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WATER QUALITY CONTROL DIVISION



David R. Brown

Manager, Regulatory Affairs-HSSE

**BP America Production Company**

U. S. Onshore Business Unit,-HSSE  
1660 Lincoln Street, Suite 2900  
Denver, Colorado 80264

Telephone: 303-830-3241

Facsimile: 303-830-3292

Cellular: 303-887-3695

June 1, 2009

Colorado Department of Public Health and Environment  
Water Quality Control Division  
Permits Section, WQCD-PCP-B2  
4300 Cherry Creek Drive South  
Denver, CO 80246

RE: Comments On CDPS General Permit For Discharges Associated With Produced Water Treatment Facilities; Colorado Discharge Permit System

To Whom It May Concern:

BP is a leading producer of natural gas in North America and a global producer and manufacturer of oil, natural gas, petroleum products and petrochemicals. BP is internationally recognized as a leader in environmentally responsible operations and corporate transparency. We operate over 1,300 wells in southwest Colorado, most of which produce coal-bed methane and associated produced water.

While BP does not currently have a Colorado Discharge Permit System (CDPS) surface discharge permit with the Colorado Department of Public Health-Water Quality Division, we believe it is important to submit comments on the proposed general permit. BP has been evaluating the feasibility of discharging coal bed methane produced water pursuant to a CDPS permit and in the past conducted a pilot project to evaluate water treatment technologies and the associated economics.

Our comments and concerns with the general permit are listed below.

- BP is concerned the general permit will set the minimum standards that must be met for future individual CDPS permit applications not seeking to use the general permit (GP). The language in the first paragraph of the general permit signature page states: ".....facilities engaged in the treatment of produced water generated oil and gas producing formations are authorized to discharge from authorized locations throughout the State of Colorado to specified water of the state. Such discharges shall be in accordance with the conditions of this general permit." Part 1, page 3, paragraph one, states: "All limitations set in this permit are based upon the most stringent water quality standards, the Regulations for Effluent Limitations, and/or the federal effluent limitation guidelines."

BP has engaged in discussions with the Water Quality Division regarding case specific discharge parameters consistent with a Preliminary Effluent Limitation (PEL) evaluation. The nature of our water and the treatment technologies should not automatically warrant the conditions being imposed by the general permit (GP) for an individual permit (IP). We urge the Water Quality Division to clearly state in the general permit that individual permits submitted to discharge produced water from oil and gas formations will be assessed separately on a case by case basis by the Water Quality Division and be subject to appropriate effluent limitations and monitoring requirements based upon the information submitted and receiving stream characteristics.

- BP produced water in the San Juan Basin contains high TDS and high sodium adsorption ratio (SAR) as well as potential constituents listed in Table 1 that would require treatment before discharge to surface waters. RO treatment, along with pre-treatment technologies, has been envisioned to meet discharge requirements for either a GP or an IP. However, water treatment can require the use of chemicals for enhancements in the process such as adding a calcium/magnesium feed stream to lower SAR. According to the GP, added chemicals must be listed and approved in the application for the GP. While the need to list added chemicals is understood, changes in oil and gas produced water may later require chemicals that are not anticipated at the time of the application. In these cases the GP should provide a process to expedite review of unanticipated chemicals to ensure flexibility and not compromise environmental protection.
- San Juan Basin formation waters are not included in the reference waters used for background data in the GP (see Table 2).
- The SAR limit of 2 as explained on page 7 of the GP Fact Sheet is based on the lower range of typical receiving waters which typically range from 2 to 4. It is unlikely the selected SAR limit of 2 is negotiable unless it can be shown the SAR of the receiving water is greater than 2.
- The GP carries a provision for imposing a sodium limit if the Division finds the effluent causes the instream SAR to become too high; even if the discharge SAR limits are met.
- In the GP discharge limits for temperature, metals, organics, and semi-volatile organics are based on the most stringent standards contained in Regulation 31 - The Basic Standards and Methodologies for Surface Water. For hardness based metals, the most stringent hardness value tabulated in Regulation 31 (25 mg/L as calcium carbonate) was used. Given the strict standards proposed in the GP, care must be taken that the standards in the GP do not unnecessarily set the bar for future applications under an IP. This is an example of our concerns expressed in the first comment above.
- The degree of effluent stream blending (treated and untreated slip-stream) will need to address multiple factors including economics, adding sufficient calcium and/or magnesium to keep the effluent SAR within permit limits, keeping the effluent sodium low enough so as not to raise the stream SAR, allowing enough TDS to pass the WET test, and keeping the effluent TDS and conductivity low enough to meet their effluent limits.

- The GP includes many parameters, such as TDS, SAR, radioisotopes, benzene, toluene, ethylbenzene, xylene, (BTEX), metals, ammonia, etc. including a provision in the GP for adding additional numeric limits should the Division determine it is necessary due to a “Reasonable Potential” for their presence in the discharge. Use of the “Reasonable Potential” of constituents in the produced water stream at the front end of the general permitting process would likely streamline the general permitting process even more and significantly reduce monitoring and permit compliance cost. Finally, if the operator shows through monitoring there is not a “Reasonable Potential” for a constituent in the influent and effluent stream, then additional monitoring for the given constituent should not be required under the GP.
- Monitoring requirements in the GP carry no provisions for adjustments based on monitoring results, to substantiate less frequent schedules. This is an important consideration and mechanism for requesting reduced monitoring frequencies.
- Based on Table 3 the annual analytical cost for complying with the GP monitoring requirements is estimated to be approximately \$60,000 per year.

Thank you for consideration of these concerns and comments.

Regards,

A handwritten signature in black ink, appearing to read "David L. Kline", with a long horizontal flourish extending to the right.

Cc: Mr. Ed Steele-BP Houston  
Ms. Keri De Palma-BP Durango  
Mr. Don Mustard-BP Durango  
Mr. Andy Hawk-BP Durango