WELBORN
SULLIVAN MECK & TOOLEY, P.C.

April 1, 2024

Via First Class U.S. Mail and
Email (Lucas.West@state.co.us)

Mr. Lucas J. West
Division of Reclamation, Mining and Safety
1001 E. 62nd Ave., Room 215
Denver, Colorado 80216

Re: Objection to Application of Union Milling Company, LLC
Leadville Mill – File No. M-1990-057
Permit Conversion Application (CN-3)
Conversion to 112(d) Designated Mining Regular Operations Permit

Dear Mr. West:

On behalf of the Leadville Sanitation District ("District"), I am writing to object to the 112(d) Designated Mining Regular Operations Permit Application filed by Union Milling Company, LLC ("Applicant") for the Leadville Mill owned by CJK Milling Company, LLC for the reasons set forth below.

The Applicant, which operates the Leadville Mill, plans to significantly increase the size, scope and impact of its current operations. Its proposal to convert its 110d permit to a 112d permit involves doubling the operating capacity of ore processed from 200 to 400 tons per day (from 70,000 to 140,000 tons per year), constructing a new Filtered Tailings Deposit ("FTD"), adding agitated cyanide vat leaching, and converting the existing tailing facility to an emergency water containment.

The Leadville Sanitation District owns and operates wastewater treatment facilities servicing Leadville and surrounding communities. The District's facilities are located adjacent and immediately to the east of the Leadville Mill. The District has a sewer line that runs through the site of the Mill and a polishing pond that lies within 200 feet of it. Other District facilities are located nearby on the District's property. The District is concerned about the impacts this permit conversion and expansion will have on its water treatment operations. A memorandum prepared by JVA Consulting Engineers ("JVA Memo") explaining some of the District's technical concerns is attached as an exhibit to this letter.

Water Quality

The District's Colorado Discharge Permit System permit from the Colorado Department of Public Health and Environment ("CDPHE") requires the District to sample and analyze effluent for the following pollutants: arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, silver, zinc, cyanide, and phenols. The District spends significant time and money on its efforts to comply with its discharge permit and cannot afford to have its operations jeopardized by nearby activities that might impact its ability to meet CDPHE's strict permit limits.

The District's permit limit for total mercury is 0.077 µg/L. Low level mercury is present throughout Leadville in the soil, water, and air due to historic mining operations. The District is subject to similarly strict permit limits for cadmium and zinc. Even extremely small additional quantities of mercury, cadmium, or zinc—such as in wastewater resulting from worker handwashing at the Mill—could, upon transfer to the District's facility, cause the wastewater in the District's polishing pond and discharge to exceed the permit limits. The District is concerned that the Applicant's proposed increased operations will make it difficult to continue meeting its discharge permit limits, particularly given the elevated concentrations of mercury and cadmium reported for the mill tailings, and the Applicant's proposed use of zinc dust in the Mill operations. *See* JVA Memo. Moreover, when the District's permit is renewed, CDPHE could impose additional limits for other consituents if they are detected in effluent at levels that present a concern for human health or the environment.

The Application also acknowledges that the District's facilities could be affected by an extraordinary storm event. Application, Exhibit S, Appendix 19-6. The Applicant states that under the Stormwater Management Plan, flows would be diverted to "Outfall No. 2," thereby reducing the risk of damage to the sanitation facilities. It is unclear how that diversion would protect the sanitation facilities, given that the outfall is located upgradient from the District's facilities.

Cyanide

Although processing gold ore with cyanide may be standard in the industry, it is not without risk. The Material Safety Data Sheet ("MSDS") for sodium cyanide shows it to be identified with the following hazards: corrosive to metals, acute oral toxicity, acute dermal toxicity, acute inhalation toxicity, and specific target organ toxicity (repeated exposure). It is fatal if swallowed, in contact with skin, or inhaled. It is also "[v]ery toxic to aquatic life with long lasting effects." Application, Exhibit U, Appendix 21-2.[1] There have been a number of serious incidents around the world involving cyanide spills and leaks. The amount of sodium cyanide the Applicant proposes to use, 1,600 pounds per day, is substantial. Application, Exhibit D, Table 4-11. The mere fact of the next-door neighbor using so much cyanide gives the District concern for the safety of its employees, the community, and downstream aquatic life.

[1] *See also* MSDS for sodium cyanide, Cat. No. S284I-100, S284I-500, *available at* www.fishersci.com (revised Dec. 24, 2021).

In addition, the District is concerned that the Applicant has not demonstrated that it has significant experience working and processing ore with cyanide. Showing a high level of expertise should be required before approving the permit conversion.

Airborne Contaminants

The Applicant's expanded operations and handling of ore threaten to impact the District's wastewater treatment facility with airborne heavy metals and toxic particulates in the form of fugitive dust leaving the Applicant's property. To the District's knowledge, although the Leadville Mill may have been permitted to process 200 tons per day, it rarely ran continously at anything near that amount of throughput. The amount of particulates leaving the Mill property will be much higher than it ever was in the past.

The Application indicates that there will be at least two ore stockpiles, one topsoil stockpile, and one ECS overburden stockpile. Section 4.2.7 of the Application, Exhibit D, addresses dust control, but only within the Crusher and Mill buildings. The District is concerned that the transport and handling of large amounts of ore outside the buildings will lead to dust blowing onto its polishing pond and aeration basin, potentially impacting its water quality, operations, and permit compliance. Even small amounts of additional particulate matter containing mercury, cadmium, or zinc entering the polishing pond could jeopardize the District's compliance with its strict permit limits.

Dust from the road running near the District's property boundary and polishing pond is also a concern. At a minimum, this road should be paved. The District is already hard pressed to meet compliance limits imposed by CDPHE. *See* JVA Memo.

Filtered Tailings Deposit

The Application includes a Filtered Tailings Deposit (FTD) instead of a Tailings Storage Facility (TSF). The operations will still, however, involve a significant amount of cyanide. Moreover, the FTD will be located uphill and even closer to the District's polishing pond. The District is concerned that runoff or seepage from the FTD could affect the District's operations and water quality. *See* JVA Memo.

Seismic Impacts

The District is also concerned about the potential damage to its facilities from the Applicant's seismic activity. The District's wastewater treatment facility consists of a headworks for screening and grit removal, two aeration basins, two covered clarifiers, a polishing pond, and a chlorine contact chamber for disinfection. The Applicant's operation of crushing equipment next door to the District's infrastructure threatens to crack foundations and pipelines that the District needs to operate its water treatment facilities. *See* JVA Memo. The Application, Exhibit S, Appendix 19-6, acknowledges the potential for localized seismic activity from the proposed Mill operation to have detrimental impacts on the sewer line and sanitation facilities. The Application

dismisses this potential, however, based on model calculations that suggest "estimated" vibrations would be "imperceptible" or "well below" damage thresholds. Those calculations are based on values associated with construction activities, rather than mining or ore crushing activities, and do not address whether "perceptible" vibrations nevertheless could, over time, damage the District's sewer line and facility.

As explained in the JVA Memo, the District is under a compliance schedule to reduce inflow and infiltration into its collection system. The increased seismic activity nearby could also affect the District's efforts to reduce inflow and infiltration. Damage to the collection system could result in seepage of wastewater into the ground.

For the reasons set forth above and others yet to be determined, the Leadville Sanitation District requests that the Permit Conversion Application CN-3 be denied.

Very truly yours,

Danielle DiMauro

Enclosure: JVA Consulting Engineers Memorandum (March 18, 2024)
cc: Joseph Fattor

Exhibit

JVA Consulting Engineers Memorandum
March 18, 2024

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M E M O

TO:	District Board	DATE:	March 18, 2024
FIRM:	Leadville Sanitation District	JOB NO.	1119.2e
ADDRESS:	911 US Hwy 24	PROJECT:	Union Milling – Permit M1990-057
	Leadville, CO 80461	SUBJECT:	District Engineer Objections

Dear District Board,

JVA has reviewed the Union Milling Company Mill (Mill) revised Permit M-1990-057 Version 1 Leadville Mill Permit dated February 2, 2024, received March 6, 2024, and developed a list of objections based on potential impacts and detrimental effects to the Leadville Sanitation District's (District) Wastewater Treatment Facility (WWTF) and sanitary sewer collection system. The Mill is located directly west of the District's WWTF and was constructed in 1989 and operated through 2000 as a stand-alone facility. The District's sanitary sewer collection system runs through the northern part of the property.

In review of the new Mill permit application, JVA understands the Mill has proposed to change the original constructed tailing facility to a double-lined sump to prevent any catastrophic spill into ground or surface water. The filter tailings deposit (FTD) will filter tailings prior to deposition. Seepage from the tailings as well as snow and runoff will be captured in a lined down-gradient catchment pond.

JVA has similar concerns to the previously submitted mill permit application primarily related to seismic activity and low level metals.

The report states the Area 100 Crushing Circuit will maintain low seismicity. Although the applicant indicates low seismicity, JVA is still concerned about potential disturbance and impacts to the District's collection system. The District collects and treats wastewater from downtown Leadville as well as developments located west of Leadville. Wastewater flows by gravity through the collection system to the WWTF. Figure 1 below shows the District's existing sanitary sewer line that contains significant wastewater flows that could be directly impacted by the new crushing facility.

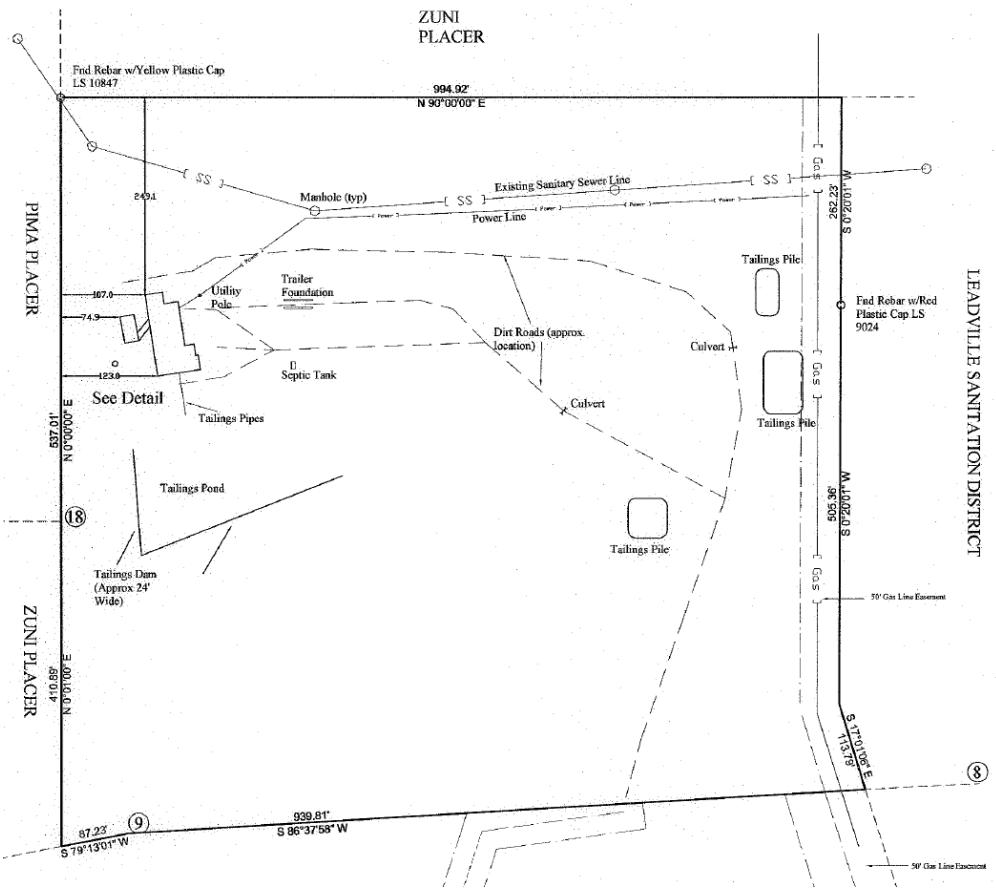

Figure 1. Existing Sanitary Sewer line.

The District is currently under a compliance schedule to reduce inflow and infiltration into the collection system. Inflow is water, other than wastewater, that enters a sewer system from sources such as roof leaders, cellar drains, yard drains, area drains, foundation drains, drains from springs and swampy areas, manhole covers, cross sections between storm drains and sanitary sewers, catch basins, cooling towers, storm waters, surface runoff, street wash waters or other drainage. Inflow does not include, and is distinguished from, infiltration. Infiltration is water other than wastewater that enters a sewer system (including sewer service connections and foundation drains) from the ground through such means as defective pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.

The new crushing facility could impact the collection system by disturbing the manholes, pipes, and service lines resulting in an increase in the infiltration of groundwater into the collection system. This increase in infiltration is in direct conflict with the CDPHE compliance schedule to reduce inflow and infiltration into the collection system. Damage to the collection system could also result in exfiltration or seepage of wastewater into the ground which would be a direct violation of the Clean Water Act. The cost of repair of this infrastructure would fall to the Sanitation District and the residents of Leadville. The District's WWTF consists of a headworks for screening and grit removal, two aeration basins, two covered clarifiers, a polishing pond, and a chlorine contact chamber for disinfection. Nearby seismic activity from the proposed Mill could also have detrimental effects to the existing WWTF structures that are required for wastewater treatment and permit compliance.

Low level mercury is present throughout Leadville in the soil, water, and air due to historic mining operations. The potential for increased infiltration into the sewer collection system as previously stated from the new crushing facility could increase mercury and other metal constituents to the WWTF possibly resulting in effluent compliance violations for the District.

The WWTF operates under the Colorado Discharge Permit System Permit Number CO0021164. The District's permit limit for total mercury is 0.077 µg/L. The permit limit for potentially dissolved cadmium ranges from 1.1 to 1.6 µg/L, and the limit for potentially dissolved zinc ranges from 268 to 480 µg/L varying seasonally with hydrologic fluctuations.

The permit also requires the District to report effluent limits for an extensive list of pollutants including arsenic, chromium, copper, cyanide, iron, lead, manganese, molybdenum, nickel, selenium, silver, uranium, sulfide, nonylphenol, cesium, radium, strontium, thorium, BTEX, and benzene.

Since the Mill is located directly adjacent to the District's WWTF, the wind transport of metals from trucks entering and leaving the facility as well as ore, topsoil, and overburden stockpiles and dust from the crushing facility could have detrimental effects and possibly contaminate the open air wastewater treatment basins at the WWTF. While the applicant proposes dust control of the mine dump material with spray water, JVA does not believe this will be an effective method for completely eliminiating low level metals from the air. Effects from metals transport by air to the WWTF could be seen immediately or could occur over a period of time since the District has extremely low level metals limits in µg/L and is required to monitor metals on a frequent basis in the wastewater effluent and report this information to CDPHE. Violations of the discharge permit limits would lead to fines to the District increased rates for the residents of Leadville.

Also, it's important to note that the tailings detection limits per Table 4-30 Mill Tailings TCLP Results below are in mg/L for the metals listed while the District's permit limits are in µg/L. If the Mill is only required to test the tailings to mg/L, they could be reporting non detectable values because of the test methods utilized are not capable of measuring to low level µg/L limits. JVA recommends the testing and reporting of all metals for the Mill be changed to µg/L for low level metals analysis. The mercury and cadmium levels tested in the Mill Tailings exceeds the limits set in the District's discharge permit. The Mill states that zinc dust will be used in its process to precipitate gold and silver from cyanide, though concentrations of zinc on site were not specified.

TABLE 4-30: MILL TAILINGS TCLP RESULTS

EPA Waste No.	Hazardous Constituent	Standard (mg/l)	ALS Test Result (mg/l)	% of Standard
D004	Arsenic	5.000	0.045	0.90%
D005	Barium	100.0	0.182	0.18%
D006	Cadmium	1.000	0.008	0.80%
D007	Chromium	5.000	0.020	0.40%
D008	Lead	5.000	0.037	0.74%
D009	Mercury	0.200	0.00975	4.88%
D010	Selenium	1.000	0.050	5.00%
D011	Silver	5.000	0.010	0.20%

TABLE 4-31: RCRA TCLP METAL RESULTS

Hazardous Constituent	Final Residue Solids (ppm)	TCLP Seepage (ppm)	Limit (ppm)	% Reporting to Final Seepage Residue
Barium	520	0.182	100.00	0.04%
Lead	1,500	0.037	5.00	0.00%
Silver	13	0.010	5.00	0.08%
Arsenic	340	0.045	5.00	0.01%
Cadmium	1.6	0.008	1.00	0.50%
Chromium	14	0.020	5.00	0.14%
Selenium	1	0.050	1.00	5.00%
Mercury	5.2	0.00975	0.20	0.19%

Lastly, the Mill is proposing to use a lift station for the sanitary sewer. The lift station will be privately owned, operated and maintained by the Milll. Lastly, another concern is low level metals leaving the facility from employees washing their hands as this wastewater would enter the District's sanitary sewer collection system and ultimately end up at the District's WWTF influent.

This summarizes our review of the Mill permit and objections based on our understanding of the proposed Mill and operations.

Signed: Chelsea Fagan

Chelsea Fagan
Senior Project Engineer

Copies to:
Danielle DiMauro– Welborn Sullivan Meck & Tooley, P.C.
Joseph Fattor – District Attorney