

FACT SHEET
(pursuant to NAC 445A.401)

Permittee Name: **Dun Glen Mining Corp.**

Project Name: **Dun Glen Placer Mine**

Permit Number: **NEV2012105 (New 2012)**

A. Location and General Description

Location: The **Dun Glen Placer Mine** (Facility) is located on private land (patented mining claims). The Facility is situated at an elevation of approximately 5,000 feet above mean sea level (AMSL) on the northwest slope of the East Range in Pershing County, Nevada, within Sections 15 and 16, Township 33 North, Range 36 East, Mount Diablo Baseline and Meridian, approximately twenty (20) miles southwest of the town of Winnemucca. The Facility may be accessed by traveling approximately 27 miles west from Winnemucca on Interstate Highway 80 to the Dun Glen exit #151; east under the Interstate and approximately 0.5 mile on a county-maintained gravel road to a 'fork' in the road; turn left at the 'fork' and continue approximately seven (7) miles to the project site.

General Description: The Facility is a physical separation project in accordance with Nevada Administrative Code (NAC) 445A.414 designed to extract gold from alluvial gravel material excavated from several open pit excavations. Production is weather dependent and will total up to 3.25 million tons per year, based on a target feed rate of 250 cubic yards per hour, 24 hours per day. The gravity separation process circuit utilizes an ore hopper, a rotating grizzly and trommel, sluice boxes, jigs, conveyors, stockpiles, a concentrating table, a dewatering screw, a settling tank, and four (4) ponds (Freshwater Pond, Settling Trench, Settling Pond, and Recycle Pond). Make-up water is pumped to the earthen Freshwater Pond from two permitted production wells located upgradient approximately one (1) mile northeast of the Facility. Process water is collected and gravity clarified in the earthen Settling Trench, the earthen Settling Pond, and the lined Recycle Pond, for reuse in the process circuit. No chemicals, except for approved flocculents listed in the Permit, are authorized for use in the process. The mine plan includes concurrent reclamation with process reject material. The proposed activities will disturb up to 130 acres, exclusively on private patented property, with a total disturbance of 25 acres or less at any given time.

B. Synopsis

General: The Dun Glen Placer Mine is situated along Dun Glen Creek, which drains the west side of the East Range Mountains. Extensive, unreclaimed disturbance from historic, pre-regulation mining operations remains along the creek. Reports indicate lode gold was discovered and vein deposits were briefly mined in Dun Glen Canyon during the early 1860's. Attempts by Chinese miners between 1880 and 1890 to drift-mine the placer gravel gold deposits met with limited success due to the relatively shallow water table (approximately 30 to 60 feet below ground surface). Further exploration of the deposits in the 1920's to 1930's led to the first placer operation in 1931. The area has been intermittently mined for placer gold deposits since that time. A mining operation in this area was first permitted in 1991 by Tahoe Milling Company (Water Pollution Control Permit (WPC) NEV0091007). The former WPC Permit was subsequently transferred to Vector Mining, Inc., before being revoked by the Division in February 2007 for noncompliance. Tahoe Milling Company remains the private landowner for the current Facility, and leases the land and water rights to Dun Glen Mining Corp., the current Permittee and operator of the Facility.

Historic drilling results indicate that bedrock occurs at a depth of approximately 30 to 50 feet below ground surface (bgs). The pay gravels were previously reported to occur in zones zero to 15 feet above the bedrock surface. The Facility is expected to have a mine life of approximately 20 years.

Mining: Mining of gold-bearing placer material will occur entirely on private patented property, located generally north, south, and east of the process circuit, in the Dun Glen Creek drainage and on adjacent terraces and hillsides. Mining will occur on five-acre tracts with the total unreclaimed project area being no greater than 25 acres at any given time. Reclamation of mined areas will take place concurrently with mine operation, using coarse to fine reject material from the process circuit, and fine sediment dredged from the Settling Trench, Settling Pond, and Recycle Pond, to backfill the pits. Mining will not occur within an active stream channel (waters of the State) without prior authorization from the Division and other applicable federal, State, and local agencies.

Approximately 9,000 tons of ore will be mined daily and transported to the processing plant by 20- to 30-ton articulating haul trucks. Pre-mining stripping will typically not be required because essentially no overburden is present in the planned mining area. If and when overburden (native alluvial soil) is present, it will be stockpiled for later use as cover during reclamation.

Processing: Ore from the pits is stockpiled near the feed hopper and loaded into the feed hopper using a front-end loader, excavator, or conveyor. The hopper feeds a rotating grizzly that removes the plus six-inch diameter cobbles. The minus six-inch diameter material feeds into a rotating mobile trommel for

separation of the plus three-eighths-inch diameter gravel. Process water is added at the hopper, grizzly, and trommel. Reject cobbles and gravel (plus six inch and plus three-eighths inch) are combined and stockpiled for use in reclamation. The minus three-eighths-inch diameter material flows next through two sluice boxes for separation of coarse gold. The sluices empty into dual Pan-American jigs, and the jig concentrate flows by gravity to a concentrating table for recovery of fine gold and heavy sands. The heavy black sands from the concentrating table are collected in fifty-five-gallon drums for future off-site processing. Off-site processing shall not occur until approved by the Division. The mid-weight reject sand from the jigs is processed in a third sluice box that empties into a dewatering screw. The dewatered sand from the dewatering screw is conveyed to a stockpile, and the separated process solution flows via an open 16-inch polyvinyl chloride (PVC) pipe to a 12-foot by 12-foot by 10-foot tall concrete Settling Tank to allow settling of fine suspended sediment (minus 200 mesh). The Settling Tank has a partially open top and is recessed below the ground surface so that it may also receive drainage of stormwater and any process water spillage from the process area. Process water from the Settling Tank is conveyed by gravity through an eight-inch diameter PVC pipe to the Settling Trench.

Further on-site processing may include the use of a Gold Tron self-contained gold recovery system. Stockpiled reject material from various points in the process will be transported periodically back to the mine pits for use as backfill to aid in concurrent reclamation of the mined areas.

The Settling Trench is a process pond that measures 300 feet by 50 feet with a 10-foot depth and a capacity of approximately 445,000 gallons with a two-foot freeboard. The Settling Trench is located southeast of the process circuit on the northwest side of Dun Glen Creek. Due to the pond's close proximity to Dun Glen Creek and its bottom elevation being close to the elevation of the adjacent creek bed, near-vertical cut-off walls constructed of 60-mil high-density polyethylene (HDPE), anchored in key trenches at the pond crest, are installed within the pond embankment along the three sides closest to the creek to prevent lateral seepage from the pond to the creek or vice versa. The HDPE cut-off wall liner extends three (3) feet below the bottom elevation of the pond. The cut-off wall excavations are backfilled and compacted in 1.5-foot lifts. The Settling Trench receives process solution containing fine suspended sediment from the process circuit (Settling Tank) via an eight-inch diameter PVC pipe. Overflow from the Settling Trench is conveyed through an eight-inch diameter PVC pipe to the Settling Pond. The overflow pipe is suspended above Dun Glen Creek using steel supports.

The Settling Pond measures 200 feet by 200 feet with a 10-foot depth and a capacity of approximately 1.87 million gallons with a two-foot freeboard. The Settling Pond is located directly across Dun Glen Creek (on the southeast side of the creek) from the Settling Trench. The Settling Pond has a bottom elevation

approximately 10 feet lower than the elevation of the adjacent creek bed. As with the Settling Trench, near-vertical cut-off walls constructed of 60-mil HDPE, anchored in key trenches at the pond crest, are installed within the pond embankment along the three sides closest to the creek to prevent lateral seepage from the creek to the pond or vice versa. As with the Settling Trench, the HDPE liner extends three (3) feet below the bottom elevation of the pond, and the cut-off wall excavations are backfilled and compacted in 1.5-foot lifts. The Settling Pond receives process solution containing fine suspended sediment from the Settling Trench via an eight-inch diameter PVC pipe. Any overflow from the Settling Pond is conveyed through a culvert to the Recycle Pond.

The Recycle Pond is located adjacent to the Settling Pond on the southeast bank of Dun Glen Creek. The Recycle Pond, like the Settling Pond, measures 200 feet by 200 feet with a 10-foot depth and a capacity of approximately 1.87 million gallons with a two-foot freeboard. However, the Recycle Pond was constructed in 2003 by a previous operator (Vector Mining, Inc.) using a single 60-mil HDPE liner, anchored in key trenches at the pond crests. 24-inch, corrugated, galvanized-steel culverts, equipped with valves and flow meters, and installed in the Recycle Pond embankment near the north and west corners of the pond were designed as an inlet to the pond from Dun Glen Creek, and an outlet from the pond to the creek, respectively. An existing Nevada Division of Water Resources water permit authorizes diversion of creek water into the Recycle Pond, but discharges of process solution to the creek are not authorized by the Permit.

A minimum two-foot freeboard will be maintained in all ponds. The two-foot freeboard reserves sufficient volume to contain the 100-year, 24-hour storm event without the ponds overtopping. Periodically, accumulated sediment will be removed from the Settling Trench, the Settling Pond, and the Recycle Pond by dredging and be either temporarily stockpiled or transported directly to the mine pits for backfill and reclamation.

Reclamation performed by a previous operator realigned the Dun Glen Creek channel to bypass the Recycle Pond on its northwest and southwest sides. Any further diversion of Dun Glen Creek requires prior approval by the Division, and other federal, State, and local agencies, as applicable. Stormwater will be diverted around the Settling Trench, Settling Pond, and Recycle Pond using earthen berms to prevent run-on from entering the ponds. In accordance with an engineering and hydrologic assessment included in the Permit application, to prevent overtopping of the Settling Trench, Settling Pond, and Recycle Pond by Dun Glen Creek as a result of the 100-year, 24-hour storm event, the pond crests must be compacted and maintained with a minimum width of 10 feet and a minimum elevation four (4) feet above the adjacent creek bottom elevation.

The Freshwater Pond is an existing earthen pond located in an historic excavation approximately one mile upstream (northeast) of the rest of the Facility, and

approximately 300 feet downstream (southwest) of production wells 1 and 2. The Freshwater Pond and the production wells are located just north of Dun Glen Creek within the creek drainage. The Freshwater Pond has an approximate area of 35,000 square feet and a maximum depth of 20 feet, providing an estimated volume of approximately 1.5 million gallons. Groundwater from production wells 1 and 2 is conveyed by pipe to the Freshwater Pond. A four-inch diameter PVC pipe conveys freshwater from the Freshwater Pond to the rest of the Facility, and branches of the four-inch diameter PVC pipe feed the Settling Pond, the Recycle Pond, and the ore hopper, grizzly, and trommel. Another branch of the four-inch diameter PVC freshwater pipe connects to a pump house located just southwest of the process circuit. The pump house is associated with an existing homestead and septic system, and will not be used as part of the beneficiation process circuit.

Process water may be recirculated through the process circuit by pumping from the Recycle Pond at a rate of 1,700 gallons per minute (gpm) via an eight-inch diameter PVC pipe to the hopper, the rotating grizzly, and the rotating trommel. Approved flocculents may be added to improve process water clarification prior to recycling the water back through the process circuit. The approved flocculents will be added at a concentration of 5-9 milligrams per liter (mg/L). The estimated water consumption rate for the Facility is 170 gpm, which accounts for evaporation, absorption by dry ore, and dust suppression.

Existing facilities and portable storage containers will be used for storage and shop space. Repair of mobile fleet equipment will be conducted on approved containment whenever possible to avoid release of petroleum to the environment. Any spilled or leaked petroleum will be cleaned up immediately, and the impacted material properly disposed off-site. Petroleum products will be stored in a mobile fuel truck, above-ground tanks, or 55-gallon drums placed within a bermed secondary containment basin lined with 60-mil HDPE. All non-hazardous waste materials will be properly disposed at an off-site facility authorized to receive such waste, unless Division approval (Bureau of Waste Management) is obtained for operation of a Class III waived landfill at the site. Human waste will be disposed using a previously installed septic system. The landfill and septic system are outside the scope of this WPC Permit. All related permits and authorizations must be obtained separately by the Permittee from appropriate federal, State, and local agencies.

C. Receiving Water Characteristics

Dun Glen Creek perennially flows southwest within Dun Glen Canyon through the project area. Dun Glen Creek is a tributary of the Humboldt River. Flow rates are estimated to range seasonally from 200 to 2,000 gallons per minute, dependent upon ephemeral flow contributions from several small tributaries also located on the west side of the East Range mountains. In the project area, water

from Dun Glen Creek has historically been used for stock watering and mining purposes. At several locations within the project area, the creek bed has been displaced by past mining activities. However, further diversion of the creek is not authorized under the current Permit.

Exploration drill holes and water wells in the project vicinity indicate that groundwater depths vary from 30 to 60 feet below ground surface (bgs) to nearly 200 feet bgs. The Permit application states that the closest water well to the project is approximately one mile away and has a static water level of 176 feet bgs. The next closest well is approximately two miles to the southeast of the project and has a static water level of 162 feet bgs.

The approved sources of water for the Facility are production wells 1 and 2 (Nevada Division of Water Resources water permit 17562), located near Dun Glen Creek approximately one mile upstream from the processing circuit, and diversion of Dun Glen Creek into the Recycle Pond (Nevada Division of Water Resources water permit 17552). Although the Permittee retains rights to several additional water permits (e.g., water permits 48507, 48508, 57586, 57587, 57652T, 57653T, 57786, 57815, 57816T, and 57937), no other water source is permitted for use by the Facility unless authorized by the Division based in part on a water quality analysis. An analysis of groundwater from one of the production wells submitted with the Permit application indicates good quality that meets all of the Division's Profile I water quality reference values.

As a tributary of the Humboldt River, Dun Glen Creek is subject to the designated beneficial uses and surface water quality standards specified at NAC 445A.1446, which apply to the reach of the Humboldt River between the Comus Gage and Imlay and to all tributaries to that reach, including Dun Glen Creek, regardless of whether or not Dun Glen Creek typically flows continuously to the Humboldt River. Dun Glen Creek is also subject to the water quality standards specified at NAC 445A.1236, regarding standards for toxic materials applicable to designated beneficial uses. An analysis of surface water collected from Dun Glen Creek just upstream of the Recycle Pond that was submitted with the Permit application indicates slight exceedances of applicable surface water standards for selenium and total dissolved solids resulting from upstream conditions not associated with the current Facility.

Three Meteoric Water Mobility Procedure (MWMP) Profile I analyses of ore to be processed by the Facility suggest that the process solution derived from the ore may have potential to degrade waters of the State with respect to arsenic and fluoride, and possibly iron and aluminum also, but only if it was released directly to waters of the State. Therefore, degradation of waters of the State is considered unlikely unless Dun Glen Creek overtops the process ponds. The Recycle Pond is synthetically lined and the Settling Trench and Settling Pond both include synthetic cut-off walls to prevent lateral seepage between the creek and the ponds.

The Permit requires maintenance of the pond crests in accordance with an engineering assessment to prevent overtopping by Dun Glen Creek as a result of a 100-year, 24-hour storm event. The Permit also requires monitoring of Dun Glen Creek upstream and downstream of Facility process components to determine if degradation has occurred. If degradation is detected, the Permit requires notification of the Division and submittal of a plan to remediate the degradation and prevent recurrence.

D. Procedures for Public Comment

The Notice of the Division's intent to issue a Permit authorizing the facility to construct, operate and close, subject to the conditions within the Permit, is being sent to the Lovelock Review-Miner for publication. The Notice is being mailed to interested persons on the Bureau of Mining Regulation and Reclamation mailing list. Anyone wishing to comment on the proposed Permit can do so in writing within a period of 30 days following the date of public notice. The comment period can be extended at the discretion of the Administrator. All written comments received during the comment period will be retained and considered in the final determination.

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected intrastate agency, or any interested agency, person or group of persons. The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.403 through NAC 445A.406.

E. Proposed Determination

The Division has made the tentative determination to issue the Permit.

F. Proposed Effluent Limitations, Schedule of Compliance, Special Conditions

See Section I of the Permit.

G. Rationale for Permit Requirements

The Facility is located in an area where annual evaporation is greater than annual precipitation. Therefore, it must operate under a standard of performance which authorizes no discharge(s) except for those accumulations resulting from a storm event beyond that required by design for containment (25-year, 24-hour storm).

The Settling Trench, Settling Pond, and Recycle Pond all incorporate design elements to prevent degradation of waters of the State, and the Permit requires maintenance of pond crests such that they will withstand flows in Dun Glen Creek resulting from the 100-year, 24-hour storm event.

The primary methods for identification of escaping process solution will be required routine visual monitoring of Facility process components and routine sampling of Dun Glen Creek upstream and downstream of process components. Specific monitoring requirements can be found in the Water Pollution Control Permit. If degradation is detected, the Permittee is required to notify the Division and submit a plan to remediate the degradation and prevent recurrence.

H. Federal Migratory Bird Treaty Act

Under the Federal Migratory Bird Treaty Act, 16 U.S.C. 701-718, it is unlawful to kill migratory birds without license or permit, and no permits are issued to take migratory birds using toxic ponds. The Federal list of migratory birds (50 CFR 10, April 15, 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife Service is authorized to enforce the prevention of migratory bird mortalities at ponds and tailings impoundments. Compliance with State permits may not be adequate to ensure protection of migratory birds for compliance with provisions of Federal statutes to protect wildlife.

Open waters attract migratory waterfowl and other avian species. High mortality rates of birds have resulted from contact with toxic ponds at operations utilizing toxic substances. The Service is aware of two approaches that are available to prevent migratory bird mortality: 1) physical isolation of toxic water bodies through barriers (covering with netting), and 2) chemical detoxification. These approaches may be facilitated by minimizing the extent of the toxic water. Methods which attempt to make uncovered ponds unattractive to wildlife are not always effective. Contact the U.S. Fish and Wildlife Service at 1340 Financial Boulevard, Suite 234, Reno, Nevada 89502-7147, (775) 861-6300, for additional information.

Prepared by: Thomas E. Gray

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Revision: New Permit