Detailed Objection Comments for Permit Number M1990057
Submitted by Craig Gooch

24. CYANIDE MANAGEMENT PLAN
Introduction Section

Prior to the start of operations, a comprehensive Cyanide Management Plan will be developed…
Section 24 is inadequate because the plan says the plan will be developed later. This section is a plan to plan, not a Cyanide Management Plan that can be assessed for completeness and alignment with industry best practices.

Recovered filtrate, contact water and leachate from the dewatering plant and residue storage facility are collected in a double-synthetic lined pond for return to the mill circuit.
How will animals and birds be prevented from accessing the pond?

The Cyanide Management Plan will be developed in consideration of the principles and standards of practice of the International Cyanide Management Code (Cyanide Code).
This is a halfhearted commitment. Conspicuously absent is the auditing conducted by independent third-party auditors. CJK should be a signatory to the Code and be obligated to all of Code Principles and Practices.

> From the Code website: Implementation of the Cyanide Code is verified through triennial audits conducted by independent third-party auditors. Companies that adopt the Cyanide Code must have their operations that use, transport, or produce cyanide audited to determine the status of Cyanide Code implementation. Those operations that meet the Cyanide Code requirements are certified. This framework provides a mechanism of assurance for enhancing the protection of human health and reducing the potential for environmental impacts.

24.4 POTENTIAL IMPACTS
1. Elimination of direct disposal/spillage of cyanide to the ground, surface water or stormwater drains.
Add elimination of release of cyanide to the air.

4. Proper cyanide transportation and delivery
Should include risks associated with transport of cyanide to the mill project site.

24.5 CYANIDE MANAGEMENT PROCEDURES
24.5.1 GENERAL
The focus of the Leadville Mill Cyanide Management Plan (LMCMP) will be prevention of access to the pregnant solution pond and barren pond to wildlife and livestock, using fencing and other measures, and the prevention of contamination of groundwater.
This section should be applicable to all open water sites that contain contaminants, including sumps and the ECS.

24.5.6 PERSONAL PROTECTIVE EQUIPMENT (PPE)

When handling cyanide in any form, a full-face respirator must be worn at all times.
This should be expanded to specify protective clothing / PPE to avoid absorption of cyanide into the skin.

24.7 MONITORING & REPORTING
Referring to the PRINCIPLES & STANDARDS OF PRACTICE AS DEFINED IN THE CYANIDE CODE table.
This is an incomplete list of Principles & Standards of Practice in the CODE. Thus it is misleading to title the table as such and it implies the Union Milling has selectively chosen which principles & standards of practice they are implying they will abide by.

It appears Union Milling is disingenuous about complying with the Principles & Standards of Practice of the CODE through purposeful omission of CODE signatory obligations.

Wording Inconsistencies (incomplete list below).

2.1 Establish clear lines of responsibility for safety, security, release prevention, training and emergency response in written agreements with producers, distributors and transporters.

From the CODE: Mining Standard of Practice 2.1 Require that cyanide is safely managed through the entire transportation and delivery process from the production facility to the mine by use of certified transport with clear lines of responsibility for safety, security, release prevention, training and emergency response.
Union Milling selectively removed the underlined text above to avoid the responsibility for transport and delivery of cyanide through a certified transport process.

5.1 Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife and livestock.

From the CODE: Mining Standard of Practice 5.1 Plan and implement procedures for effective decommissioning of cyanide facilities to protect human health, wildlife, livestock, and the environment.
Union Milling selectively removed "and the environment". It should be included.

Specific Omissions (incomplete list below)
Mining Standard of Practice 5.2
Establish a financial assurance mechanism capable of fully funding cyanide-related decommissioning activities.
Unclear why CJK is avoiding fully funding cyanide-related decommissioning activities.

Mining Standard of Practice 4.2 Introduce management and operating systems to minimize cyanide use, thereby limiting concentrations of cyanide in mill tailings.
CJK should commit to minimize cyanide use.

Mining Standard of Practice 5.2 Establish a financial assurance mechanism capable of fully funding cyanide-related decommissioning activities.
Who is responsible for fully funding cyanide-related decommissioning if CJK goes out of business?

Mining Standard of Practice 7.4 Develop procedures for internal and external emergency notification and reporting.

Omitted 7.5, 7.6, all of Mining Principle 8 TRAINING, and all of Mining Principle 9 DIALOG AND DISCLOSURE

Union Milling should become a signatory to the CODE as a condition of the permit. Be a responsible cyanide user and be a signatory like other mining companies such as Newmont Corporation.

PRE-MINING & MINING PLAN MAPS OF AFFECTED LANDS
Should the affected lands include the source tailings location, and haul route?

Should property adjacent to probable cyanide transportation routes from suppliers be included because they are at risk for spills that would otherwise not be at risk if the mill did not order cyanide?

22.0 RULE 6. 5 : GEOTECHNICAL STABILITY
Pg 22-1 Results of this analysis will be provided to CDRMS when this work is complete.
The Geotechnical Stability report has not yet been submitted - how can the comment period by DRMS be ended prior to the document being released for review?

7.0 RULE 6. 4 . 7 : EXHIBIT G – WATER INFORMATION
7.1.1 The surface water modeling results presented below assume a worst-case operating Condition.
The modeling is based on the 100 year predicted storm intensity and duration. The 100 yr storm event is 2.48-in for the 24-hr event. However that is not the worst case, and the trend has been that the 100 year storms have been occurring more frequently, thus the likelihood of exceeding the 100 year storm event in the Mill facility lifetime is likely. Why not increase the engineering thresholds to exceed the 100 year storm event for added safety?

ECS – Isolated from all other surface waters on the site receives only direct precipitation and snowmelt. Modeled as zero- discharge because all the retained water in the ECS will be confined and recycled to the milling process or subject to the general strategies discussed in Section 7.2.

The ECS, in addition to acting as a fresh water holding pond for operations, also serves as an

emergency reservoir to safely and temporarily store any spillage that might occur from the milling process as it has been constructed with double synthetic liners with an integrated inter-liner leak detection and collection layer
What is the drawdown rate from the ECS in the event it retains a large amount of water from a major storm event, What triggers that drawdown. Would the ECS capacity be exceeded if back to back design storms occur?

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3. In terms of sediment management, the peak flow that is expected under the 100- yr./24-hr. storm event scenario (refer to Figure 7-4, and Appendix 7-1 - summary for Pond 5P), approximately 1.9 ac-ft of runoff is generated. The current management philosophy is to provide adequate pond depth (10-ft is being considered) and capacity (possibly greater than 0.5 ac-ft) to maximize settling of any suspended solids and to reduce discharge velocities over the planned armored weir of the pond spillway to less than 3 fps. If these design measures are implemented, we believe that the potential for any offsite discharge at Outfall 1 of carried sediment is minimal.
The measures should be a condition of the permit.

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Based on the anticipated consumptive use of water in the process, the facility will operate under a significant deficit and therefore all direct collected precipitation and snowmelt could be consumed or could be re-applied as infiltration in defined controlled basin within the operation, or for revegetation irrigation and dust control water. This approach could virtually eliminate accumulation and/or evaporative losses and therefore eliminate the need for augmentation plans for consumptive industrial uses.
In the event contaminated water is discharged into the ECS, how could water be re-applied for infiltration, revegetation, or dust control. Those activities would spread contamination across the site.

7.4 PROJECT WATER SOURCE

3 sourcing options for water supply are under consideration:
• On-site water well;
• Leadville Sanitation;
• Parkville Water District, industrial user purchase
The selected water source will be provided prior to commencement of plant operation.
The plan should not be approved until the sourcing is determined. Onsite well water extraction impacts could be significant with aquifer drawdown.

4.4.2 TAILINGS CHARACTERIZATION
Process simulations at laboratory scale were carried out to generate representative tailings samples using feed composites assembled from both drilling and bulk samples of Penn Group dump material.

While two composite samples were tested as a part of this preliminary program, the results can be considered as a directional indication of the non-hazardous classification of the anticipated filtered tailings solids.
Evidence should be presented that the representative tilings samples are statistically representative of the variations of materials from the Penn Mine tailings. Two tiling characterisation samples seem inadequate. Average constituents are not adequate as the constituent analysis is the basis for determining if the processed material is non-hazardous that will result in a less robust FTD liner lacking a leak detection system.

The earlier version of the tailings management plan submitted to DRMS was based on the general assumption of hazardous classification of the materials and this mandated a containment system incorporating double geosynthetic liners with integrated leak detection systems, consistent with conventional RCRA-based impoundment designs. MSW facilities in Colorado allow for a modified liner configuration that typically consists of a three-layer design incorporating a base 24-inch clay liner or geosynthetic clay liner (GCL) over a prepared subgrade followed by a layer of HDPE liner and drainage blanket (continuous gravel or geocomposite) that typically functions as the landfill leachate collection system. This liner system is completed by placement of a layer of protective soil cover of relatively higher hydraulic conductivity over the drainage blanket to prevent damage during waste placement operations and at the same time ensure free flow of surface waters and seepage that may infiltrate through the deposit over time.
How will future tailings from the Penn mine be confirmed that they comply with the non-hazardous classification prior to processing and impoundment within the FTD?

Leadville Tailings Characterization by Patterson and Cooke
Pg 3.
An FMP of 19.4% for the Leadville tailings provides a reference point of where the dry particle type behavior transitions to wet fluid-type behavior.

RULE 6.4.4: EX. D-MINING PLAN
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The filtrate and filter cake solids from these tests were also used for the leachability tests (TCLP) and other waste characterization tests as previously described. The design target water content of between 20% and 30% will yield physical properties that allow for mechanical handling and placement of the tailings in the FTD.
Given the FTD design water content is between 20% and 30% and exceeding the 19.4% water content the material behaves as a wet fluid. Exceeding the 19.4% moisture content either by limiting dewatering to 20%-30% or through snow melt or rainfall infiltration will result in structural instability of the 500,000 ton FTD pile. Catastrophic failure of the FTD due to liquefaction would likely destroy or severely damage the Leadville Sanitation District facilities, the Mill buildings, and contaminate the down flow environment.