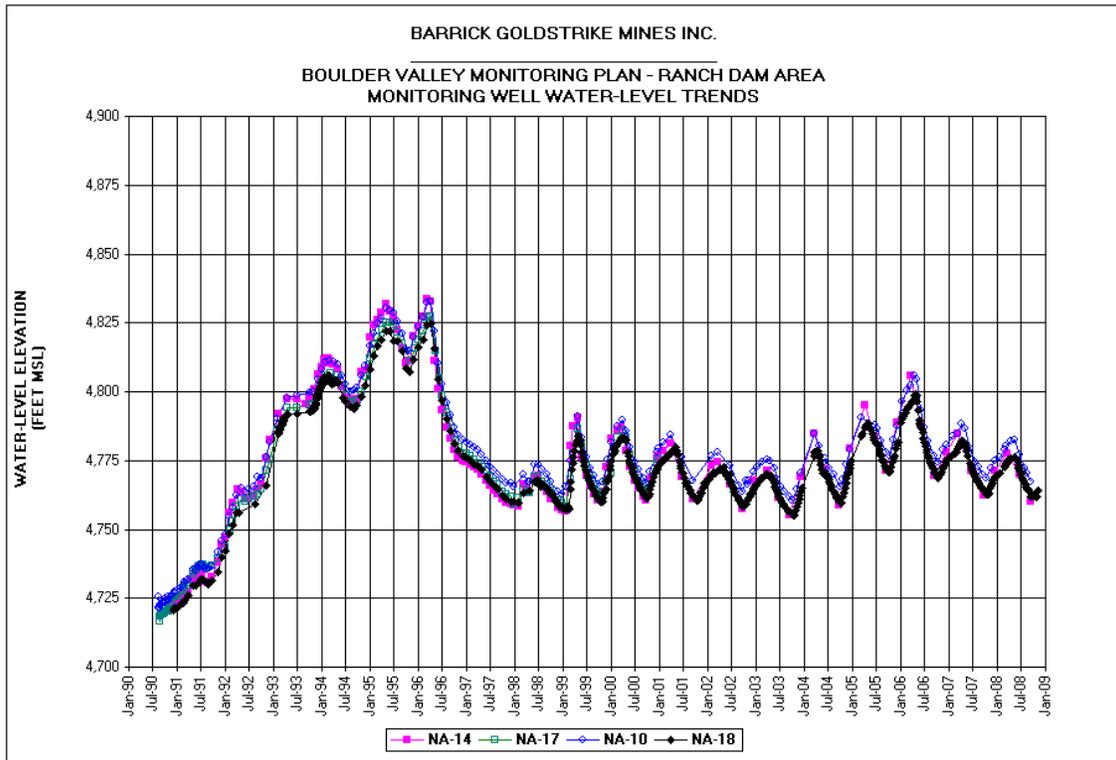


Figure 2. Hydrographs of Piezometers Near the TS Reservoir.

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