FACT SHEET
(Pursuant to Nevada Administrative Code (NAC) 445A.236)

Permittee Name: **Robinson Nevada Mining Company**

Project Name: **Robinson Gleason Creek Discharge Project**

Permit Number: **NEV2010111**
Review Type/Year/Revision: **Renewal 2023, Fact Sheet Revision 00**

A. Location of Discharge

Location: The Robinson Gleason Creek Discharge Project authorizes the discharge of groundwater onto a riprap-lined energy dissipater apron located along Gleason Creek within the SE¼ of the NE¼ of Section 18, Township 16 North (T16N), Range 63 East (R63E), Mount Diablo Baseline and Meridian (MDB&M). Groundwater is pumped from dewatering wells located within Sections 14, and 15, T16N, R62E, MDB&M.

The discharge apron may be accessed by traveling west on US Highway 50 approximately 2.6 miles from the intersection of US Highway 50 and US Highway 93 in the City of Ely or by traveling east approximately 3.4 miles on US Highway 50 from its intersection with State Highway 485 (old State Highway 44). The discharge apron is in the creek bed on the south side of US Highway 50 near milepost WP-65.

General Description: The Project consists of an approximately 18,600-foot long, 24-inch diameter high-density polyethylene (HDPE) pipeline that was origionally permitted to discharge up to 15,840,000 gallons per day (gpd) of mine dewatering groundwater to Gleason Creek at a maximum permitted rate of 11,000 gallons per minute (gpm). A request to increase the authorized discharge rate from 11,000 gpm to 15,000 gpm, and up to 21,600,000 gpd was proposed with the 2017 renewal and incorporated in the Permit issues on 26 January 2018. The groundwater is pumped from dewatering wells at the Permittee's Robinson Operation (Water Pollution Control Permit NEV0092105), and the excess water, water not used for approved consumptive uses, is discharged into the Gleason Creek stream bed. The discharge will combine with other natural source contributions, if any, including storm run-off, and flow along Gleason Creek into the City of Ely storm-drain system that empties into the Steptoe Valley.

B. Description of Discharge

General: Operations at the Permittee's Robinson Operation (NEV0092105) require dewatering of groundwater within the mining areas, particularly in the area south of the Ruth Pit. The dewatering water is routinely used in mining and milling

operations. The flexibility to discharge excess dewatering water to Gleason Creek is necessary due to seasonal conditions, such as winter months when loss of process water to evaporation from the tailings impoundment, process and storage ponds, and from dust control activities is reduced; when the mill is down for routine maintenance or repair; or when operational changes require less make-up water. The original application for new Authorization to Discharge NEV2010111 (Permit) was submitted to the Nevada Division of Environmental Protection (Division), Bureau of Water Pollution Control in November 2010 and transferred to the Division's Bureau of Mining Regulation and Reclamation in June 2011. The new Permit was issued on 01 March 2012 and became effective 16 March 2012. The facility was constructed and the first discharge occurred on 29 March 2012. The as-built drawings and quality control report were accepted by the Division on 17 October 2012, after required revision, and the operating plans were accepted on 23 April 2013. The discharge then ceased temporarily for over two years beginning on 18 April 2013.

The discharge must be managed to address weather events that could generate run-off contributing to Gleason Creek flow. The discharge must cease if there is a potential to exceed one-half of the maximum design flow the City of Ely (COE) storm-drain system can contain as currently constructed. The COE storm-drain system is designed to contain the peak flow from the 10-year, 24-hour storm event, which is equivalent to a Gleason Creek flow of approximately 180 cubic feet per second (cfs) (81,000 gpm). The water level corresponding to the resultant 90 cfs (40,500 gpm) maximum Gleason Creek flow limit for operation of the discharge is permanently marked on the side of the downgradient US Highway 50 concrete box culvert to provide a visual reference for rapid verification of conditions during high flow events.

The Permittee has also entered into separate Memoranda of Understanding with the COE, the Nevada Northern Railway (NNR), and the Nevada Department of Transportation (NDOT). The memoranda are specific, as applicable, to each entity with regard to impact fees, communication protocols, insurance coverage, et cetera, but all contain a similar Emergency Action Plan for implementation in the event of a hazardous or toxic material spill or a localized severe storm event. These documents are wholly separate from the Permit.

Gleason Creek Discharge Pipeline Design

The Gleason Creek Discharge Pipeline is constructed of 24-inch diameter, standard dimension ratio (SDR) 17 and SDR 11, HDPE pipe. The pipeline is designed for a maximum discharge flow rate of 15,000 gpm and has a nominal discharge flow rate of 3,500 to 4,000 gpm. The Permit limits the total daily discharge to 21,600,000 gpd. The constructed pipeline originally measured approximately 17,150 lineal feet long from the tie-in to the 30-inch diameter HDPE Ruth Pit Dewatering Pipeline to the point of discharge at the energy dissipater apron on Gleason Creek. The tie-in

location was moved and the Gleason Creek Discharge Pipeline was realigned slightly with a new overall length of 18,600 lineal feet as a result of a Permit modification approved by the Division in November of 2015. The tie-in location and pipeline realignment construction was completed in 2015 and 2016, as documented in the 12 September 2016 record of construction report. The Ruth Pit Dewatering Pipeline is used to convey dewatering water that meets Profile I reference values from dewatering wells for the Ruth Pit to the Mill Water Ponds for use as make-up water in the Robinson Mill.

The discharge pipeline design minimizes alignment over potentially acid generating (PAG) waste rock facilities and the approved pipeline routing will prevent flow over, ponding above, or impounding behind PAG waste rock in the event of a pipeline break. The pipeline alignment also avoids abrupt elevation changes and minimizes the head pressure generated by the approximately 600-foot elevation drop along the constructed alignment while creating a partially-full pipe flow regime with sufficient flow velocity to prevent freezing when lower flows are conveyed during winter conditions. The design alignment includes sufficient gradient to eliminate low points and associated pipeline draining and freezing issues.

Groundwater for consumption and/or discharge was pumped originally from one or more of the following six dewatering wells: RW-2P, RW-3P, RW-4P, RW-5P, RW-8P, and RW-9P. The realignment of the Gleason Creek Pipeline around the south side of the Ruth Pit and the addition of a new dewatering well, RW-33P, was approved by the Division in November of 2015. A Non-Fee review was approved by the Division, in September 2016, for the connection of the newly constructed dewatering well, RW-33P, to the re-aligned Gleason Creek Pipeline. Two non-fee reviews were approved by the Division in November and December of 2017 for the addition of dewatering wells RW-36P and RW-35P to the Gleason Creek Pipeline. Two additional non-fee reviews were approved by the Division in January and September of 2019 for the inclusion of dewatering wells RW-37P and RW-39P to the pipeline.

Current dewatering wells consist of RW-2P, RW-3P, RW-8P, RW-33P, RW-35P, RW-36P, RW-37P, and RW-39P. Dewatering water is conveyed from the wells through existing 14-inch diameter HDPE pipelines to the Ruth Pit Dewatering Pipeline. The tie-in of the Gleason Creek Discharge Pipeline to the Ruth Pit Dewatering Pipeline is equipped with valves to direct flow from individual or multiple wells to either the mill or to the discharge pipeline. Air vents are placed at local high points along the pipeline to equalize pressure.

The tie-in is equipped with a flow meter and a 10-inch diameter drain valve. The drain valve is to be sealed with a blind flange to minimize the potential for an unintentional discharge and will be opened only in the event of pipeline

maintenance requiring evacuation of the adjacent 1600-foot-long upgradient run of the discharge pipeline. Drained water is directed to flow back into the Ruth Pit.

From the high point of the newly aligned discharge pipeline alignment, located approximately 1600 feet east of the tie-in to the Ruth Pit Dewatering Pipeline, the pipeline alignment is graded to gravity drain the pipeline and the corridor easterly to the outlet at the Energy Dissipater Apron on Gleason Creek. West from the high point, the pipeline and the corridor drain toward the dewatering wells and into the Ruth Pit. With the 2015 modification, the tie-in to the Ruth Pit Dewatering Pipeline was re-located approximately 1,600 feet east of the tie-in point, to accommodate the expansion of the Ruth Pit.

The pipeline corridor averages 12 feet wide and is constructed with a minimum 2-foot high compacted safety and containment berm with a 2-foot wide crest that also serves as a light vehicle access road. The corridor is routed over a portion of the Jupiter Waste Rock Dump, along the Wedge Pit Buttress, along the existing road cut that traverses the drainage within which the Jupiter Seep is located, past the east end of the Lane City Dump, across Gleason Creek, and then along the north bank of the creek to the discharge apron. In areas where the pipeline alignment crosses PAG waste rock, the base of the corridor is covered with a minimum 2-foot thickness of non-PAG material. Where the pipeline crosses Gleason Creek, the access road and corridor is constructed over corrugated steel culverts designed to convey creek flow.

Dewatering Water Chemistry

Discharge water quality at the Gleason Creek Pipeline outfall (Outfall 001) is required to meet all surface water quality standards (SWQS) that apply to Gleason Creek at Murray Creek per Nevada Administrative Code (NAC) 445A.1236 and NAC 445A.2032. Based on the chemistry displayed in the 2021 Permit renewal and reported in quarterly and annual monitoring reports, the discharge water meets all surface water quality standards.

Energy Dissipation and Storm Event Monitoring

The Energy Dissipater Apron was constructed at the pipeline outlet located at a point on the north side of Gleason Creek tangential to the axis of the streambed. The apron is a wedge shape in plan, measuring approximately 36 feet long and ranging in width from 6 feet at the pipeline discharge point to 20 feet where the apron will discharge to the creek. The apron was excavated to a depth of at least 1.5 feet within the wedge footprint and extends at least 5 feet upgradient beneath the end of the pipeline; the subgrade was scarified to a depth of 12 inches and re-compacted to at least 90% maximum dry density (American Society for Testing and Materials (ASTM) Method D1557) at ± 2% optimum moisture content; the prepared subgrade was covered with a layer of 8-ounce per square yard geotextile;

and the apron excavation was filled with riprap having an average diameter (D_{50}) of 8 inches for erosion control.

A request to increase the authorized discharge rate from 11,000 gpm to 15,000 gpm, not to exceed a maximum discharge rate 21,600,000 gpd, was proposed with the 2017 renewal application. Hydraulic calculations were performed to evaluate if the originally constructed apron would be adequate to handle and pass the increased flow rate. The calculations proved that the current apron design would be adequate to handle and pass the increased flow rate.

Prior to reaching the COE storm-drain system, the discharge flow passes through two previously existing concrete box culverts. The first box culvert, located approximately 1,500 feet downstream of the discharge location, is a 3.5-foot high by 8.5-foot wide concrete box culvert that is fitted with two 48-inch diameter corrugated steel culverts to convey creek flow under the NNR railroad grade. At the authorized maximum pipeline discharge rate of 15,000 gpm, open channel flow through the NNR culvert is calculated to reach a maximum depth of 0.5 feet and a flow velocity of 6.5 feet per second (fps). A newer constructed upstream concrete headwall redirects flow at almost 90 degrees into the paired steel culverts and reduces adverse impacts to the NNR culvert. The second box culvert, located approximately 2,800 feet downstream of the discharge location, is a 7-foot high by 10-foot wide concrete box culvert constructed by NDOT to convey creek flow under US Highway 50. At the maximum discharge rate, open channel flow through the Highway 50 box culvert is calculated to reach a maximum depth of 0.4 feet and a flow velocity of 0.6 fps. Both culverts are routinely inspected by the Permittee and any needed maintenance or upgrade activities are coordinated with the respective entity.

C. Proposed Determination

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

D. Receiving Water Characteristics

The source of the discharge is groundwater that meets Profile I reference values for groundwater quality. The discharge outfall is on the reach of Gleason Creek identified as "Gleason Creek at Murry Creek" (the section from State Highway 485 [old State Highway 44] to Murry Creek) at NAC 445A.2032. Beneficial uses designated for this reach are livestock, irrigation, aquatic, noncontact, industrial, and wildlife. In recent years, stream flow in this reach of Gleason Creek has been observed only in response to storm events or when the authorized discharge is occurring. Regardless of whether Gleason Creek is otherwise flowing or not, the discharge water quality must meet the Discharge Limits specified in the Permit, which are based on surface water standards at NAC 445A.2032, the surface water standards for toxic materials at NAC 445A.1236 that apply to the beneficial uses

designated for this reach, and the qualitative surface water standards at NAC 445A.121.

Because Gleason Creek experiences intermittent flow, primarily in response to major storm events, the Permittee must monitor weather conditions and appropriately manage or cease the authorized discharge to minimize the potential for excessive channel erosion or damage to downstream drainage control structures.

In order to minimize the potential to generate acid or to mobilize constituents from materials in the creek channel, acid-base accounting and Meteoric Water Mobility Procedure (MWMP)-Profile I analyses were performed to characterize a group of sediment samples composited from six contiguous 300-foot long contiguous channel segments along the creek, downgradient from the uppermost proposed discharge location. Based on the sample results, a discharge location downgradient of any reactive channel sediment was selected. Therefore, acid generation, mobilization of constituents, or other adverse effects of the discharge are not anticipated and waters of the State will not be degraded.

E. Proposed Effluent Limitations, Schedule of Compliance, Monitoring, Special Conditions

See Section I of the Permit.

F. Rationale for Permit Requirements

The discharge water is groundwater of good quality. In recent years, this reach of Gleason Creek has been observed to flow only in response to severe storm event run-off and when the authorized discharge is occurring. The discharge location was selected to avoid acid generation and mobilization of constituents from materials in the creek channel. Therefore, degradation of Waters of the State is not anticipated. Routine analyses of the discharge water quality will be performed and the discharge and will comply with Discharge Limits based on surface water standards established at NAC 445A.121, 445A.1236, and 445A.2032. Specific monitoring requirements can be found in the Permit.

G. Procedures for Public Comment

The Notice of the Division's intent to issue a Permit authorizing the discharge, subject to the conditions within the Permit, is being published on the Division website: https://ndep.nv.gov/posts/category/land. 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 the public notice is posted to the Division website. 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. The public hearing must be conducted in accordance with Nevada Revised Statutes (NRS) Chapter 233B, unless waived by the applicant.

H. Federal Migratory Bird Treaty Act

Under the Federal Migratory Bird Treaty Act, 16 U.S. Code 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 Code of Federal Regulations 10, 15 April 1985) includes nearly every bird species found in the State of Nevada. The U.S. Fish and Wildlife Service (the Service) is authorized to enforce the prevention of migratory bird mortalities at ponds. 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 (e.g., by 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.

Modified by: Matthew Schulenberg
Date: 25 January 2023

Revision 00: Permit effective **11 February 2023.**