

Colorado Mining Association Comments on Stormwater Provisions in the Coal Mining General Permit (COG-850000) and the Metal Mining Operations and Mine-Waste Remediation Permit (COR-040000)

The Colorado Mining Association would like to provide the following comments on the Stormwater Discharges Associated with Metal Mining Operations and the Mine-Waste Remediation Permit (COR-040000) and the stormwater provisions in the Coal Mining General Permit (COG850000). CMA would also like to incorporate and reiterate comments submitted on August 18, 2011 and August 29, 2011, on the Stormwater General Permit for Non-Extractive Industrial Activity. Many of these comments can be applied directly to these stormwater permits.

Stormwater Provisions General:

CDPHE has discussed numerous additions that are being planned for the stormwater requirements in the general permit. Examples of such additions include required sampling, benchmarks, and increased inspection frequencies among others. However, the department has not articulated a justification for the additional requirements. During the pre-public notice meeting, there were no examples given of wide scale noncompliance or results of pollution from stormwater discharges at mine sites. These proposed requirements add yet another burden on to the mining industry and should have to be justified. While the department argues that this additional burden is not substantial, it is the cumulative effect of regulatory requirements that has a substantial impact on the industry, increasing the cost of products, reducing jobs, and hindering competition.

Additionally, it is important to keep in mind that the mining industry is extensively regulated by the Colorado Department of Reclamation Mining and Safety (CDRMS). Specifically, coal mines are regulated by provisions of the Colorado Surface Coal Mining Reclamation Act (Colorado SCMRA) and hard rock and metal mines are regulated by the Colorado Mined Land Reclamation Act (Colorado MLRA). The requirements of SCMRA and MLRA have common ground with the stormwater provisions in the general permit. Examples of such requirements include site inspections, design, implementation, and maintenance of Best Management Practices (BMPs), and water quality sampling.

Areas of Applicability:

The permit needs to be clear with regard to the areas that it is applied. The current Colorado permit cites the Code of Federal Regulations (40 CFR 122.26) that prohibits requiring a permit for stormwater discharges,

“...which are not contaminated by contact with or that have not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct, or waste products”.

Conversely, the current Colorado permit applies the stormwater permit to “all areas not previously permitted” and includes some areas where uncontaminated stormwater at mining

operations may be generated, such as “roads and railroad lines, outcrops of ponds, inactive loadouts, sites used for storage and maintenance of material handling equipment, and areas granted small area exemptions”. For instance, stormwater runoff from the outcrops of sediment ponds has no realistic potential for contamination due to CDRMS construction and maintenance requirements.

CMA believes that applying the stormwater provisions to all areas not previously permitted is overreaching. The stormwater permit should only be applied to areas that do not drain to point source outfalls permitted under CPDES general or individual permits and that may contaminate stormwater by contact with coal, mineral, or refuse materials. If there is no possibility for the runoff to become contaminated by contact with coal, mineral, or refuse material, there is no reason for the area to be covered by the stormwater provisions. Some of the example areas that are listed may never have the potential for contamination including, but not limited to, the outcrops of ponds, areas granted small area exemptions, office buildings and parking lots, and all undisturbed areas. This should be clarified in the revised permit.

BMP Selection

At coal mines, BMP selection and implementation is regulated by Colorado SCMRA which states,

“(disturbance to the hydrologic balance must be minimized by)...conducting surface coal mining operations so as to prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow, or runoff outside the permit area, but in no event shall contributions be in excess of requirements set by applicable State or Federal law” (SCMRA 34-33-120(2)(j)(II)(A)).

Hard rock and metal mining sites have comparable requirements established by the Colorado Mined Land Reclamation Act. Numerous manuals have been written to designate and design the structural methods of erosion control that are typically employed at Colorado mining operations. Some of the primary BMPs used include the use of sedimentation ponds, small check dams and detention basins, mulching and timely revegetation, surface roughening techniques, contour terraces, and straw bales and filter fencing. Existing BMPs required by CDRMS and routinely implemented and maintained should not be superseded by BMPs required by the stormwater permit, and any additional BMPs should be justified.

Inspections

In the case of site inspections, at active mine sites partial inspections are conducted monthly and complete inspections are conducted quarterly by the CDRMS. Inactive and reclaimed mine inspection frequencies can be reduced to quarterly. Such inspections typically involve investigation of a facilities best management practices, including contemporaneous reclamation, diversions, sediment ponds, berms, and other erosion control structures. Again, manuals have been written for reclamation inspectors to train them on hydrologic processes and soil conservation and revegetation at mine sites. In the event that CDPHE feels that these inspections

are insufficient, CDPHE should work with DRMS to ensure these encompass the stormwater concerns. In Wyoming DEQ's 2007 response to comments, they determined that "at facilities where inspection requirements of the Land Quality Division (LQD) overlap with storm water requirements permittees may use the results of such inspections to satisfy some or all of the storm water requirements" (WDEQ 2007). This approach should also be considered by CDPHE.

Sampling:

Issues with sampling requirements can be separated into the following categories: 1) safety, 2) feasibility of monitoring, 3) spatial extent and environmental benefit, and 4) existing monitoring requirements. The following paragraphs describe these issues in more detail.

1) Safety: The areas subject to stormwater monitoring are relatively small in spatial extent compared to the drainage areas above CPDES permitted point-source outfalls. In these cases, the limited drainage area above the stormwater outfalls does not lend itself to monitoring. The amount of precipitation that would need to occur to produce runoff from these small areas is appreciable, and the runoff is typically sheet flow and of very short duration. Attempting to sample during intense events is dangerous for mine personnel due to lightning, flash floods, and poor road conditions that commonly accompany the storms that generate runoff. Moreover, these areas are often in the remote reaches of the mining permit area, which may be inaccessible during storm events.

2) Feasibility of Monitoring: The cellular nature of storms in the west and the practicality of monitoring these events must be considered. The development of the western alkaline coal mining ELG examined the feasibility of monitoring localized and intense storms. EPA determined that sampling and determining compliance from BMPs is infeasible because of the environmental conditions present. The Federal Register Notice further states that

"Precipitation events are often localized, high-intensity, short-duration thunderstorms and watersheds often cover vast and isolated areas. Rain may fall in one area of a watershed while other areas remain dry, making it extremely difficult to evaluate overall performance of the BMPs. These factors combine to make it burdensome for a permitting authority or mining operator to extract periodic, meaningful samples on a timely basis."

The previous statement was in regard to sampling at sediment basins, but the same interpretation applies to the very small areas that may be subject to stormwater provisions in remote areas of Colorado mining operations. Furthermore, these short-duration events produce runoff shallow in depth precluding the collection of representative samples for analytical purposes. There are also instances where offsite runoff drains onto the permit area and mixes with onsite stormwater. These types of issues exemplify the difficulties with sampling stormwater as opposed to site inspections, which are effective at identifying erosion problems early and provides a means for timely corrective action. For these reasons, sampling requirements should not be imposed in these permits.

3) Spatial Extent and Environmental Benefit: The areas that are subject to the stormwater permits are small in spatial extent. Drainage across the majority of a mine site is directed through sedimentation ponds. Many times, the areas that are subject to the stormwater provisions are only a small fraction of the mine site area. Discharges from these areas commonly feature shallow depths, relatively low rates, and short durations. When this is considered on a watershed scale, the overall impact from such areas is diminished even further. Prior to implementing additional onerous requirements on these stormwater areas, the overall environmental benefit of such actions should be considered.

4) Existing Monitoring Requirements: Colorado coal mine regulations and hard rock and metal mine regulations require that surface water is monitored both upgradient and downgradient of the mine. A list of the analytes that are suggested surface water parameters at coal mines are provided in Table 1. The quarterly monitoring results at these sites are reported in the Annual Hydrology Report submitted to CDRMS. CPDES permits also require monitoring of point-source outfalls on a regular basis and following storm events. Results of such monitoring provide another method of assessing overall onsite BMP effectiveness for controlling stormwater even though the effectiveness of individual ASCMs or BMPs may not specifically become evident.

Table 1: Typical water quality parameters during baseline sampling at coal mines (from Coal Section Guidelines for the Collection of Baseline Water Quality and Overburden Geochemistry Data: Table 2).

Field and Physical Parameters	Major Ions	Trace Elements*
pH (field)	Total Dissolved Solids	Aluminum
Conductivity (field)	Sodium Adsorption Ratio	Arsenic
Temperature (field)	Bicarbonate	Cadmium
Dissolved Oxygen (field)**	Calcium	Copper
Total Suspended Solids **	Chloride	Iron
	Magnesium	Lead
	Nitrate-Nitrite	Manganese
	Phosphate	Mercury
	Sodium	Molybdenum
	Sulfate	Selenium
		Zinc
*Analyzed in total and dissolved species		
**Not necessary for springs and seeps		

Benchmarks:

For reasons previously stated, CMA does not believe that sampling of stormwater sites is feasible or beneficial. However, in the event that sampling is required, the benchmarks and associated corrective actions should be removed for the following reasons.

The 2008 MSGP implements benchmarks of 0.75mg/L for total aluminum, 1.0 mg/L for total iron, 100 mg/L for total suspended solids for Sector H (Coal Mining) and numerous additional

analytes for Sector G (Metal Mining) including, but not limited to, pH, turbidity, total suspended solids, antimony, arsenic, beryllium, cadmium, copper, iron, lead, mercury, nickel, etc. It is CMA's belief that the benchmarks for TSS and metals in total form are overly stringent and unrealistic during stormwater flows.

With regard to TSS, establishment of a 100 mg/L benchmark has no basis. First, at coal mine sediment basins subject to ELGs, the TSS daily maximum limit is 70 mg/L during dry weather. TSS will increase dramatically during storm events, and can easily exceed the Federal benchmark, even with the most effective sediment control (sediment basins) in place. An EPA study on mines in the Eastern U.S. showed that during rainfall events, average TSS exceeded 100 mg/L at 5 out of 9 ponds following sediment basin treatment, sometimes by orders of magnitude (EPA 1976). Similarly, a case study at the Jim Bridger Mine in southwestern Wyoming shows that undisturbed area runoff ranges from 110 to 820,000 mg/L (EPA 2001). The use of ASCMs at this Wyoming mine was employed to maintain runoff at levels comparable to pre-mining levels, which was accomplished. However, the study strongly indicates pre-mining levels would be in excess of the EPA's proposed benchmark. CMA contends that storm-driven suspended sediment from undisturbed areas in the Western U.S., including Colorado, would not meet the proposed EPA benchmark and this arbitrary level should not be implemented.

With regard to benchmarks for metals, such as total iron and total aluminum, these will also exceed the benchmarks employed by EPA in the 2008 MSGP. This is primarily because these metals are commonly bound to suspended sediments, and levels of these constituents will proportionally increase with increased suspended sediment concentrations (iron and aluminum are part of the minerals making up the sediment). Precipitation or snowmelt induced flows will naturally be high in total metals for this reason and often exceed water quality standards. This is evidenced at upstream monitoring locations currently sampled by mining companies, and at surface water sites monitoring as part of undisturbed baseline sampling programs required by CDMRS regulations. Additionally, in many cases the measurement of the total form overestimates the toxic fraction of a pollutant that is biologically available to aquatic life. Again, it is recommended that these arbitrary benchmarks not be implemented at the levels of the 2008 MSGP.

Furthermore, based on the recently finalized non-extractive stormwater permit, exceedances of benchmarks may require corrective action, documentation, and review of the SWPPP. For benchmarks that will be exceeded consistently, this will require a continuous loop of investigation by the permittee with negligible benefit to receiving stream water quality during basin-wide stormwater runoff events. Although the non-extractive permit allows for exceedances of benchmarks due to natural conditions, it still requires analysis, review, and documentation prior to relief, all of which is additional work for the permittee with little measurable environmental benefit.

In the case of both sampling and benchmarks, it is recommended that CDPHE examine historical mine discharge data to determine that there are existing issues at mine sites and that they justify these burdensome requirements. In the event that sampling is required, no numeric benchmarks should be required and all analytes should be "report only" for this permit term. This will allow

CDPHE ample time to collect data specific to Colorado and determine what, if any, numeric benchmarks are appropriate for this area.

A specific comment towards an aluminum benchmark, if it were to be implemented, is that it be consistent with the recently revised Colorado water quality standards.

Conclusion

CMA appreciates the opportunity to comment on the CDPHE Stormwater Discharges Associated with Metal Mining Operations and the Mine-Waste Remediation Permit (COR-040000) and the stormwater provisions in the Coal Mining General Permit (COG850000). If you have any questions regarding these comments, please contact the CMA office.

References

EPA 1976. Erosion and Sediment Control Surface Mining in the Eastern U.S. Volume 1: Planning. Office of Research and Development. EPA/625/3-76/006a. October 1976.

EPA 2001. Development Document for Final Effluent Limitations Guidelines and Standards for the Western Alkaline Coal Mining Subcategory. Office of Water. EPA 821-B-01-012. December 2001.

Wyoming Department of Environmental Quality (WDEQ 2007). *Analysis of Comments Received on Public Notice for Issuance of the General Permit for Stormwater Discharges from Industrial Activities (WYR00-0000)*. September 28, 2007.

Code of Federal Regulations Documents:

40 CFR 122.26. Storm water discharges (applicable to State NPDES programs, see 123.25).

Federal Register Documents:

67 FR 3370. Coal Mining Point Source Category; Amendments to Effluent Limitations Guidelines and New Source Performance Standards. EPA Final Rule. January 23, 2002.