

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2014-0108

WASTE DISCHARGE REQUIREMENTS
FOR

LAMPLIGHT, INC.
MAYBELLE TIMM ELEY
TIMM M TESTAMENTARY TRUST
UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE
UNITED STATES DEPARTMENT OF INTERIOR, BUREAU OF LAND MANAGEMENT

TIMM MINE

EL DORADO COUNTY

The California Regional Water Control Board, Central Valley Region ("Central Valley Water Board" or "Board") under the authority of the California Water Code and Title 27 of the California Code of Regulations ("Title 27") finds that:

1. Maybelle Timm Eley is the owner of the Timm Mine and Lamplight, Inc. is the current operator. The facility is a mining claim in El Dorado County located on private land owned jointly by Maybelle Timm Eley and the Timm M Testamentary Trust, and also on public lands owned by the United States Government.
2. The facility is located approximately 1.5 miles east of Spanish Flat along Traverse Creek (latitude 38.81942°N, longitude 120.78294°W) in Township 11 North, Range 11 East, Sections 7 and 8, Mount Diablo Base and Meridian (see Attachment A, which is incorporated herein and made part of this Order by reference). The facility covers approximately 3 acres of surface area and the elevation at the facility ranges from about 1,450 to 2,550 feet above mean sea level.
3. The landowners upon which the facility is located are Maybelle Timm Eley and Timm M Testamentary Trust, jointly named on county Assessor Parcel Numbers (APNs) 084-011-24-100 and 084-011-25-100, and the United States Department of Agriculture, Forest Service (Forest Service) on APN 084-011-60-100 and United States Department of Interior, Bureau of Land Management (BLM) on APN 084-011-05-100. Attachment B, which is incorporated herein and made part of this Order by reference, includes a listing of APNs and ownership.
4. The operator, the mine owner, and the land owners are legally responsible as the Dischargers at the Timm Mine. However, Maybelle Timm Eley and Lamplight, Inc. are the active mine claimants and operators and therefore have primary responsibility for compliance with these waste discharge requirements (WDRs), including day-to-day operations, monitoring, closure and post closure maintenance, and associated financial assurances. The Forest Service and the BLM are the administrators of the public lands where discharge of waste occurs or has occurred, and as passive participants are ultimately responsible for ensuring compliance with these WDRs for waste discharged upon their property and therefore are also named as co-Dischargers. Enforcement actions will be taken against the Forest Service and BLM (landowners) only in the event that enforcement actions against Maybelle Timm Eley (mine owner) and Lamplight, Inc (mine operator) are ineffective or would be futile, or that enforcement is necessary to protect public health or the

environment. In addition, since the Forest Service and the BLM are public agencies, enforcement actions will be taken against them only after they are given the opportunity to use their governmental powers promptly to remedy the waste discharge. Therefore, for the purposes of these WDRs for the activities permitted, unless otherwise noted, the term "Discharger" refers to Maybelle Timm Eley and Lamplight, Inc.

5. The Timm Mine consists of a series of interconnected mining claims that have intermittently operated since the 1880's. The Timm Mine consolidates mining claims previously known individually as the Atlanta, Round Hill#1 and #2, and Yellow Jacket claims.
6. The Central Valley Water Board initially issued WDRs Order 76-193 on 27 August 1976 regulating the discharge of waste from the Alhambra-Atlanta Gold Mine (hereafter included as part of the facility or Site). WDRs prohibited the direct discharge of wastes to surface waters and specified amongst other requirements that the discharge of waste to land shall remain in designated areas such as a tailings pond and not cause degradation of any water supply.
7. Mining operations under WDR Order 76-193 ceased in 1980. On 19 October 1990, the Discharger submitted a report of waste discharge (ROWD) notifying Board staff of its intention to reactivate the existing mines and mill facilities.
8. On 22 February 1991, Central Valley Water Board issued WDRs Order 91-065 revising previous WDRs Order 76-193 to include amongst other requirements additional prohibitions and discharge specifications. These revisions included the prohibition of use of chemicals in the gold extraction process as well as specified a limitation to the amount of tailings that could accumulate in the tailings settling/holding ponds prior to incorporation back into the mine workings.
9. Monitoring reports submitted under WDRs Order 91-065 indicate that Timm Mine was operational from 1991 through 1995 and the mining was performed by the Thompson Yellow Jacket Mining Company (Thompson Mining Company). During that period approximately 6,800 tons of waste rock was produced, 140 tons of gold bearing ore was produced, and 130 tons of tailings were disposed of in a tailings pond on Forest Service land.
10. Findings in WDRs Order 91-065 identified that approximately 20,000 tons of tailings material was deposited on Forest Service land by previous operators of the mine in a tailings pond. This tailings pond is located directly across Traverse Creek from the mill and was stable during flood events in 1986. In a copy of the 4 October 2011 State Mining and Geology Board SMARA Inspection Report, the tailings pond was identified as being covered with extensive vegetation and no mention of erosion or instability was identified.
11. In 1996, a letter from the mine owner indicated that the mine suspended operations due to a legal dispute between a lessee AKT Mining Corporation and its lessor Timm Trusts. Monitoring reports submitted under WDRs Order 91-065 indicate that Timm Mine was non-operational from 1996 through October 2011.
12. On 13 March 1997, due to inactivity at Timm Mine, the Central Valley Water Board revised the Monitoring and Reporting Program (MRP) No. 91-065 to reduce the monitoring and reporting frequency. The revision stipulated that once the mine anticipated commencement of mining activities, the MRP would be revisited to reestablish an appropriate MRP that would continue to

protect water quality. These revised WDRs incorporate changes to the MRP appropriate for active mining operations at Timm Mine.

13. In February 2007, the State Mining and Geology Board notified Timm Mine (CA Mine ID# 91-09-0006) that it approved the renewal of its current Interim Management Plan (IMP) for idle mine status for a period of five years. The IMP for Timm Mine would expire on 15 November 2011.
14. On 30 October 2011, Timm Mine notified the State Mining and Geology Board that it would begin active operation by 15 November 2011. On 1 November 2011 Board staff requested that the Discharger submit a ROWD if it were considering initiating operations. The ROWD was required to revise the WDRs to reflect current conditions at the facility and to establish revised discharge and monitoring specifications based on planned operations.
15. On 15 February 2012, Central Valley Water Board staff conducted a facility inspection where samples were taken from waste rock and mine portal discharge in order to characterize mining waste and establish potential threats to water quality. The results of waste characterization found arsenic above the Department of Public Health (DPH) primary Maximum Contaminant Level (MCL) of 10 µg/L in the mine portal discharge as well as in the leaching potential of the waste rock. The results of the inspection were conveyed to the Discharger in an inspection report dated 11 June 2012. The results are further discussed in Findings 41 through 44.
16. On 9 August 2012, a meeting was held with the Discharger and Forest Service at the Board's offices to discuss the WDRs permitting process and the Discharger's responsibility to protect water resources from Constituents of Concern (COCs) such as arsenic. The Discharger was reminded of its obligation to submit a ROWD with associated attachments, reports, etc.
17. On 30 January 2013, the Discharger submitted a ROWD for the Site. However, the ROWD was incomplete because it failed to include the items listed in Provisions E.5. These WDRs in Provisions E.5 require the Discharger to submit the necessary attachments, reports, etc. to ensure that the Discharger's operations are in compliance with the Water Code and Title 27 regulations associated with mining operations and final disposition of mining waste.
18. On 2 December 2013, the Discharger was issued a Notice of Violation (NOV) for failure to submit six quarterly monitoring reports required by the MRP for the period beginning 2nd quarter 2012 through the 3rd quarter 2013.
19. The purpose of issuing these WDRs is to revise WDRs 91-065 which do not reflect current conditions at the facility as well as establish revised discharge and monitoring specifications that will ensure that the Discharger is in compliance with all applicable laws and regulations related to the protection of beneficial uses of waters of the state.

SITE DESCRIPTION

20. The facility contains an existing hard rock gold mining operation regulated by the Central Valley Water Board under the authority of the Water Code and Title 27. WDRs have been previously issued for the facility on 27 August 1976 (WDR Order No. 76-193) and more recently on 22 February 1991 (WDR Order No. 91-065).

FOREST SERVICE REQUIREMENTS

21. Portions of the facility are on public lands open to mineral acquisition under the General Mining Law of 1872. Locatable metallic minerals include gold, lead, zinc, nickel, etc. Historical documents indicate that mining operations have occurred in the area since at least the early 1880's. The primary commodity being mined is gold. No use of chemicals including cyanide or mercury is proposed for gold extraction.
22. Authorization to enter National Forests for mineral development is provided by 16 U.S.C. 478. Mining at the facility has been authorized under the Mining Laws governing locatable minerals on the Georgetown Ranger District, El Dorado National Forest, under 36 CFR 228A.
23. The Forest Service requires a Plan of Operations (Ops Plan) from mining operators when mining activity is likely to cause a significant disturbance of surface resources, including surface waters. An Ops Plan must be approved prior to the start of any work and must incorporate applicable best management practices (BMPs) for the protection of water-related beneficial uses and the control of discharges associated with mining activities.
24. The Forest Service also requires that all new Ops Plans for mining operations on National Forest System lands comply with the Federal Water Pollution Control Act of 1972 (Clean Water Act or CWA), 33 U.S.C §§ 1251-1387 and the Porter-Cologne Water Quality Control Act, Chapter 4, Article 4 section 13260 (a)(1). Where prospecting or mining related actions discharge, or have the potential to discharge waste(s) into waters of the state, the operator is required by state law to file a ROWD with the appropriate Regional Board. Such filing can result in the issuance of waste discharge requirements (WDRs) to the operator by the Board. The WDRs become a mandatory provision of the Ops Plan for mining activity, which is approved and administered by the Forest Service.
25. A copy of the most recent Forest Service Ops Plan dated 11 December 2009 was provided to Board staff on 9 August 2013. The current Ops Plan describes the use of settling pond(s) which are in violation of Prohibition A.4 of this Order. This Order requires the Discharger in Provisions E.5.a to provide the Central Valley Water Board with a copy of a revised Forest Service Ops Plan that is consistent with these WDRs as the Ops Plan pertains to the protection of ground and surface water quality.
26. The Forest Service also requires a Reclamation Plan under the requirements of the California Surface Mining and Reclamation Act of 1972 (SMARA). SMARA applies to any mining or exploration proposal that equals or exceeds 1,000 cubic yards of material removed, or creates more than 1 acre of surface disturbance, over the expected life of the mine.
27. Through a Memorandum of Understanding between the Forest Service and the California Department of Conservation, SMARA plans are developed through the State Mining and Geology Board (SMGB). California Environmental Quality Act (CEQA) compliance is met by El Dorado County, the lead agency completing an environmental review of the project and approving the Reclamation Plan. Since the county approved the Reclamation Plan in 1998 the SMGB has assumed the role of lead agency for the purposes of SMARA.

28. Title 27 section 22510 requires that WDRs incorporate the relevant provisions of an approved Mining and Reclamation Plan (see California Surface Mining and Reclamation Act, Pub. Resources Code, § 2770, et seq.), and prescribe additional conditions as necessary to prevent water quality degradation, and ensure that there will be no significant increase in the concentration of indicator parameters or waste constituents in ground or surface water. These WDRs include additional requirements in Discharge Specifications B.13 through B.23 to the SMARA Reclamation Plan that the Discharger must comply with during closure and post closure activities and financial assurances associated with treating/controlling discharges of Group B mining waste COCs such as but limited to mine portal discharges.

GEOLOGY

29. Based on the Geologic Map of the Georgetown Quadrangle, California (Department of Conservation, Division of Mines and Geology (DMG) 1983), the facility is located along the eastern branch of the Melones Fault Zone. Site geology is mapped as being Paleozoic metasedimentary rocks of the Calaveras Complex, and Mesozoic metamorphic rocks, which are identified locally as slate and schist.
30. The Timm Mine is located in the Mother Lode gold belt, a 120-mile-long system of linked or en echelon gold-quartz veins and mineralized schist and greenstone that extends from the town of Mariposa, north and northwest to northern El Dorado County along the Melones Fault Zone. The rocks of this belt are typically metavolcanic, metasedimentary, and ultramafic, some of which have been hydrothermally altered.
31. The Fault Activity Map of California and Adjacent Areas, California (CDMG, 1994) indicates that the Timm Mine is adjacent to the eastern branch of the Melones Fault Zone. This fault is described as pre-Quaternary, having no recognized displacement within the last 1.6 million years.

LAND USE

32. Land within one mile of the perimeter of the facility is both publicly (BLM and Forest Service) and privately held. The Discharger did not provide sufficient information on domestic water supply wells, private residences, crops, or livestock that are present within one mile of the perimeter of the facility. The Discharger did not provide any information on land use in their ROWD as required by Title 27 section 21750(h). Therefore, information not provided by the Discharger on land use within one mile of the perimeter of the facility that is necessary to ensure protection of beneficial uses of water resources is requested in Provisions E.5.b.

PRECIPITATION

33. Mean annual rainfall for the period of record was from 1913 to 2012 was interpolated at the mine portal location to be 38.7 inches based on calculations made by Oregon State University's PRISM Climate Group interactive software program. The minimum and maximum annual rainfall over the past 100 years was determined to be approximately 13.3 to 73.8 inches respectively.
34. The anticipated 100-year, 24-hour precipitation for the facility is 7.37 inches, and the 100-year precipitation intensity is 1.23 inches per hour based on estimates by the National Oceanic and

Atmospheric Administration (NOAA) Atlas 14, Precipitation-Frequency Atlas of the United States, Volume 6, Version 2.3, Silver Spring, Maryland, 2011, Revised 2014.

WASTE CHARACTERIZATION

35. Title 27 section 20164 defines mining waste as “*all waste materials (solid, semi solid, and liquid) from the mining and processing of ores and minerals including soil, waste rock, and other forms of overburden as well as tailings, slag, and other processed mining wastes.*”
36. Board staff sampled existing mining waste at the facility on 14 February 2012 to determine if the facility was susceptible to acid mine drainage. Based on the results of acid base accounting of the solid mining waste, the mining waste was determined to have an acid neutralizing potential (pH of 8.62 and ratio of acid neutralizing potential (ANP) to acid generating potential (AGP) of 7.88). An ANP/AGP ratio of greater than 3 is considered as classifying a facility as having a low potential for acid mine drainage. The results determined that precipitation (rainwater simulated by de-ionized water) should be considered as the extraction solvent to be used in any Waste Extraction Test (WET) for determining the mobilization of COCs from the facility to receiving waters (ground and surface waters).
37. The mining waste characterization conducted by the Discharger identified two main types of mining waste that will be generated from the operation. The two sources of waste bear distinct differences in laboratory test results; visual identification and where it was mined underground.
38. The first type of mining waste generated from mining operations is development rock (non-mineralized material) and accounts for approximately 90% of the waste generation. The Discharger characterized the development rock through a modified Waste Extraction Test (WET) e.g. using de-ionized water as the extraction solvent. The modified WET identified concentrations of dissolved zinc at 110 micrograms per liter ($\mu\text{g/L}$) and dissolved arsenic at 8.1 $\mu\text{g/L}$ as COCs. The Water Quality Criteria (WQC) for zinc for protection of aquatic life in surface waters is dependent on receiving water hardness. This Order requires the Discharger to monitor for arsenic, zinc and other COCs in Traverse Creek to ensure that the Discharger has complied with Prohibitions A.1 of this Order (e.g., the direct or indirect discharge of mining waste to surface water or surface water drainage courses is prohibited).
39. The development rock is transported in 1-ton side dump ore cars to an elevated dump station. Development material will average 8-10 tons per day, 2-3 times a week, with an estimated 1,000 tons/year. The Discharger proposes that development rock mining waste will be reclaimed and utilized as road base and pad material.
40. Based on the results of the waste characterization of the development rock performed by the Discharger, the development waste rock is classified as Group C mine waste as defined in Title 27, section 22480. This Order requires the Discharger to continue to monitor and characterize the development rock to ensure that it remains Group C mining waste for the purposes of reclamation as road base and pad material at the facility.
41. The second type of material generated, approximately 10%, is mineralized rock and contains COCs based on previous tests conducted. Board staff also sampled the mineralized rock on 25 April 2012 and performed a WET analysis using de-ionized water as the extraction solvent. The

results showed the mineralized rock containing COCs of dissolved arsenic of 277 µg/L which exceeds the primary MCL of 10 µg/L for drinking water standards.

Furthermore, leachate from a mineralized rock waste pile was sampled on 14 February 2012 and analyzed for CAM-17 metals. The analytical results shown below exceed the water quality objectives/water quality criteria (WQO/WQC) for protection of the designated beneficial uses for the receiving water (Traverse Creek):

COC	Analytical Results	WQO/WQC	Beneficial Use
Arsenic, total	183 µg/L	10 µg/L	Drinking Water Standard- primary MCL
Copper ¹ , total	17.7 µg/L	4.3 µg/L	continuous protection of freshwater habitat for aquatic life
Lead ¹ , total	35 µg/L	1 µg/L	continuous protection of freshwater habitat for aquatic life
Nickel ¹ , total	89 µg/L	24 µg/L	continuous protection of freshwater habitat for aquatic life
Zinc ¹ , total	254 µg/L	55 µg/L	continuous protection of freshwater habitat for aquatic life

Therefore, mineralized rock will be stored in a Waste Management Unit (WMU) or underground in a dry environment. Mineralized rock that was previously placed outside of a WMU or underground will be mitigated as required in Provisions E.5.c of this Order.

42. Furthermore, the analytical results of waste characterization performed by the Discharger on the mineralized rock classified the mineralized rock as Group B mine waste as defined in Title 27 section 22480. This Order requires the Discharger to fully contain Group B mining waste in a WMU or underground within the mine in dry designated areas.
43. The Discharger will also produce mining waste in the form of mill tailings and process water from the milling operations as described in Finding 55. The Discharger proposes to handle the tailings and process water as Group B mining waste as defined in Title 27 section 22480. Tailings will be stored in a WMU and will be mixed with cement slurry and pumped back into an abandoned underground designated work area within the mine.
44. On 14 February 2012 and 25 April 2012, Board staff sampled the portal discharge and the laboratory results reported total arsenic of 15.4 µg/L and 17.8 µg/L respectively. Both samples exceeded the primary MCL of 10 µg/L for drinking water standards. Furthermore, concentrations of total lead¹ in one of the samples was 5.3 µg/L which exceeded 1 µg/L, the WQO/WQC for

¹ Water Quality Criteria for copper, lead, nickel, and zinc are based on receiving water hardness. A receiving water hardness of 40 mg/L as CaCO₃ was used based on receiving water quality documented at Placerville WWTP. This Order requires the Discharger to establish site specific receiving water hardness in Traverse Creek as specified in Provisions E.5.d of this Order.

protection of the beneficial use of freshwater habitat for aquatic life. Based on results of waste characterization of the portal discharge, the portal discharge is classified as Group B mine waste as defined in Title 27, section 22480.

POTENTIAL IMPAIRMENT OF GROUND AND SURFACE WATER

45. The Central Valley Water Board has adopted the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition, revised October 2011 (the "Basin Plan") that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives. The Basin Plan, beginning at page II-2.00, states that the "...beneficial uses of any specifically identified water body generally apply to its tributary streams." The Basin Plan does not specifically identify beneficial uses for Traverse Creek, a tributary of Rock Creek, but does identify present and potential uses for the South Fork American River (Hydrologic Unit Number 514.3), to which Traverse Creek and Rock Creek are tributary. These beneficial uses of surface waters are as follows: municipal and domestic supply; hydropower generation; water contact recreation; non-contact water recreation, including aesthetic enjoyment; cold freshwater habitat; cold spawning, and wildlife habitat. For ground waters the Basin Plan states that "*Unless otherwise designated by the Regional Water Board, all ground waters in the Region are considered as suitable or potentially suitable, at a minimum, for municipal and domestic water supply (MUN), agricultural supply (AGR), industrial service supply (IND), and industrial process supply (PRO).*"
46. The Timm Mine discharges an annual average of 1 to 4 gpm from its portal into a 500 gallon holding tank/pump system, which is designed to pump mine effluent to an above ground 6,000 gallon water storage tank. Based on reported storage capacity the Discharger is capable of storing approximately two days of mine effluent. The Discharger currently recycles mine effluent back underground for use in its mining operation. The Discharger also uses the mine effluent for dust control and facility irrigation.
47. WDRs 91-065 required annual monitoring of the Timm Mine portal discharge for California Administrative Manual (CAM) 17 metals. Historical monitoring from 1994 through 2011 of the portal discharge consistently reported non-detection of most metals. However, based on Board staff sampling of the portal discharge (See Finding 44), the portal discharge was characterized as Group B mining waste which if not treated or controlled has the potential to cause degradation/impairment of ground and/or surface waters.
48. Further investigation by Board staff of annual monitoring reports for CAM-17 metals reporting of the portal discharge determined that the Discharger used inappropriate method detection limits (MDLs) and reporting limits (RLs) for determining whether a COC was present in the portal discharge. The Discharger did not use appropriate MDLs and RLs that could establish whether the portal discharge was a potential threat to the existing beneficial use of freshwater habitat for aquatic life in Traverse Creek. This revised Order requires the Discharger to use appropriate MDLs and RLs in its Monitoring and Reporting Program (MRP) R5-2014-0108 that are protective of existing beneficial uses for ground and surface waters.
49. WDRs 91-065 prohibited the direct discharge of wastes to surface waters or surface water drainage courses. Since 1997, the Discharger has monitored upstream and downstream water quality in Traverse Creek annually in the month of December or January for total lead and total

arsenic. The results predominantly have been reported as non-detect of COCs. Furthermore, the Discharger used the appropriate MDLs and RLs that are protective of the beneficial use of freshwater habitat for aquatic life in Traverse Creek. However, in order to protect the existing beneficial use of cold water spawning for aquatic life (trout-*Oncorhynchus mykiss*) which typically occurs from spring to early summer this Order requires the Discharger to sample for COCs during that period. The surface water monitoring is required ensure that any indirect discharges of leachate from mining waste to Traverse Creek has not occurred during the period when early life stages of trout exists where they are most susceptible to COCs from mining waste.

50. WDRs 91-065 did not require ground water monitoring due to geological analysis performed at the time which designated the waste as Group C mining waste. Furthermore, due to the geology consisting typically of metavolcanic, metasedimentary, and ultramafic rock, ground water monitoring through installation of monitoring wells is found to be extremely difficult to certify as an effective detection monitoring system. This Order currently does not require a ground water monitoring system through installation of monitoring wells since this Order does not authorize the use of in-ground surface impoundments to contain Group B mining waste such as but not limited to, mining leachate, mine tailings, and mineralized ore as described in Findings 41 through 44. Such mining waste shall be contained as described under the Waste Management Unit Design section of this Order.
51. Pursuant to the conditions of the Order, no direct or indirect discharge of mining waste to surface water is permitted. During the rainy season, Group B mining waste must be contained in the designated waste management units. Operation during the rainy season requires the management of storm water runoff to avoid contact with Group B mining waste. Such avoidance includes but is not limited to diversion of runoff, installation of a cover system, and returning the Group B mining waste to dry areas in the underground mine workings, etc.
52. Title 27, section 22480(b)(3) defines Group C mining waste as "*wastes from which any discharge would be in compliance with the applicable water quality control plan, including water quality objectives other than turbidity.*" Therefore, erosion and sediment controls (such as straw mulch and fiber rolls) must be installed in and around the waste disposal area of Group "C" mining waste prior to storm events, and must be maintained throughout the rainy season to prevent exceedences of storm water quality objectives regulated under separate WDRs 97-03-DWQ Order, *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities* (NPDES General Permit CAS000001).

PROPOSED MINING OPERATION

53. Information in the ROWD dated 30 January 2013 and subsequent information provided by the Discharger as well as supporting documents has been used to develop these WDRs. The ROWD and supporting documents contain information related to facility characteristics, design, construction, operations, and closure of the facility. Missing information not provided by the Discharger necessary to ensure protection of water quality is requested in Provisions E.5.
54. All mining (development and production) is underground with access to the mine workings through the main portal. Except for an electric rail tramcar, all other mining equipment is powered by compressed air. Milling equipment, underground ventilation fan and tramcar charger is electrically powered from a dedicated 3-phase power line running to the mill building. All underground material

hauling utilizes a 24" gauge rail system powered by a 48 volt D.C. electric tramcar. Blast holes are drilled with a pneumatic percussion rotary drill using compressed air and water. Blast holes are drilled, loaded with explosives and shot. The explosives used in the bore holes are a combination of dynamite/emulsion and ANFO. This Order requires the Discharger to monitor surface receiving waters for COCs such as ammonium, nitrate, and fuel oil associated with explosives used at the facility.

55. The Discharger anticipates that milling will occur intermittently, one to two non-consecutive days per month, and less than 100 tons/year of material will be processed through the mill. The existing mill will be used on an intermitted basis. The milling process is a gravity separation system that does not use chemicals or reagent; target metals are recovered by material density differential using water and mechanical action. The mill system entails: ore storage and conveyance; crushing and grinding of ore; and, recovery of precious metals and metallic sulfides. The mill is electrically powered and housed in two buildings, the coarse ore/crusher building and the mill building. Mill ore is dumped into the coarse ore bin and fed into a jaw crusher at the bottom of the bin. A conveyor belt brings the crushed ore (3/4" minus) to the fine ore bin located at the top of the mill building. The ore is fed from the bottom of the fine ore bin by a feed belt that supplies a ball mill where water is added and grinds the material to 1/4 inch. The ground ore slurry flows across a Denver jig where gold is separated from the lighter materials by specific gravity. Material coarser than 60-mesh is augured back into the ball mill by a screw auger for further grinding. The minus-60 mesh material flows over a weir classifier to a 6 foot by 15 foot Wifley concentrating table where remaining gold/sulfides are collected off the end of the table. The lighter material is pumped through a cyclone to separate tailing materials and the process water is pumped back to the ball mill for reuse in the milling operation. Excess water from the mill circuit will be pumped to a separate, fully contained water storage area and recycled back to the mill circuit. All process water in the milling operation will be fully contained with zero potential for discharge to ground or surface water without prior treatment as described in Findings 61 through 64 and Discharge Specifications B.3 through B.5 of this Order. All tailings will be mixed with cement slurry and pumped back into dry abandoned underground work areas for solidification within the mine such that leaching potential from the solidified waste is eliminated.

ENGINEERED ALTERNATIVES TO PRESCRIPTIVE STANDARDS

56. Title 27, section 20080(b) allows the Central Valley Water Board to consider the approval of an engineered alternative to the prescriptive standard. In order to approve an engineered alternative in accordance with Title 27, section 20080(c)(1) and (2), the Discharger must demonstrate that the prescriptive design is unreasonably and unnecessarily burdensome and will cost substantially more than an alternative which will meet the criteria contained in Title 27, section 20080(b), or would be impractical and would not promote attainment of applicable performance standards. The Discharger must also demonstrate that the proposed engineered alternative is consistent with the performance goal addressed by the particular prescriptive standard, and provides protection against water quality impairment equivalent to the prescriptive standard in accordance with Title 27 section 20080(b)(2).
57. Title 27, section 22500(a) requires that Group B WMUs comply with monitoring provisions contained in sections 20385 through 20430 which amongst other things requires a detection monitoring system which typically includes ground water monitoring around in-ground WMUs for earliest detection of a release from the WMU.

58. Title 27, section 20380(e) allows for an engineered alternative for any of the prescriptive standards such as the requirement for a ground water monitoring system used for detection monitoring for a WMU so long as the engineered alternative meets the goals of the detection monitoring program articulated in Title 27, section 20420(b).
59. Board staff have considered the engineered alternative to installation of ground water monitoring wells as an effective detection monitoring system due to the Board's inability to certify that the use of ground water monitoring wells at the facility will comply with Title 27, section 20420(b) performance standards (See Finding 50), and therefore the Central Valley Water Board finds that the engineered alternative described below meets the goals of the detection monitoring program articulated in Title 27, section 20420(b):
 1. Group B mining waste in the form of liquid or in a solid form where moisture exists that exceeds the moisture holding capacity of the solid waste causing leachate formation shall be contained in above ground containment structures with a surrounding air gap such that a visual inspection can be conducted of the containment structure in order to determine if a release has occurred; and
 2. Group B mining waste in solid form where its moisture content does not exceed the holding capacity of the mining waste (no leachate production) shall be placed on pads that are designed, constructed, and maintained such that if the moisture holding capacity of the mining waste is exceeded by any means the WMU would provide the earliest detection and indication of a release.

WASTE MANAGEMENT UNIT DESIGN

60. Regulations set forth in Title 27, section 22490, which establish prescriptive standards for construction of Waste Management Units (WMU) are not applicable for Group C mining wastes. Group C mining wastes are wastes from which any discharge would be in compliance with the applicable water quality control plan, including water quality objectives other than turbidity. Therefore, the placement and disposal of development rock as described in Findings 38 through 40 is not subject to confinement as prescribed in Title 27 regulations except as those prescriptive and performance standards attributed to Group C mining waste. The reclamation of Group C mining waste shall occur in the areas shown on Attachment B. The specifications for storage, management, and reclamation of Group C mining waste are found in Discharge Specifications Section B of this Order.
61. The term WMU is preserved and is applicable for Group B mining wastes, of which as described in Findings 41 through 44, the mineralized rock, mill tailings, process water from milling operations, and portal discharge are classified as Group B mining waste and must be discharged accordingly.
62. Since these WDRs do not require ground water monitoring at this time any WMUs used to contain Group B mining waste in liquid form such as but not limited to process water from milling operations and portal discharge, or where the moisture holding capacity of the Group B mining waste has the potential to be exceeded such that free liquid may form at the base of the WMU, the WMU shall be designed, operated, and maintained such that it's containment structure can be readily inspected to determine if leakage has occurred from the containment structure. One

example of such provisions being met is by providing an air gap around the WMU such that the WMU can be visually inspected to determine if a leak has occurred.

63. Discharge of Group B mining waste in liquid form to land application areas is permitted provided this form of mining waste is treated such that any COCs present will not exceed water quality objectives nor create unauthorized degradation of receiving waters (both surface and ground waters). This Order requires the Discharger to develop and submit Water Quality Protection Standards (WQPS) for mining waste in liquid form prior to their discharge to land application areas as specified in Discharge Specifications B.5 that are protective of surface and groundwater beneficial uses.
64. WMUs used to contain Group B mining waste that will not contain moisture exceeding its moisture holding capacity shall be placed on pads designed, constructed, and maintained such that if the moisture holding capacity of the mining waste was exceeded by any means, precipitation or otherwise, the WMU would provide the earliest detection and indication of a release. Furthermore, the WMU shall be designed such that no additional moisture can be added to mining waste once it is placed in the WMU.

CLOSURE AND POST CLOSURE PERIOD FINANCIAL ASSURANCES

65. In providing financial assurances for WMUs per Title 27, section 22510(g) the Discharger may propose Alternative Financial Assurances and the Central Valley Water Board may accepted the proposal if the following applies:

“If a lead agency acting under the authority of §2774(a) of the Public Resources Code requires assurances of financial responsibility, these assurances can be used to fulfill all comparable requirements under Title 27 section 22510(f), provided that:

- (1) the RWQCB approves the assurance; and*
- (2) the RWQCB is named as alternate payee.”*

66. As of 30 April 2011, the Discharger has financial assurances for reclamation activities in the amount of \$12,874.00 for closure and post closure maintenance for a period of three (3) years of in the form of a Certificate of Deposit with the payees as the State Mining and Geology Board, the Department of Conservation, the BLM, and the U.S. Forest Service. The financial assurances primarily cover the costs of removing structures and equipment, re-grading the facility for slope stability and erosion control, re-vegetation, and three years of monitoring to ensure facility stabilization.
67. Central Valley Water Board staff shall periodically review the financial assurance and the Discharger shall update the financial assurance upon request by the Board. Board staff has reviewed the financial assurance with the payees listed in Finding 66 and finds that though it satisfies SMARA reclamation requirements required by other agencies, it does not address long term water quality impacts for continued portal discharge of Class B mining waste as well as disposal of up to 100 tons of Class B mining waste in the form of mineralized rock and mill tailings. This Order in Provisions E.5.e requires the Discharger to provide a closure and post closure maintenance plan and financial assurances that address these concerns.

CEQA AND OTHER CONSIDERATIONS

68. In connection with the approval of a SMARA reclamation plan in 1998, El Dorado County conducted a review of the mining activities pursuant to the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). The Discharger has not proposed any expansion of uses beyond those evaluated in the prior CEQA review. This Order places additional requirements on the continued operation of the facility in order to ensure the protection of waters of the state. The issuance of this Order is therefore exempt from the provisions of CEQA in accordance with California Code of Regulations, title 14, section 15301, which exempts the “operation, repair, maintenance, [and] permitting ... of existing public or private structures, facilities, mechanical equipment, or topographical features” from environmental review. This action may also be considered exempt because it is an action by a regulatory agency for the protection of natural resources (Cal. Code Regs., tit. 14, § 15307.) and an action by a regulatory agency for the protection of the environment (Cal. Code Regs., tit. 14, § 15308.).
69. This order implements:
- a. The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition; and
 - b. The prescriptive standards and performance goals of California Code of Regulations, title 27, section 20005 et seq.
70. Based on the threat and complexity of the discharge, the facility is determined to be classified, 2-C as defined below:
- a. Category 2 threat to water quality, defined as, “*Those discharges of waste that could impair the designated beneficial uses of the receiving water, cause short-term violations of water quality objectives, cause secondary drinking water standards to be violated, or cause a nuisance.*”
 - b. Category C complexity, defined as, “*Any discharger for which waste discharge requirements have been prescribed pursuant to Section 13263 or the Water Code not included in Category A or Category B as described above. Included are dischargers having no waste treatment systems or that must comply with best management practices, dischargers having passive treatment and disposal systems, or dischargers having waste storage systems with land disposal.*”
71. Water Code section 13267(b) provides that:
- In conducting an investigation specified in subdivision (a), the Regional Board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the Regional Board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports.

The technical reports required by this Order and the attached Monitoring and Reporting Program (MRP) R5-2014-0108 are necessary to assure compliance with these WDRs, and to assure that the discharges will comply with the Basin Plan. The Discharger owns and operates the facility, and is responsible for the discharges of waste at the facility subject to this Order and is, subject to requirements imposed pursuant to Water Code 13267.

PROCEDURAL REQUIREMENTS

72. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this facility for the discharges of waste to land stated herein.
73. The Central Valley Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for this discharge, and has provided them with an opportunity for public hearing and an opportunity to submit their written views and recommendations.
74. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED, pursuant to Water Code sections 13263 and 13267, that WDR Order 91-065 is rescinded except for purposes of enforcement, and that Maybelle Timm Eley (facility owner) and Lamplight Inc. (operator) and Maybelle Timm Eley, Timm M Testamentary Trust, U.S. Department of Agriculture, Forest Service, and U. S. Department of Interior, Bureau of Land Management (landowners), their agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The direct or indirect discharge of mining waste to surface water or surface water drainage courses is prohibited except as otherwise permitted in the Discharge Specifications of this Order.
2. The discharge of "hazardous waste" or "Group A" mining waste at the facility is prohibited. For the purposes of this Order, the terms "Group A", "Group B", and "Group C" mining wastes are as defined in Title 27, section 22480. The term "hazardous wastes" is defined in California Code of Regulations, title 22, section 66261.1 et seq.
3. The discharge of any waste other than mining wastes into a WMU is prohibited. Prohibited wastes may include, but are not limited to, oil, grease, solvents, other petroleum products, and toxic and hazardous materials.
4. The discharge of any mining waste classified as Group B mining waste to in-ground surface impoundments such as but not limited to storage tanks, tailings ponds, settling ponds, retention basins, and storage ponds is prohibited.
5. The accumulation of more than 100 tons of Group B mining waste in WMU(s) at the facility is prohibited.
6. The discharge of mining waste at the facility from sources other than the Timm Mine is prohibited.

7. The discharge of mining wastes outside a WMU is prohibited except as otherwise permitted under additional Central Valley Water Board orders.
8. The discharge of treated Group B mining waste in liquid form e.g. portal discharge or mill process water to land application areas is prohibited within 100 feet of the boundary of Traverse Creek's 100-year floodplain.
9. The Discharger shall comply with all General Provisions listed in Section III of the Standard Provisions and Reporting Requirements (SPRRs) dated February 2009 which are attached hereto and made part of this Order by reference.

B. DISCHARGE SPECIFICATIONS

GENERAL SPECIFICATIONS

1. All Group C mining waste placed as part of the proposed mining operation are to be placed in the areas shown in Attachment B and configured with slopes no steeper than 3:1, horizontal to vertical. The reclamation of Group C mining waste shall be performed in accordance with appropriate erosion and sediment control practices to reduce the chance of water quality impact associated with the mining operation. At closure, permanent erosion control measures, including vegetation and drainage routing, are to be established at all areas disturbed by the mining operation.
2. Developmental rock classified as Group C mining waste shall be periodically sampled per the Monitoring and Reporting Program (MRP) R5-2014-0108 schedule and analyzed for leaching potential to ensure that its characteristics continue to classify the developmental rock as Group C mining waste. If analysis indicates that the nature of the development rock has changed towards Group B mining waste classification, the development rock shall be reclassified and shall be subject to waste discharge requirements attributed to Group B mining waste specified in these WDRs. Any developmental rock previously placed as Group C mining waste but due to laboratory analysis is determined to be Group B mining waste shall be mitigated in accordance with Provisions 5.c.
3. Group B mining wastes shall only be discharged into a WMU as described in Findings 61 through 64.
4. A maximum of 100 tons of Group B mining waste will be allowed to accumulate in WMU(s). Disposal of Group B mining waste in the form of solid waste in order to comply with the 100 ton limit shall be performed by either offsite disposal at a regulated facility authorized to accept Group B mining waste or by mixing it with a cement slurry and pumping back into dry, abandoned underground work areas within Timm Mine for solidification. The Discharger shall provide necessary documentation to ensure that the placement of the mining waste within the mine will not cause a condition during the closure and post closure period of the mine where it will cause degradation of ground and surface waters.
5. Discharge of Group B mining waste in liquid form to land application areas is permitted provided this form of mining waste is treated such that any COCs present will not exceed water quality objectives nor create unauthorized degradation of receiving waters. Provisions E.5.h of this

Order requires the Discharger to develop and submit Water Quality Protection Standards (WQPS) for mining waste in liquid form prior to its discharge to land application areas that is protective of surface and groundwater beneficial uses. Interim WQPS are included in attached Monitoring and Reporting Program R5-2014-0108.

6. The Discharger shall promptly report slope changes such as movement caused by slumping or slipping, or unusual erosion.
7. The Discharger shall not cause a condition of pollution, contamination, or nuisance as defined by Water Code section 13050.
8. Precipitation and drainage controls shall be designed and constructed to accommodate the anticipated volume and precipitation and peak flows from surface runoff for one 10-year, 24-hour storm event as required by Title 27, subsection 22490(h)(1)(C).
9. The Discharger shall, in a timely manner, remove and relocate any wastes discharged at this facility in violation of this Order. If the Discharger is unable to remove and relocate the waste, the Discharger shall submit a report to the Central Valley Water Board explaining how the discharge occurred, why the waste cannot be removed, and any updates to the waste acceptance program necessary to prevent re-occurrence. If the waste is a hazardous waste, the Discharger shall immediately notify the Department of Toxic Substances Control.

PROTECTION FROM STORM EVENTS

10. For the WMU, and related excavation and grading operations, all precipitation and drainage control systems shall be designed, constructed, and maintained to protect the WMU from anticipated volume of precipitation and peak flows from surface run-off for a 10-year, 24-hour precipitation event.
11. Any storm water discharges from industrial activities such as gold mining to waters of the U.S. must obtain coverage under the State Water Resources Control Board Order 97-03-DWQ, *General Permit for Discharges of Storm Water Associated with Industrial Activities* (General Order). The Discharger was issued a notice of termination of coverage under the General Order on 12 November 2003. Therefore, the Discharger must again obtain coverage under the General Order. This Order in Provisions E.5.j requires the Discharger to provide Board staff proof of coverage under the General Order. Furthermore, the Discharger shall continue to maintain and comply with Order 97-03-DWQ, and any amendments thereto or any General Orders that may supersede 97-03-DWQ.
12. Annually, prior to the anticipated wet season but no later than 15 October of each year, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage controls shall be completed to prevent flooding, erosion, or slope failure.

CLOSURE AND POST CLOSURE MAINTENANCE PLAN

13. The Discharger has a Reclamation Plan (RP-98-02) approved by the county and related financial assurance approved by the SMGB, which currently has assumed the role of lead agency for the

purposes of SMARA. The Reclamation Plan addresses removal of structures and equipment, re-grading for slope stability, erosion control, re-vegetation, and three years of monitoring.

14. Although the Reclamation Plan addresses minimizing water quality impacts typically associated with Group C mining wastes these WDRs do not find the Reclamation Plan and related financial assurance as functionally equivalent to Closure and Post Closure Maintenance of WMUs and Closure and Post Closure Funding required by Title 27, subsections 22510 (b), (c) and (f). Reclamation Plan (RP-98-02) does not address final disposition of Group B mining waste during closure and post closure period as described in Finding 67.
15. The Discharger shall provide a separate Closure and Post Closure Maintenance Plan as required in Provisions E.5.e that complies with Title 27, subsections 22510 (b), (c) and (f) which amongst other issues addresses long term costs associated with continued portal discharges, , and final disposition of all Group B mining waste present at the facility at the time of closure.
16. Any amendments to the Timm Mine Reclamation Plan or Closure and Post Closure Maintenance Plan shall be submitted to Central Valley Water Board to determine if they are still consistent with Title 27, subsections 22510 (b), (c) and (f).
17. The approved financial assurance mechanism for the Discharger's Mining and Reclamation Plan approved by the State Mining and Geology Board, does not include all costs required in the Closure and Post Closure Financial Assurances required by Title 27, subsection 22510(f). The Discharger shall name the Central Valley Water Board as an alternate payee for the financial assurance mechanism associated with threats to water quality due to Group C mining waste and provide separate financial assurances due to threats to water quality from the presence of Group B mining waste at the facility as required by Provisions E.5.e.
18. Subsequent amendments to the Reclamation Plan, Closure and Post Closure Maintenance Plan and related financial assurances shall be incorporated herein and made part of this Order by reference provided that any proposed amendments are functionally equivalent to the Closure and Post Closure Maintenance of WMUs required by Title 27, section 22510 and are approved by Central Valley Water Board's Executive Officer.
19. The facility shall be closed in a manner that will minimize erosion and the threat of water quality degradation.
20. Following closure, the Discharger shall continue to collect surface water samples as described in the Reclamation Plan and Closure and Post Closure Maintenance Plan.
21. The Reclamation Plan submitted to the SMGB does not include a Post Closure Sampling and Analysis Plan (Post Closure SAP), which describes monitoring procedures during the closure and post closure period. The purpose of the Post Closure SAP is to document whether the mining and reclamation procedures, as employed by the Discharger, prevent water quality degradation and ensure that there will be no significant increase in the concentration of indicator parameters or waste constituents in waters of the state. This Order in Provisions E.5.f requires the Discharger to submit a Post Closure SAP for the closure and post closure period.

22. The post closure monitoring and maintenance period shall end² when the Central Valley Water Board determines that water quality aspects of closure and post closure maintenance are complete and the wastes no longer pose a threat to water quality (Title 27, section 22510(h).).
23. The Discharger shall comply with all applicable Standard Closure and Post Closure Specifications listed in Section XI D and E and all Standard Construction Specifications that are applicable to closure in Section VI of the SPRRs dated February 2009 which are attached hereto and made part of this Order by reference.

C. MONITORING SPECIFICATIONS

1. Neither mining nor processing activities at the facility, the discharge of waste at the facility, the closure of the facility, nor post closure maintenance of the facility shall cause or allow ground or surface water to be degraded.
2. The Discharger shall conduct surface water monitoring in accordance with an approved Sampling and Analysis Plan per Title 27, section 20415(e)4-5. This Order in Provisions E.5.g requires the Discharger to submit a Sampling and Analysis Plan for approval.
3. The Discharger shall provide Board staff a minimum of one week notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices.
4. The Discharger shall establish and submit a Water Quality Protection Standard (WQPS) Report within one year of the adoption of this Order (See Provision E.5.h.). The Water Quality Protection Standard Report shall include the information described in Section C.1. Water Quality Protection Standard and Compliance Period of the attached Monitoring and Reporting Program R5-2014-0108. During the one year after adoption of this Order the Discharger shall comply with interim Water Quality Protection Standards that are provided in the attached Monitoring and Reporting Program R5-2014-0108.
5. The concentrations of the constituents of concern in waters passing the Monitoring Point shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program R5-2014-0108.
6. For each monitoring event, the Discharger shall determine whether the facility is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program R5-2014-0108.
7. The Discharger shall maintain an approved Sampling and Analysis Plan (SAP) per Title 27, section 20415(e)4 and (e)5. The Sampling and Analysis Plan shall at a minimum include:
 - Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
 - Sample preservation information and shipment procedures;

² The post-closure monitoring and maintenance period typically ends when the Unit has been in compliance with the water quality protection standard for a period of three consecutive years.

- Sample analytical methods and procedures;
- Sample quality assurance/quality control (QA/QC) procedures; and
- Chain of Custody control.

D. FINANCIAL ASSURANCE SPECIFICATIONS

1. The Discharger shall obtain and maintain assurances of financial responsibility with Central Valley Water Board for closure and post closure maintenance of the Timm Mine as described in Findings 65 through 67, adjusted for inflation annually. A report regarding financial assurances for closure and post closure maintenance shall be submitted to the Central Valley Water Board by 1 June of each year. If the Executive Officer determines that either the amount of coverage or the mechanism is inadequate, then within 90 days of notification, the Discharger shall submit an acceptable mechanism to the Central Valley Water Board for at least the amount of the approved cost estimate.
2. The Discharger shall update the Closure and Post Closure Maintenance plan any time there is a change that will increase the amount of the closure and/or post closure maintenance cost estimate. The updated Closure and Post Closure Maintenance Plan shall be submitted to the Central Valley Water Board. The Closure and Post Closure Maintenance Plan shall meet the requirements of Title 27, section 22510(f), and include a lump sum estimate of the cost of carrying out all actions necessary to close each Waste Management Unit, to maintain any post closure waste treatment systems, to prepare detailed design specifications, to develop the final Closure and Post Closure Maintenance Plan. Reports regarding financial assurance required in D.1 above shall reflect the updated cost estimate.

E. PROVISIONS

1. The Discharger shall comply with Standard Provisions and Reporting Requirements (SPRRs) Mining Wastes dated February 2009. The SPRRs contain important provisions and requirements with which the Discharger must comply.
2. The Discharger must comply with Monitoring and Reporting Requirements Order R5-2014-0108. Compliance includes, but is not limited to, monitoring of waste, waste discharges, and surface water monitoring throughout the active life of the WMU and post closure maintenance period.
3. The Discharger shall notify Board staff within 24 hours of any unpermitted discharge, flooding, equipment failure, slope failure, or other change in facility conditions or related precipitation and drainage controls or degradation of waters of the state.
4. The Discharger shall maintain legible records at the facility of volume and type of waste discharged. The Discharger shall make such records available for review by representatives of the Central Valley Water Board and State Water Resources Control Board.
5. The Discharger shall complete the following tasks by the required dates:

Item	TASK	DATE DUE
a.	Provide copy of updated Forest Service Ops Plan that is consistent with these WDRs that is protective of water quality. (Finding 25)	31 August 2015
b.	Submit a Land Use Report that provides sufficient information on domestic water supply wells, private residences, crops, or livestock that are present within one mile of the perimeter of the facility. (Finding 32)	31 August 2015
c.	Submit a Work Plan that describes how Group B mining waste previously placed outside of a WMU will be mitigated to nullify its potential threat to water quality. (Finding 41)	9 February 2015
d.	Submit a Water Hardness Study to determine lowest background water hardness as CaCO ₃ in Traverse Creek that is most protective of beneficial uses in receiving waters. (Finding 41 Note# 1)	31 August 2015
e.	Submit a preliminary Closure and Post Closure Maintenance Plan and financial assurances that address long term water quality impacts from abandoned tailings pond adjacent to Traverse Creek, post closure portal discharge of Class B mining waste as well as disposal of up to 100 tons of Class B mining waste in the form of mineralized rock and mill tailings. (Finding 41 and Discharge Specifications B.17)	31 August 2015
f.	Submit a Post Closure Sampling and Analysis Plan (Post Closure SAP), which describes monitoring procedures for water during the closure and post closure period that will prevent water quality degradation and ensure that there will be no significant increase in the concentration of indicator parameters or waste constituents in waters of the state. (Discharge Specifications B.21)	31 August 2015
g.	Submit a Sampling and Analysis Plan (SAP), which describes Quality Assurance and Quality Control (QA/QC) procedures that will be used to ensure integrity of the water quality Monitoring and Reporting Program R5-2014-0108 . (Monitoring Specifications C.2)	31 August 2015
h.	Submit Water Quality Protection Standard Report. (Monitoring Specification C.4)	31 August 2015
i.	Submit updated cost estimates and financial assurances for closure and post closure maintenance. (Financial Assurance Specification D.1)	By 1 June of each year
j.	Submit proof of coverage under the State Water Resources Control Board Order 97-03-DWQ, <i>General Permit for Discharges of Storm Water Associated with Industrial Activities.</i>	31 August 2015

6. Provisional tasks E.5.b through E.5.i above shall be prepared by a registered professional licensed in the State of California to perform such work. Upon approval in writing by the Executive Officer of the submittals in response to the provisional tasks mentioned above the approved submittals are incorporated herein and made part of this Order by reference for the purpose of compliance and enforcement.
7. In the event of any change in control or ownership of the Timm Mine facility, the Discharger must notify the succeeding owner or operator of the existence of this Order by letter, a copy of which shall be immediately forwarded to the Central Valley Water Board's Rancho Cordova Office. To assume operation as a Discharger under this Order, the succeeding owner or operator must submit a written request requesting transfer of the Order to the Executive Officer. The request must contain the requesting entity's full legal name, the state of incorporation (if a corporation), the name, address, and telephone number of persons responsible for contact with the Central Valley Water Board, and a statement complying with the signatory paragraph of the Standard Provisions that states the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a violation of the Water Code. Transfer shall be approved or disapproved by the Executive Officer.
8. For the purposes of resolving any disputes arising from or related to the Water Code, any regulations promulgated thereunder, these WDRs or any other orders governing the facility, the Discharger, its parents and subsidiaries, and their respective past, present, and future officers, directors, employees, agents, shareholders, predecessors, successors, assigns, and affiliated entities, consent to jurisdiction of the Courts of the State of California.
9. The Central Valley Water Board will review this Order periodically and revise requirements when necessary.

If, in the opinion of the Executive Officer, the Discharger fails to comply with the provisions of this Order, the Executive Officer may refer this matter to the Attorney General for judicial enforcement, may issue a complaint for administrative civil liability, or may take other enforcement actions. Failure to comply with this Order or with the WDRs may result in the assessment of Administrative Civil Liability of up to \$10,000 per violation, per day, depending on the violation, pursuant to the Water Code, including sections 13268, 13350 and 13385. The Central Valley Water Board reserves its right to take any enforcement actions authorized by law.

Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050 and following. The State Water Board must receive the petition by 5:00 p.m., 30 days after the date of this Order, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or state holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions may be found on the Internet at:

http://www.waterboards.ca.gov/public_notices/petitions/water_quality

or will be provided upon request.

WASTE DISCHARGE REQUIREMENTS ORDER R5-2014-0108
LAMPLIGHT, INC. AND MAYBELLE TIMM ELEY
U.S. FOREST SERVICE AND BLM
TIMM MINE
EL DORADO COUNTY

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I, Pamela C. Creedon, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the Central Valley Regional Water Quality Control Board, on 8 August 2014.

Original signed by Ken D. Landau for

PAMELA C. CREEDON, Executive Officer

WMH/vkj

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM R5-2014-0108
FOR

LAMPLIGHT, INC.
MAYBELLE TIMM ELEY
TIMM M TESTAMENTARY TRUST
UNITED STATES DEPARTMENT OF AGRICULTURE, FOREST SERVICE
UNITED STATES DEPARTMENT OF INTERIOR, BUREAU OF LAND MANAGEMENT

TIMM MINE

EL DORADO COUNTY

This monitoring and reporting program (MRP) is issued pursuant to Water Code section 13267. This MRP contains requirements for surface water monitoring, facility monitoring, maintenance, and reporting; requires the submittal of periodic updates regarding the financial assurance mechanisms required by Waste Discharge Requirements (WDRs) Order R5-2014-0108; and includes requirements related to the implementation of the Standard Provisions and Reporting Requirements (SPRRs) dated February 2009. The Discharger shall not implement any changes to this MRP unless a revised MRP is issued by the Central Valley Water Board or the Executive Officer.

A. MONITORING

Based on Finding 50 of the WDRs, groundwater monitoring is not required by this MRP. Should the Discharger propose to contain Group B mining waste in WMUs that pose a threat to groundwater or propose to discharge Group B mining waste to land without appropriate treatment and/or controls, the need for groundwater monitoring will be reassessed.

The Discharger shall comply with provisions for monitoring in accordance with Standard Monitoring Specifications in Section IX of the SPRRs and the Monitoring Specifications in Section C of the WDRs. Surface water quality monitoring shall be conducted in accordance with the Discharger's approved *Sample Collection and Analysis Plan*.

Traverse Creek upstream (R-1) shall constitute the monitoring point for the Water Quality Protection Standard (WQPS) for surface water monitoring in Traverse Creek. All surface water monitoring points shall be sampled and analyzed for monitoring parameters and constituents of concern (COCs) as listed in Tables II and III of this MRP.

The Discharger may use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits and reporting limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program, and are identified in an approved *Sample Collection and Analysis Plan*.

The monitoring program of this MRP includes:

<u>Section</u>	<u>Monitoring Program</u>
A.1	Surface Water Monitoring
A.2	Facility Monitoring

1. **Surface Water Monitoring**

The Discharger shall operate a surface water quality monitoring and response program for any mining unit where runoff from the mining unit flows or could flow either directly or indirectly to waters of the United States.

At the Timm Mine, storm water runoff from Group C mining waste piles flow to detention basin(s) that periodically discharge to Traverse Creek as allowed under State Water Resources Control Board Order 97-03-DWQ, *General Permit for Discharges of Storm Water Associated with Industrial Activities* (General Order). Title 27 section 22480(b)(3) defines Group C mining waste as “*wastes from which any discharge would be in compliance with the applicable water quality control plan, including water quality objectives other than turbidity.*” Therefore, monitoring and reporting of discharges from Group C mining waste shall be conducted under a separate WDRs accordance with the General Order.

The surface water quality monitoring points for the Timm Mine are:

<u>Mon Pt.</u>	<u>Status</u>
R-1	Traverse Creek upstream (Background)
R-2	Traverse Creek downstream (Point of Compliance)
PD-1	Portal Discharge after treatment, prior to land discharge (Point of Compliance)
EF-1	Group B mine waste (WDRs Section B.5) discharge after treatment, prior to land discharge (Point of Compliance)

For surface water quality monitoring, a sample shall be collected at each monitoring point location and analyzed for the monitoring parameters and constituents in accordance with the frequency specified in Table II and the methods and reporting limits specified in Table III. All surface water monitoring samples shall be collected and analyzed for the 5-year COCs specified in Table III every five years, beginning in 2014.

2. **Facility Monitoring**

a. **Annual Facility Inspection**

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess repair and maintenance needed for drainage control systems, cover systems, and waste containment systems; and shall assess preparedness for winter conditions (including but not limited to erosion and sedimentation control). The Discharger shall take photos of any problems areas before and after repairs. Any necessary construction, maintenance, or

repairs shall be completed by **31 October**. Annual facility inspection reporting shall be submitted as required in Section B.3 of this MRP.

b. **Major Storm Events**

The Discharger shall inspect all precipitation, diversion, and drainage facilities and all mining unit side slopes for damage **within 7 days** following major storm events capable of causing damage or significant erosion. The Discharger shall take photos of any problem areas before and after repairs. Necessary repairs shall be completed **within 30 days** of the inspection. Notification and reporting requirements for major storm events shall be conducted as required in Section B.5 of this MRP.

c. **Standard Observations**

The Discharger shall conduct Standard Observations at the facility in accordance with this section of the MRP. Standard observations shall be conducted in accordance with the following schedule:

<u>Mining Unit Type</u>	<u>Frequency</u>	<u>Season</u>
Active	Weekly	Wet: 1 October to 30 April
Active	Monthly	Dry: 1 May to 30 September
Inactive/Closed	Monthly	Wet: 1 October to 30 April
Inactive/Closed	Quarterly	Dry: 1 May to 30 September

The Standard Observations for the mining units shall include:

- 1) Signs of erosion along the slopes or perimeter (show affected area on map):
- 2) Any moisture discharged from the base of any WMUs containing Group B solid mining waste per Finding 64 of the WDRs. Moisture discharged from the base of any WMUs containing Group B solid mining wastes shall indicate measurably significant evidence of a release and shall be treated accordingly per the SPRRs and B.4 of this MRP.
- 3) For receiving waters:
 - a) Floating and suspended materials of waste origin - presence or absence, source, and size of affected area; and
 - b) Discoloration and turbidity - description of color, source, and size of affected area.

Results of Standard Observations shall be submitted in the quarterly monitoring report required in Section B.1 of this MRP.

3. Waste Discharge Monitoring

The Discharger shall monitor the types and quantity of waste discharged in accordance with the frequencies specified in Table I and report the results as required in Section B.1 of this MRP.

B. REPORTING

The Discharger shall submit the following reports in accordance with the required schedule:

Reporting Schedule

<u>Section</u>	<u>Report</u>	<u>End of Reporting Period</u>	<u>Due Date</u>
B.1	Quarterly Monitoring Report	31 March 30 June 30 September 31 December	30 April 31 July 31 October 31 January
B.2	Annual Monitoring Report	31 December	31 January
B.3	Annual Facility Inspection Report	31 October	15 November
B.4	Seep Reporting	Continuous	Immediately and 7 Days
B.5	Major Storm Event Reporting	Continuous	7 days from damage discovery
B.6	Financial Assurances Report	31 December	31 July
B.7	Waste Characterization Report	As Required	31 January

Reporting Requirements

The Discharger shall submit monitoring reports **quarterly** with the data and information as required in this Monitoring and Reporting Program and as required in WDRs Order R5-2014-0108 and the Standard Provisions and Reporting Requirements (particularly Section IX: "Provisions for Monitoring" and Section X: "Response to a Release"). In reporting the monitoring data required by this program, the Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or the lack thereof. Data shall also be submitted in a digital format, such as a computer disk.

Field and laboratory tests shall be reported in each monitoring report. Quarterly monitoring reports shall be submitted to the Central Valley Water Board in accordance with the above schedule for the calendar period in which samples were taken or observations made.

The results of **all monitoring** conducted at the site shall be reported to the Central Valley Water Board in accordance with the reporting schedule above for the calendar period in which samples were taken or observations made.

The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the post-closure period. Such records shall be legible and shall show the following for each sample:

- a) Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
- b) Date, time, and manner of sampling;
- c) Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;
- d) Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
- e) Calculation of results; and
- f) Results of analyses, and the MDL and PQL for each analysis. All peaks shall be reported.

Required Reports

1. **Quarterly Monitoring Report:** Monitoring reports shall be submitted quarterly and are due on **31 January, 30 April, 31 July, and 31 October**. Each annual monitoring report shall contain at least the following:
 - a) A statement that the sampling procedure was conducted in accordance with the approved Sample Collection and Analysis Plan.
 - b) A map or aerial photograph showing the locations of observation stations, monitoring points, and background monitoring points.
 - c) Cumulative tabulated monitoring data for all monitoring points and constituents for surface water. Concentrations below the reporting limit shall not be reported as "ND" unless the concentration is below the method detection limit and the method detection limit is also given in the table. Otherwise they shall be reported "<" the reporting limit (e.g., <0.10) or as estimated values and flagged using the USEPA data qualifier (e.g. typically a flagged with "J"). Units shall be as required in Table I and Table II unless specific justification is given to report in other units. Refer to the SPRRs Section IX "Provisions for Monitoring" for requirements regarding MDLs and PQLs.
 - d) Laboratory statements of results of all analyses evaluating compliance with requirements.
 - e) An evaluation of the concentration of each monitoring parameter (or 5-year COC when five year COC sampling is conducted) as compared to the current concentration limits,

and the results of any required verification testing for constituents exceeding a concentration limit. Report any actions taken under SPRRs Section X: Response to a Release for verified exceedances of a concentration limit.

- f) An evaluation of the effectiveness of monitoring and control facilities, and of the run-off/run-on control facilities.
 - g) A summary of all Standard Observations for the reporting period required in Section A.2.c of this MRP.
 - h) A summary of inspection and re-vegetation activities of any closed mining units in accordance with the approved final Closure and Post-Closure Maintenance Plan as required by SPRRs Section XI.D. "Closure" and XI.E. "Post-Closure."
2. **Annual Monitoring Report:** The Discharger shall submit an Annual Monitoring Report to the Central Valley Water Board by **31 January** covering the reporting period of the previous monitoring year. If desired, the Annual Monitoring Report may be combined with the quarterly report where the reporting period ends 31 December, but if so, the Annual Monitoring Report shall clearly state that it is both a 4th quarter and Annual Monitoring Report in its title. Each Annual Monitoring Report shall contain the following information:
- a) All monitoring parameters shall be graphed to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. If a 5-year COC event was performed, than these parameters shall also be graphically presented. Each such graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
 - b) All historical monitoring data for which there are detectable results, including data for the previous year, shall be submitted in tabular form in a digital file format such as a computer disk. The Central Valley Water Board regards the submittal of data in hard copy and in digital format as necessary for conducting the periodic review and analysis required by Title 27. (Cal. Code Regs., tit. 27, § 20420(h).)
 - c) A comprehensive discussion of the compliance record, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.
 - d) A map showing the area and elevations in which filling has been completed during the previous calendar year and a comparison to final closure design contours, and include a projection of the year in which each discrete mining unit will be filled.
 - e) A written summary of the monitoring results, indicating any changes made or observed since the previous Annual Monitoring Report.
 - f) Updated concentration limits as necessary for each monitoring parameter at each compliance monitoring point based on the new data set.
3. **Annual Facility Inspection Reporting:** By **15 November** of each year, the Discharger shall submit a report describing the results of the inspection and the repair measures

implemented, preparations for winter, and include photographs of any problem areas and the repairs. Refer to Section A.2.a of this MRP, above.

4. **Seep Reporting:** The Discharger shall report by telephone any seepage from a Group B WMU immediately after it is discovered (See Section A.2.c(2) of this MRP). A written report shall be filed with the Central Valley Water Board within seven days, containing at least the following information:
 - a) A map showing the location(s) of seepage;
 - b) An estimate of the flow rate;
 - c) A description of the nature of the discharge (e.g., all pertinent observations and analyses);
 - d) Verification that samples have been submitted for analyses of the Field Parameters and Monitoring Parameters listed in Table II using the methods and reporting limits specified in Table III of this MRP, and an estimated date that the results will be submitted to the Central Valley Water Board; and
 - e) Corrective measures underway or proposed, and corresponding time schedule.
5. **Major Storm Event Reporting:** Following major storm events capable of causing damage or significant erosion, the Discharger **immediately** shall notify Central Valley Water Board staff of any damage or significant erosion upon discovery and report subsequent repairs within **14 days** of completion of the repairs, including photographs of the problem and the repairs. Refer to Section A.2.b of this MRP, above.
6. **Financial Assurances Report:** By **31 July** of each year, the Discharger shall submit updated cost estimates and a copy of the financial assurances for closure and post-closure maintenance. Refer to Financial Assurances Specifications D.1 through D.2 of the WDRs.
7. **Waste Characterization Report:** To ensure that Group C Classification for developmental rock remains appropriate, ongoing sampling and characterization of the mining waste in accordance with Water Code section 13260(k) is required. Ongoing characterization of the mining waste shall be at the frequency of one sample for every 750 cubic yards of mining waste discharged or at least one sample every second year (see Findings 38-40 and Section B.2 of the WDRs). Waste characterization reports shall be submitted annually and are due on **31 January**.

C. WATER QUALITY PROTECTION STANDARD AND COMPLIANCE PERIOD

1. Water Quality Protection Standard Report

The Discharger shall submit a Water Quality Protection Standard Report **by 1 July 2015**. The Water Quality Protection Standard Report shall include the information described in Sections 1.a through 1.e below.

For each waste management unit or water quality compliance point, the Water Quality Protection Standard (WQPS) shall consist of all COCs, the concentration limit for each

constituent of concern, the verification retesting procedure to confirm measurably significant evidence of a release, the point of compliance, and all water quality monitoring points for each monitored medium.

The Water Quality Protection Standard for naturally occurring waste constituents consists of the COCs, the concentration limits, and the point of compliance and all monitoring points. Any proposed changes to the Water Quality Protection Standard shall be submitted in a separate report for review and approval.

The report shall:

- a. Identify **all distinct bodies of surface water** that could be affected in the event of a release from a waste management unit or portion of a unit.
- b. Include a map showing the monitoring points and background monitoring points for the surface water monitoring program. The map shall include the point of compliance in accordance with Title 27, section 20405.
- c. Include a proposed statistical method for calculating concentration limits for monitoring parameters and constituents of concern that are detected in 10% or greater of the background data (naturally-occurring constituents) using a statistical procedure from Title 27, section 20415(e)(8)(A-D) or section 20415(e)(8)(E).
- d. Include a retesting procedure to confirm or deny measurably significant evidence of a release pursuant to Title 27, section 20415(e)(8)(E) and section 20420(j)(1-3).

The Water Quality Protection Standard shall be certified by a California-registered civil engineer or geologist as meeting the requirements of Title 27. If subsequent sampling of the background monitoring point(s) indicates significant water quality changes due to either seasonal fluctuations or other reasons unrelated to waste management activities at the site, the Discharger may request modification of the Water Quality Protection Standard.

The Water Quality Protection Standard shall be evaluated annually and reported for each monitoring point using new and historical monitoring data.

2. Monitoring Parameters

Monitoring parameters are a select group of constituents that are monitored during each monitoring event that are the waste constituents, reaction products, hazardous constituents, and physical parameters that provide a reliable indication of a release from a waste management unit. The monitoring parameters for all waste management units are those listed in Table II for the specified monitored medium.

3. Constituents of Concern (COCs)

The COCs include a larger group of waste constituents, their reaction products, and hazardous constituents that are reasonably expected to be in or derived from waste contained in the waste management unit, and are required to be monitored every five years (Cal. Code Regs, tit. 27, § 20395 and 20420(g).).

The COCs for all mining units at the facility are those listed in Tables II and III for the specified monitored medium. The Discharger shall monitor all COCs every five years, or more frequently as required in accordance with a Corrective Action Program.

4. Concentration Limits

For a naturally occurring constituent of concern, the concentration limit for each constituent of concern shall be determined as follows:

- a. By calculation in accordance with a statistical method pursuant to Title 27, section 20415(e)(8); or
- b. By an alternate statistical method meeting the requirements of Title 27, section 20415(e)(8)(E).

The methods for calculating concentration limits shall be included in the *Water Quality Protection Standard Report* discussed in Section C.1 above.

The Water Quality Protection Standards concentration limits shall not be calculated using data identified as outliers using the EPA 1989 Outlier Test or calculated using data that indicates an upward trend due to a release of COCs to receiving water. Until the Discharger submits an approved Water Quality Protection Standard Report per Section C.1 above the following interim concentration limits shall be used:

Analyte	Compliance Monitoring Point			WQC/WQC ⁵
	R-2	PD-1	EF-1	
pH (Std. Units)	See Note 1	6.5-8.5	6.5-8.5	Basin Plan
EC ³ (umhos/cm) at 25° C	See Note 1	900	900	CDHS 2 nd MCL
Turbidity (NTU)	See Note 2	5	5	Basin Plan & CDHS 1 st MCL
TSS ⁴ (mg/L)	See Note 1	100	100	NPDES Industrial Storm Water Benchmark
Oil and Grease(mg/L)	See Note 1	15	15	NPDES Industrial Storm Water Benchmark
Aluminum (µg/L)	See Note 1	87	87	CTR- Freshwater Aquatic Life
Arsenic, Total (µg/L)	See Note 1	10	10	CDHS 1 st MCL
Copper, Total (µg/L)	See Note 1	4.3 ^b	4.3 ^b	CTR- Freshwater Aquatic Life
Lead, Total (µg/L)	See Note 1	1 ^b	1 ^b	CTR- Freshwater Aquatic Life
Nickel, Total (µg/L)	See Note 1	24 ^b	24 ^b	CTR- Freshwater Aquatic Life
Zinc, Total (µg/L)	See Note 1	55 ^b	55 ^b	CTR- Freshwater Aquatic Life
Ammonium (NH ₄ ⁺), total	See Note 1	See Note 7	See Note 7	CA Department of Fish and Game
Nitrate (NO ₃ ⁻), total (mg/L)	See Note 1	45	45	CDHS 1 st MCL

Notes:

Outliers shall not be used to calculate concentration limits when concentration limits are used for detection monitoring.

¹Interim Monitoring result shall not exceed more than 10% of the monitoring result for the same constituent at background monitoring point R-1 for the same sampling event.

²Where background turbidity at R-1 is less than 1 Nephelometric Turbidity Unit (NTU), controllable factors shall not cause downstream turbidity at R-2 to exceed 2 NTU. Where background turbidity at R-1 is between 1 and 5 NTUs, increases at R-2 shall not exceed 1 NTU. Where background turbidity at R-1 is between 5 and 50 NTUs, increases shall not exceed 20

percent. Where background turbidity at R-1 is between 50 and 100 NTUs, increases at R-2 shall not exceed 10 NTUs. Where background turbidity at R-1 is greater than 100 NTUs, increases at R-2 shall not exceed 10 percent.

³Electrical Conductivity

⁴Total Suspended Solids

⁵Water Quality Criteria (WQC) or Water Quality Objective (WQO). "*Basin Plan*" means Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, "*NPDES Industrial Storm Water Benchmark*" means benchmarks established through State Water Resources Control Board Water Quality Order 97-03-DWQ, "*CTR-Freshwater Aquatic Life*" means California Toxics Rule criteria for the protection of freshwater aquatic life in the receiving water, "*CDHS 1st MCL*" means California Department of Health Services primary Maximum Contaminant Level for drinking water standards.

⁶CTR Freshwater-Aquatic Life beneficial use criteria based on estimated receiving water hardness of 40 mg/L as CaCO₃ downstream at Placerville

⁷The continuous (30-day average) water quality criterion for total ammonia nitrogen is dependent on pH and ambient temperature in Traverse Creek at R-1 when early life stages of fish are present. The Discharger shall calculate the effluent limitations based on pH and temperature in Traverse Creek.

5. Retesting Procedures for Confirming Evidence of a Release

If monitoring results indicate measurably significant evidence of a release, as described in Section IX "Provisions for Monitoring, B.12.b" of the SPRRs, then:

- a. **Immediately** notify the Central Valley Water Board about any constituent or constituents verified to be present at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and.
- b. Comply with section **X.A.b** of this document, **Response to a Release**, if any constituent or constituents were verified to be present.
- c. Any analyte that triggers a discrete retest per this method shall be added to the monitoring parameter list such that it is monitored during each regular monitoring event.

6. Point of Compliance

The point of compliance for the WQPS for water quality monitoring in Traverse Creek is monitoring point R-2 (Traverse Creek downstream).

The point of compliance for the WQPS for water quality monitoring for discharges to land from the portal is PD-1 (discharge after treatment, prior to land discharge).

The point of compliance for the WQPS for water quality monitoring for discharges to land from Group B mine waste is EF-1 (discharge after treatment, prior to land discharge).

7. Compliance Period

The compliance period for each waste management unit or water quality compliance point shall be the number of years equal to the active life of the unit plus the closure period. The compliance period is the minimum period during which the Discharger shall conduct a water quality monitoring program subsequent to a release from the waste management unit. The compliance period shall begin anew each time the Discharger initiates an evaluation monitoring program. (Cal. Code Regs., tit. 27, § 20410.)

8. Monitoring Points

A monitoring point is a well, device, or location specified in the waste discharge requirements, which monitoring is conducted and at which the water quality protection standard applies. The monitoring points for each monitored medium are listed in Section A of this MRP.

D. TRANSMITTAL LETTER FOR ALL REPORTS

A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. If no violations have occurred since the last submittal, this shall be stated in the transmittal letter. The transmittal letter shall also state that a discussion of any violations found since the last report was submitted, and a description of the actions taken or planned for correcting those violations, including any references to previously submitted time schedules, is contained in the accompanying report. The transmittal letter shall contain a statement by the discharger, or the discharger's authorized agent, under penalty of perjury, that to the best of the signer's knowledge the report is true, accurate, and complete.

The Discharger shall implement the above monitoring program on the effective date of this Program.

Original signed by Ken D. Landau for
Ordered by: _____
PAMELA C. CREEDON, Executive Officer

_____ 8 August 2014

WMH/vkj

TABLE I
PRODUCTION MONITORING

<u>Field Parameter</u>	<u>Units</u>	<u>Sampling Frequency</u>	<u>Reporting Frequency</u>
Development Rock Mined (Group C)	Tons	Monthly	Quarterly
Development Rock Reclaimed (Group C)	Tons	Monthly	Quarterly
Mineralized Rock Mined (Group B)	Tons	Monthly	Quarterly
Total Mineralized Rock (Group B) stored in WMUs	Tons	Monthly	Quarterly
Mineralized Rock (Group B) returned to mine for disposal	Tons	Monthly	Quarterly
Mill Tailings (Group B) Produced	Tons	Monthly	Quarterly
Mill Tailings (Group B) returned to mine for disposal	Tons	Monthly	Quarterly

TABLE II
SURFACE WATER MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Sampling Frequency</u> ¹	<u>Reporting Frequency</u>
Field Parameters			
pH	Standard Units	Quarterly	Quarterly
Temperature	°C	Quarterly	Quarterly
Electrical Conductivity (EC)	1 µmhos/cm	Quarterly	Quarterly
Turbidity	NTU	Quarterly	Quarterly
Monitoring Parameters			
General Minerals			
Total Suspended Solids (TSS)	mg/L	Quarterly	Quarterly
Metals			
Aluminum, total	µg/L	Quarterly	Quarterly
Arsenic, total	µg/L	Quarterly	Quarterly
Copper, total	µg/L	Quarterly	Quarterly
Lead, total	µg/L	Quarterly	Quarterly
Nickel, total	µg/L	Quarterly	Quarterly
Zinc, total	µg/L	Quarterly	Quarterly
Oil and Grease	mg/L	Quarterly	Quarterly
Blasting Agents			
Ammonium (NH ₄ ⁺), total	µg/L	twice per year	Annual
Nitrate (NO ₃ ⁻), total	µg/L	twice per year	Annual

5-Year Constituents of Concern (see Table III)

¹ Surface water monitoring is required quarterly when there is water present at the designated surface water monitoring points. Reporting shall include whether there was storm water flow from the facility to waters of the U.S. when the samples were collected.

TABLE III
5-YEAR COCs & APPROVED USEPA ANALYTICAL METHODS

<u>Surface Water (total recoverable):</u>	<u>USEPA Method</u>	<u>Reporting Limit (µg/L)</u>
Aluminum	6020	<=50
Antimony	6020	<=1
Arsenic	6020	<=1
Barium	6020	<=1
Cadmium	6020	<=1
Chromium	6020	<=1
Cobalt	6020	<=1
Copper	6020	<=1
Iron	6020	<=50
Lead	6020	<=1
Manganese	6020	<=1
Mercury	245.7	<=0.05
Nickel	6020	<=1
Selenium	7742	<=3
Silver	6020	<=1
Thallium	6020	<=1
Vanadium	6020	<=1
Zinc	6020	<=5
Oil and Grease	8015	<=50
Ammonium (NH ₄ ⁺)	350.2	<=200
Nitrate (NO ₃ ⁻)	300.0/353.3	<=50

INFORMATION SHEET

LAMPLIGHT, INC. AND MAYBELLE TIMM ELEY
U.S. FOREST SERVICE AND BLM
TIMM MINE
EL DORADO COUNTY

Lamplight, Inc. is the operator and Maybelle Timm Eley is the owner of the Timm Mine (the Facility or Site). The Facility is located in El Dorado County. The Facility is a mining claim located on private land owned jointly by Maybelle Timm Eley and the Timm M Testamentary Trust, and on public lands owned by the United States Government (United States Department of Agriculture, Forest Service and United States Department of Interior, Bureau of Land Management). The Timm Mine is located approximately 1.5 miles east of Spanish Flat along Traverse Creek. The Facility covers approximately 3 acres of surface area and the elevation at the site ranges from about 1,450 to 2,550 feet above mean sea level. The Timm Mine consists of a series of interconnected mining claims that have intermittently operated since the 1880's. The Timm Mine consolidates mining claims previously known individually as the Atlanta, Round Hill#1 and #2, Yellow Jacket, Shumway, and Alhambra claims.

On 30 January 2013, the Discharger submitted a Report of Waste Discharge (RoWD) for the Timm Mine. However, the RoWD was deemed incomplete. These WDRs in the provisions require the Discharger to submit the necessary attachments, reports, etc. to ensure that the Discharger's operations are in compliance with the Water Code and Title 27 regulations associated with mining operations and final disposition of all mining waste.

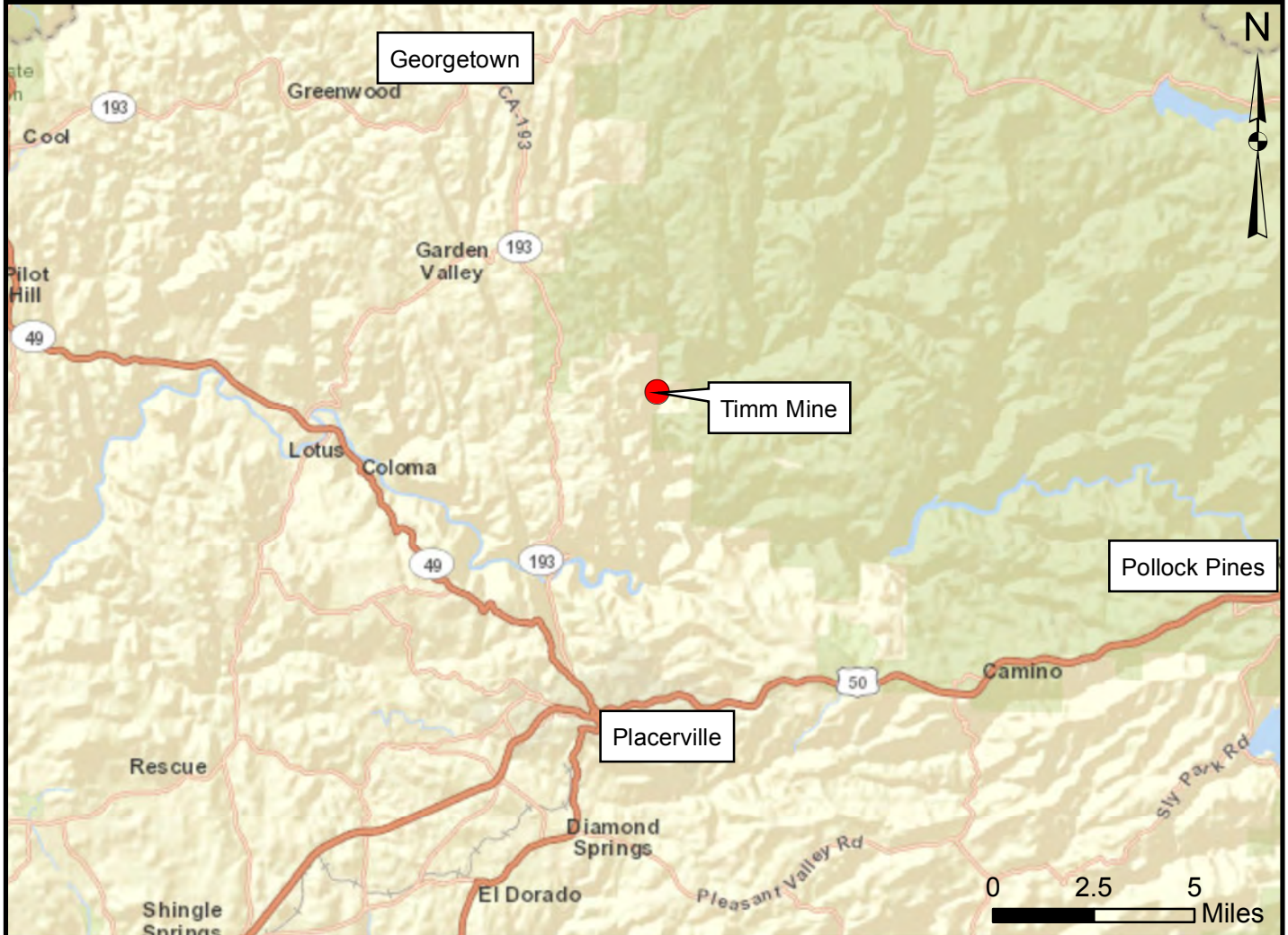
The proposed mining rate is less than 1000 tons per year. The Discharger identified two main types of mining waste that will be generated from the operation. Approximately 900 tons of mining waste to be generated was characterized as development rock. Development rock has been classified as Group C mining waste as defined by California Code of Regulations, title 27 ("Title 27"), § 22480. Approximately 100 tons per year of mining waste to be generated at the site was characterized as Group B mining waste. These WDRs prescribe waste discharge requirements for Group B and Group C mining waste that are protective of ground and surface waters.

All mining (development and production) is underground with access to the mine workings through the main portal. All mining equipment is powered by compressed air, except an electric rail trammer. Blast holes are drilled with a pneumatic percussion rotary drill using compressed air and water. Blast holes are drilled, loaded with explosives and shot. The Discharger anticipates that milling will occur intermittently, one to two non-consecutive days per month, and less than 100 tons/year of material will be processed through the mill. The milling process is a gravity separation system that does not use chemicals or reagent; target metals are recovered by material density differential using water and mechanical action. The mill system entails: ore storage and conveyance; crushing and grinding of ore; and, recovery of precious metals and metallic sulfides. Excess water from the mill circuit will be pumped to a separate, fully contained water storage area and recycled back to the mill circuit. All process water in the milling operation will be fully contained with zero potential for discharge to ground or surface water without prior treatment as described in Findings 61 through 64 and Discharge Specifications B.3 through B.5 of this Order. All tailings will be mixed with cement slurry and pumped back into dry abandoned underground work areas for solidification.

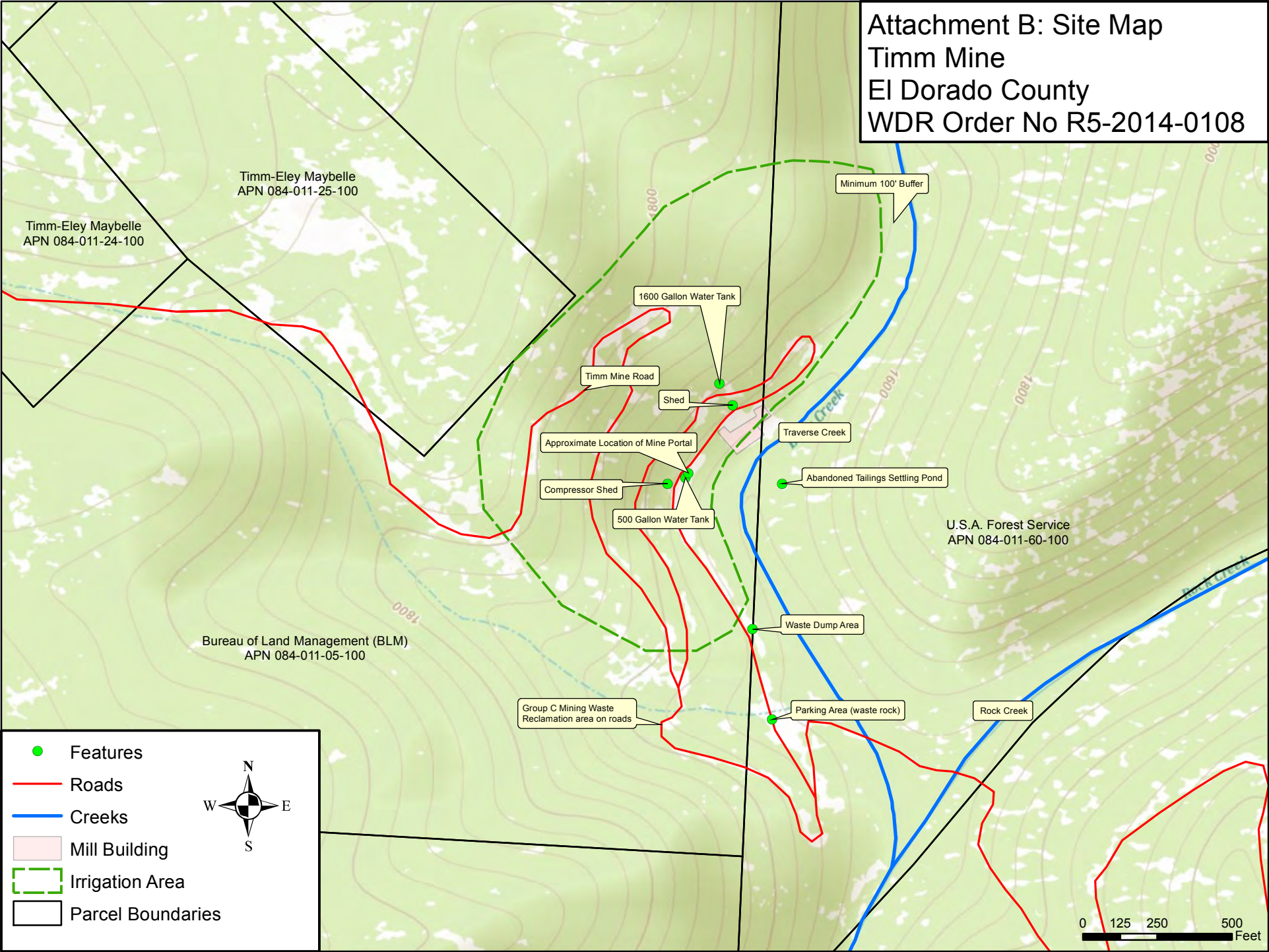
These WDRs prohibit the direct or indirect discharge of mining waste to surface water or surface water drainage courses. These WDRs require Group B mining waste in liquid form to be treated prior to discharge to land. Group C mining waste will be reclaimed onsite.

Storm water runoff from the Facility will be regulated under State Water Resources Control Board Order 97-03-DWQ, *General Permit for Discharges of Storm Water Associated with Industrial Activities*.

Attachment A: Location Map
Timm Mine
El Dorado County
WDR Order No R5-2014-0108



Attachment B: Site Map
 Timm Mine
 El Dorado County
 WDR Order No R5-2014-0108



Timm-Eley Maybelle
 APN 084-011-25-100

Timm-Eley Maybelle
 APN 084-011-24-100

Bureau of Land Management (BLM)
 APN 084-011-05-100

U.S.A. Forest Service
 APN 084-011-60-100

- Features
- Roads
- Creeks
- Mill Building
- Irrigation Area
- Parcel Boundaries



0 125 250 500
 Feet

Partial Table of Contents for
STANDARD PROVISIONS AND REPORTING REQUIREMENTS
MINING WASTES
For Title 27 (27CCR §20005 et seq.)
FEBRUARY 2009

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS
FOR
WASTE DISCHARGE REQUIREMENTS
FOR
DISCHARGES OF MINING WASTES
REGULATED BY TITLE 27
(27 CCR §20005 et seq.)
MINING FACILITIES

FEBRUARY 2009

I. APPLICABILITY

- A. These Standard Provisions and Reporting Requirements are applicable to “mining waste” disposal sites that are regulated pursuant to the provisions of the California Code of Regulations, title 27 section 20005 et seq. (27 CCR or Title 27). The term “Mining waste” is defined in title 27 section 22480.
- B. For this document, WMU is defined as a waste management unit containing mining waste.
- C. “Order,” as used throughout this document, means the Waste Discharge Requirements to which these Standard Provisions and Reporting Requirements are incorporated.
- D. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, and do not protect the Discharger from liabilities under federal, state, or local laws. This Order does not convey any property rights or exclusive privileges.
- E. The provisions of this Order are severable. If any provision of this Order is held invalid, the remainder of this Order shall not be affected.
- F. If there is any conflicting or contradictory language between the Waste Discharge Requirements (WDRs), the Monitoring and Reporting Program (MRP), or the Standard Provisions and Reporting Requirements (SPRR), then language in the WDRs shall govern over either the MRP or the SPRR, and language in the MRP shall govern over the SPRR.

- G. Unless otherwise stated, all terms are as defined in California Water Code (CWC) section 13050 and in title 27 section 20164.

II. TERMS AND CONDITIONS

- A. Failure to comply with any waste discharge requirement, monitoring and reporting requirement, or Standard Provisions and Reporting Requirement, or other order or prohibition issued, reissued, or amended by the Central Valley Water Board or the State Water Resources Control Board, or intentionally or negligently discharging waste, or causing or permitting waste to be deposited where it is discharged into the waters of the state and creates a condition of pollution or nuisance, is a violation of these waste discharge requirements and the California Water Code, which can result in the imposition of civil liability [CWC §13350(a)]
- B. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to [CWC §13381]:
1. Violation of any term or condition contained in this Order;
 2. Obtaining this Order by misrepresentation, or failure to disclose fully all relevant facts;
 3. A change in any condition that results in either a temporary or permanent need to reduce or eliminate the authorized discharge; or
 4. A material change in the character, location, or volume of discharge.
- C. Before initiating a new discharge or making a material change in the character, location, or volume of an existing discharge, the Discharger shall file a new report of waste discharge, or other appropriate joint technical document, with the Central Valley Regional Water Quality Control Board (hereafter Central Valley Water Board) [CWC §13260(c) and §13264(a)]. A material change includes, but is not limited to, the following:
1. An increase in area or depth to be used for solid waste disposal beyond that specified in waste discharge requirements;
 2. A significant change in disposal method, location, or volume (e.g., change from land disposal to land treatment); or
 3. A change in the type of waste being accepted for disposal.

- D. Representatives of the Central Valley Water Board may inspect the facilities to ascertain compliance with the waste discharge requirements. The inspection shall be made with the consent of the owner or possessor of the facilities or, if the consent is refused, with a duly issued warrant. However, in the event of an emergency affecting the public health or safety, an inspection may be made without consent or the issuance of a warrant [CWC §13267(c)].
- E. The Central Valley Water Board will review this Order periodically and will revise these waste discharge requirements when necessary [CWC §13263(e) and 27 CCR §21720(b)].
- F. Except for material determined to be confidential in accordance with California law and regulations, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Central Valley Water Board [CWC §13267(b)]. Data on waste discharges, water quality, geology, and hydrogeology shall not be considered confidential.
- G. The Discharger shall submit to the Central Valley Water Board for review and approval a closure and post-closure maintenance plan prepared in accordance with Closure and Post-Closure for Mining WMUs [27 CCR §22510].

III. GENERAL PROVISIONS

- A. The discharge shall neither cause nor contribute to the contamination, degradation, or **pollution of groundwater** via the release of waste constituents in either liquid or gaseous phase.
- B. Wastes shall not be discharged to any surface water body without a Stormwater Permit or a NPDES permit.
- C. The discharge shall neither cause nor contribute to any **surface water pollution**, contamination, or nuisance, including, but not limited to:
 - 1. floating, suspended, or deposited macroscopic particulate matter or foam;
 - 2. increases in bottom deposits or aquatic growth;
 - 3. an adverse change in temperature, turbidity, or apparent color beyond natural background levels;

4. the creation or contribution of visible, floating, suspended, or deposited oil or other products of petroleum origin;
 5. the introduction or increase in concentration of toxic or other pollutants/contaminants resulting in unreasonable impairment of beneficial uses of waters of the State.
- D. The discharge shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the waste management unit (WMU) if such waste constituents could migrate to waters of the State—in either the liquid or the gaseous phase—and cause **a condition of contamination, pollution, degradation, or nuisance**.
- E. The discharge shall not cause the release of pollutants, or waste constituents in a manner which could cause a condition of contamination, pollution, degradation, or nuisance to occur, as indicated by the most appropriate statistical or non-statistical data analysis method and retest method listed in the Monitoring and Reporting Program.
- F. The Discharger shall take **all reasonable steps to minimize any adverse impact** to the waters of the state resulting from noncompliance with this Order. (“Order,” as used throughout this document, means the Waste Discharge Requirements). Such steps shall include accelerated or additional monitoring as necessary to determine the nature, extent, and impact of the noncompliance.
- G. In the event of any change of ownership or responsibility for construction, operation, closure, or post-closure maintenance of the waste discharge facilities described in this Order, the Discharger shall notify the Central Valley Water Board prior to the effective date of the change and shall include a statement by the new Discharger that construction, operation, closure, or post-closure maintenance will be in compliance with this Order and any revisions thereof [27 CCR §21710(c)(1)].
- H. The Discharger shall notify the Central Valley Water Board of a material change in; the types, quantity, or concentrations of wastes discharged; site operations and features; or proposed closure procedures, including changes in cost estimates. This notification shall be given a reasonable time before the changes are made or become effective. No changes shall be made without Central Valley Water Board approval following authorization for closure pursuant to the site Notification of Closure [27 CCR §21710(a)(4)].

- I. The Discharger shall maintain legible records of the volume and type of each waste discharged at each WMU or portion of a WMU, and the manner and location of discharge. These records shall be on forms approved by the State Water Resources Control Board or Central Valley Water Board and shall be maintained at the waste management facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the State Water Resources Control Board or Central Valley Water Board at any time during normal business hours. At the beginning of the post closure maintenance period, copies of these records shall be sent to the Central Valley Water Board. [27 CCR §21720(f)].
- J. All WMUs shall be protected from flooding as required in title 27 section 22490(b).
- K. Diversion and drainage facilities shall be designed and constructed to accommodate the anticipated volume of precipitation and peak flows from surface runoff as follows [27 CCR §22490(h)(1)]:
 1. Group A – one 25 year, 24 hour storm;
 2. Group B – one 10 year, 24 hour storm; and
 3. Group C – one 10 year, 24 hour storm.
- L. Precipitation on Group A and B waste piles that is not diverted by containment structures shall be collected and managed through the leachate collection and removal system (LCRS). The Central Valley Water Board can make exemptions to this requirement if the collected fluid does not contain indicator parameters or waste constituents in excess of applicable water quality objectives [27 CCR §22490(h)(2)].
- M. Dischargers shall comply with special requirements for surface impoundments given in title 27 section 20375. Nevertheless, for Mining Units, Dischargers shall use the precipitation conditions in title 27 section 22490(h)(1).

IV. **FINANCIAL ASSURANCE PROVISIONS**

- A. The Discharger shall establish an irrevocable fund for closure and post-closure maintenance to ensure closure and post-closure maintenance of each classified WMU in accordance with an approved closure and post-closure maintenance plan [27 CCR §22510(f)].

- B. If a lead agency acting under the authority of §2774(a) of the Public Resources code requires assurances of financial responsibility, these assurances can be used to fulfill all comparable requirements provided that:
 - 1. the Central Valley Water Board approves the assurance; and
 - 2. the Central Valley Water Board is named as alternate payee. [27 CCR §22510(g)]

V. DISCHARGE SPECIFICATIONS

- A. The Discharger is responsible for accurate characterization of wastes, including a determination of whether or not wastes will be compatible with containment features and other wastes at the WMU and whether or not the wastes are required to be managed as a Group A, Group B or Group C mining waste [27 CCR §22480]
- B. Group B and Group C WMUs contained with liners shall be designed, constructed, and operated to ensure that wastes will be a minimum of 5 feet above the highest anticipated elevation of underlying groundwater [27 CCR §20240(c), §20330(a), and §22490(f)(6)], including the capillary fringe.
- C. The Discharger shall submit operations plans and any amended operation plans describing those WMU operations which could affect water quality, including, but not limited to [27 CCR §21760(b)]:
 - 1. A description of proposed treatment, storage, and disposal methods;
 - 2. Contingency plans for the failure or breakdown of waste handling facilities or containment systems, including notice or any such failure, or any detection of waste or leachate in monitoring facilities, to the Central Valley Water Board, local governments, and water users downgradient of the WMU(s); and
 - 3. A description of inspection and maintenance programs which will be undertaken regularly during disposal operations and the post-closure maintenance period.

VI. FACILITY SPECIFICATIONS

- A. Surface and subsurface drainage from outside of a WMU shall be diverted from the WMU [27 CCR §20365(e)].

- B. Collection and holding facilities associated with precipitation and drainage control systems shall be emptied immediately following each storm or otherwise managed to maintain the design capacity of the system [27 CCR §20365(d)].
- C. The Discharger shall promptly notify the Central Valley Water Board of any slope failure occurring at a WMU. Any failure which threatens the integrity of containment features or the WMU shall be promptly corrected in accordance with an approved method [27 CCR §21710(c)(2)].

VII. CONSTRUCTION SPECIFICATIONS

- A. All containment structures shall be designed by a California registered civil engineer, and construction shall be supervised and certified by a California registered civil engineer or a certified engineering geologist as meeting the prescriptive standards, or approved engineered alternative design, in accordance with this Order prior to waste discharge. WMUs shall receive a final inspection and approval of the construction by Central Valley Water Board staff before use of the WMU commences [27 CCR §22490(d)].
- B. Any report, or any amendment or revision of a report, that proposes a design or design change that might affect a WMU's containment features or monitoring systems shall be approved by a registered civil engineer or a certified engineering geologist, as appropriate [27 CCR §21710(d)].
- C. Materials used in containment structures shall have appropriate chemical and physical properties to ensure that such structures do not fail to contain waste because of pressure gradients, physical contact with waste or leachate, chemical reactions with soil or rock, climatic conditions, the stress of installation, or because of the stress of daily operations [27 CCR §22490(e) and §20320(a)].
- D. WMU liners shall be designed and constructed to contain the fluid, including gas, waste, and leachate [27 CCR §20330(a)].
- E. Hydraulic conductivities shall be determined primarily by appropriate field test methods in accordance with accepted civil engineering practice. The results of laboratory tests with both water and leachate, and field tests with water, shall be compared to evaluate how the field permeabilities will be affected by leachate. It is acceptable for the Discharger to use appropriate compaction tests in conjunction with laboratory hydraulic conductivity tests to determine field permeabilities

as long as a reasonable number of field hydraulic conductivity tests are also conducted [27 CCR §20320(c)].

- F. Hydraulic conductivities specified for containment structures other than the final cover shall be relative to the fluids (leachate) to be contained. Hydraulic conductivities for the final cover shall be relative to water [27 CCR §20320(b)].
- G. Leachate collection and removal systems shall be designed and operated to function without clogging through the scheduled closure of the WMU and during the post-closure maintenance period. The systems shall be tested at least annually to demonstrate proper operation. The results of the tests shall be compared with earlier tests made under comparable conditions [27 CCR §20340(d)].
- H. Leachate collection and removal systems shall be designed and constructed to ensure that there is no buildup of hydraulic head on the liner. The depth of fluid in the collection sump shall be kept at the minimum needed to ensure efficient pump operation [27 CCR §20340(c)].
- I. For Units constructed (or reconstructed) after July 18, 1997, all construction of liner systems and final cover systems shall be performed in accordance with a Construction Quality Assurance Plan certified by a registered civil engineer or a certified engineering geologist [27 CCR §20323] and approved by the Executive Officer.

VIII. REPORTING REQUIREMENTS

A. General Requirements

1. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall **notify the Central Valley Water Board by telephone** as soon as it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing within two weeks. The written notification shall state the nature, time and cause of **noncompliance**, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
2. The Discharger shall **immediately notify the Central Valley Water Board** of any **evidence of a release**, or of any flooding, equipment failure, slope failure, or other **change in site**

conditions which could impair the integrity of waste or leachate containment facilities or of precipitation and drainage control structures.

3. The Discharger shall **mail a copy of each** monitoring **report** and any other reports required by this Order to the appropriate office or the current address if an office relocates. Addresses for each office as of November 2008 are:

California Regional Water Quality Control Board
Central Valley Region
11029 Sun Center Drive #200
Rancho Cordova, CA 95670

California Regional Water Quality Control Board
Central Valley Region
1685 "E" Street
Fresno, CA 93706-2007

California Regional Water Quality Control Board
Central Valley Region
415 Knollcrest Drive, Suite 100
Redding, CA 96002

4. The Discharger shall **retain records of all monitoring information**, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Central Valley Water Board Executive Officer.

Such records shall show the following for each sample:

- a. Identity of sample and of the Monitoring Point or Background Monitoring Point from which it was taken, along with the identity of the individual who obtained the sample;
- b. Date, time, and manner of sampling;
- c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis;

- d. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
- e. Calculation of results; and
- f. Results of analyses, and the method detection limit (MDL) and practical quantitation limit (PQL) for each analysis.

Such records shall also include legible records of the volume and type of each waste discharged at each WMU and the manner and location of discharge. These waste discharge records shall be maintained at the facility until the beginning of the post-closure maintenance period, at which time copies of these records shall be sent to the Central Valley Water Board.

5. **All reports and transmittal letters shall be signed** by persons identified below:
- a. *For a corporation:* by a principal executive officer of at least the level of senior vice-president.
 - b. *For a partnership or sole proprietorship:* by a general partner or the proprietor.
 - c. *For a municipality, state, federal or other public agency:* by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in a, b or c above if;
 - i. the authorization is made in writing by a person described in a, b, or c of this provision;
 - ii. the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a WMU, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - iii. the written authorization is submitted to the Central Valley Water Board.

Any person signing a document under this Section shall make the following certification:

“I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for

obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”

6. In reporting the monitoring data, the Discharger shall arrange the **data in tabular form** so that the date, the constituents, the concentrations, and the units are readily discernible. The data shall be summarized in such a manner so as to illustrate clearly the compliance with waste discharge requirements or lack thereof.
7. The results of any monitoring done more frequently than required at the locations specified herein shall be reported to the Central Valley Water Board.

B. Reports to be Filed with the Central Valley Water Board

1. A transmittal **letter** explaining the essential points in each report shall accompany each report. Such a letter shall include a discussion of any violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a detailed time schedule for correcting the violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal.
2. Each monitoring report (e.g., Detection Monitoring Report, Constituents of Concern 5-Year Report) shall include a **compliance evaluation summary**. The summary shall contain at least:
 - a. For each monitored ground water body, a description and graphical presentation of the gradient and direction of **ground water flow** under/around the WMU, based upon water level elevations taken during the collection of the water quality data submitted in the report.
 - b. For each monitoring well addressed by the report, a description of the method and time of water level measurement, the type of pump used for **purgings** and the placement of the pump in the well, and the method of purging (pumping rate, equipment and methods used to monitor field pH, temperature, and conductivity during purging, calibration of the field equipment, results of pH,

- temperature, conductivity, and turbidity testing, well recovery time, and method of purge water disposal).
- c. For each Monitoring Point and Background Monitoring Point addressed by the report, a description of the type of pump (or other device) used and its placement for **sampling**, and a detailed description of the sampling procedure (number and description of the samples, field blanks, travel blanks, and duplicate samples taken, the type of containers and preservatives used, the date and time of sampling, the name and qualifications of the person actually taking the samples, and any other observations).
 - d. A **map or aerial photograph** showing the locations of observation stations, Monitoring Points, and Background Monitoring Points.
 - e. **Laboratory** statements of results of all analyses evaluating compliance with requirements.
 - f. An evaluation of the effectiveness of the leachate monitoring and control facilities, and of the run-off/run-on control facilities.
 - g. A summary and certification of completion of all Standard Observations for the WMU, for the perimeter of the WMU, and for the receiving waters. The terms 'Standard Observations' and 'receiving waters' as used in this document are defined below in section **XII. Definitions**.
 - h. The quantity and types of wastes discharged and the locations in the WMU where waste has been placed since submittal of the last such report.
3. The Discharger shall report by telephone concerning any **seepage from the disposal area** immediately after it is discovered. A written report shall be filed with the Central Valley Water Board within seven days, containing at least the following information:
 - a. a map showing the location(s) of seepage;
 - b. an estimate of the flow rate;

- c. description of the nature of the discharge (e.g., all pertinent observations and analyses); and
- d. corrective measures underway or proposed, and corresponding time schedule.

See **RESPONSE TO A RELEASE** below.

- 4. The Discharger shall submit an **Annual Monitoring Summary Report** to the Central Valley Water Board summarizing the monitoring results from the previous year. This report shall contain:
 - a. For each Monitoring Point and Background Monitoring Point, submit in **graphical format** the laboratory analytical data for all samples taken within at least the previous five calendar years. Each such graph shall plot the concentration of one or more constituents for the period of record for a given Monitoring Point or Background Monitoring Point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
 - b. Unless otherwise exempted by the Executive Officer, all monitoring analytical data obtained during the previous two six-month Reporting Periods, presented in tabular form as well as on computer disk, either in EXCEL format or in another file format acceptable to Central Valley Water Board staff. Data may be submitted in commonly available compressed format. The Central Valley Water Board regards the submittal of data in hard copy and electronic format as "...the form necessary for..." statistical analysis (27 CCR §20420(h)), in that this facilitates periodic review by the Central Valley Water Board's statistical consultant.
 - c. **A comprehensive discussion of the compliance record**, and the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements.

- d. A **map** showing the area and elevations in which filling has been completed during the previous calendar year.
- e. A **written** summary of the monitoring results, indicating any changes made or observed since the previous annual report.
- f. An evaluation of the effectiveness of the leachate monitoring/control facilities.

IX. PROVISIONS FOR MONITORING

A. General

- 1. The Discharger shall maintain a **written sampling and analysis plan** sufficient to assure compliance with the terms of this Order. Anyone performing sampling on behalf of the Discharger shall be familiar with the sampling and analysis plan.
- 2. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and regularly **calibrated** to ensure their continued accuracy.
- 3. The Discharger shall construct or abandon all **monitoring wells** to meet or exceed the standards stated in the State Department of Water Resources Bulletin 74-81 and subsequent revisions, and shall comply with the reporting provisions for wells required by Water Code Sections 13750 through 13755.
- 4. All sample analyses shall be conducted at a **laboratory accredited** for such analyses by the State Department of Health Services. The **Quality Assurance-Quality Control Program** must conform to EPA guidelines (e.g., "Laboratory Documentation Requirements for Data Validation," January 1990, USEPA Region 9) or to procedures approved by the Central Valley Water Board.
- 5. The director **of the laboratory** whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Central Valley Water Board.
- 6. Unless samples are from water supply wells or unless otherwise specified by Central Valley Water Board staff, all ground water samples to be analyzed for **metals** shall be field-filtered.

Filtration methods shall minimize the entrainment of air into the sample (by using, for example, in-line pressure filtration).

B. Sampling and Analytical Methods

1. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken within a span not to exceed 30 days, unless the Executive Officer approves a longer time period, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.
2. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval by the Executive Officer prior to use.
3. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., "trace" or "ND") in data from background monitoring points for that medium, the analytical method having the lowest MDL shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.
4. **"Trace" results** - results falling between the MDL and the PQL - shall be reported as such, and shall be accompanied by both the estimated MDL and PQL values for that analytical run.
5. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than

simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.

6. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. **The MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.
7. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.
8. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
9. The statistical method shall account for data below the PQL with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to §20415(e)(7) of Title 27 that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are

available to the facility. The Discharger's technical report, pursuant to §20415(e)(7) of Title 27, shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, California Code of Regulations, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".

10. Background for water samples shall be represented by the data from all samples taken from applicable background monitoring points during that reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under 27 CCR §20415(e)(8)(A-D)] in accordance with §20415(e)(8)(E) of Title 27, for review and approval by the Executive Officer.
11. The Discharger may propose an alternate statistical method [to the methods listed under title 27 section 20415(e)(8)(A-D)] in accordance with title 27 section 20415(e)(8)(E), for review and approval by the Executive Officer. Upon receiving written approval, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Central Valley Water Board staff.
12. The Discharger shall use the following non-statistical method for all analytes that are detected in less than 10% of the background samples. The non-statistical method shall be implemented as follows:
 - a. From the constituent of concern or monitoring parameter list, identify each analyte in the **current** sample that exceeds either its respective MDL or PQL. The Discharger shall conclude that the exceedance provides a preliminary

indication of a release or a change in the nature or extent of the release, at that monitoring point, if **either**:

- i. The data contains two or more analytes that are detected in less than 10% of background samples that equal or exceed their respective MDLs; or
 - ii. The data contains one or more analyte that equals or exceeds its PQL.
- b. **Discrete Retest** [27 CCR §20415(e)(8)(E)]:
- i. In the event that the Discharger concludes (pursuant to paragraph 12.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Central Valley Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated.
 - ii. For any given retest sample, the Discharger shall include, in the retest analysis, **only the laboratory analytical results for those analytes detected in the original sample**. As soon as the retest data are available, the Discharger shall conclude that there is measurably significant evidence of a release if two or more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL and shall:
 - a. **Immediately** notify the Central Valley Water Board about any constituent or constituents verified to be present at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and
 - b. Comply with section **IX.B.14** of this document, **Sampling and Analytical Methods**, if any constituent or constituents were verified to be present.
 - iii. Any analyte that triggers a discrete retest per this method shall be added to the monitoring parameter list

such that it is monitored during each regular monitoring event.

13. If the Executive Officer determines, after reviewing the submitted report in 12.b. above, that the detected constituent most likely originated from the WMU(s), the Discharger shall **immediately** implement the requirements of section **X.C., Release Has Been Verified**, of this document.
14. If the Discharger determines that there is measurably significant evidence of a release from the WMU at any monitoring point, the Discharger shall **immediately** implement the requirements of section **X.C., Release Has Been Verified**, of this document.

X. RESPONSE TO A RELEASE

A. Monitoring Point Evidence of a Release

If the Discharger determines that there is “measurably significant” evidence of a release from the WMU (i.e. the initial statistical comparison or nonstatistical comparison indicates, for any constituent of concern or monitoring parameter, that a release is tentatively identified), the Discharger shall [27 CCR §20420(j)]:

- a. **Notification — immediately notify Central Valley Water Board staff verbally** of the finding and **provide** written notification by certified mail **within seven days** of such determination. The notification shall, for each affected monitoring point, identify the monitoring parameters and constituents of concern that have indicated “measurably significant” evidence of a release from the WMU [27 CCR §20420(j)(1)];
- b. **Retest Optional** — can immediately initiate the verification (retest) procedure pre-approved by the Central Valley Water Board [pursuant to §20415(e)(8)(E) of Title 27] to verify that there is “measurably significant” evidence of a release from the WMU for a parameter or constituent which has indicated a release at a monitoring point [27 CCR §20420(j)(2)]; and

- c. **Next Step** — immediately following detection of a release [or after completing the retest pursuant to b) above and confirming the existence of a release], shall comply with the requirements of C. (Release Has Been Verified) below [27 CCR §20420(j)(3)].

B. **Physical Evidence of a Release**

If the Discharger determines there is significant **physical** evidence of a release, the Discharger shall notify the Central Valley Water Board **by certified mail within 7 days** of such determination, and within 90 days shall submit an amended report of waste discharge to make any appropriate changes to the detection monitoring program [27 CCR §20420(l)(1) & (2)].

C. **Release Has Been Verified**

1. If the detection was made based upon sampling and analysis for monitoring parameters, **immediately** sample all monitoring points in the affected medium at that WMU and determine the concentration of all constituents of concern. Because this constituent of concern scan does not involve statistical testing, the Discharger need collect and analyze only a single water sample from each monitoring point in the affected medium [27 CCR §20420(k)(1)].
2. The Discharger, **within 90 days** of determining “measurably significant” evidence of a release, shall submit an amended report of waste discharge to establish an evaluation monitoring program meeting the requirements of §20425 of Title 27 [27 CCR §20420(k)(5)].
3. The Discharger, **within 180 days** of determining “measurably significant” evidence of a release, shall submit to the Central Valley Water Board an initial engineering feasibility study for a corrective action program necessary to meet the requirements of §20430 of Title 27. At a minimum, the engineering feasibility study shall contain a detailed description of the corrective action measures that could be taken to achieve background concentrations for all constituents of concern [27 CCR §20420(k)(6)].
4. If the Discharger determines that there is “measurably significant” evidence of a release from the WMU at any monitoring point, the Discharger may demonstrate that a source other than the WMU

caused the evidence of a release or that the evidence is an artifact caused by an error in sampling, analysis, or statistical evaluation or by natural variation in groundwater, surface water, or the unsaturated zone. The Discharger may make a demonstration pursuant to §20420(k)(7) of Title 27 in addition to or in lieu of submitting both an amended report of waste discharge or an engineering feasibility study; however, the Discharger is not relieved of the requirements of §20420(k)(6) & (7) of Title 27 unless the demonstration successfully shows that a source other than the WMU caused the evidence of a release or that the evidence resulted from error in sampling, analysis, or statistical evaluation or from natural variation in groundwater, surface water, or the unsaturated zone. In making this demonstration, the Discharger shall notify the Central Valley Water Board by certified mail of the intent to make the demonstration **within seven days** of determining “measurably significant” evidence of a release. The report shall be submitted to the Central Valley Water Board **within 90 days** of determining “measurably significant” evidence of a release demonstrating that a source other than the WMU caused the evidence [27 CCR §20420(k)(7)].

5. The Discharger, **within 90 days** of establishing an Evaluation Monitoring Program, shall conduct an evaluation monitoring program to assess the nature and extent of the release from the WMU and to design a corrective action program meeting the requirements of §20430 of Title 27. At a minimum, an evaluation monitoring program for a WMU shall include:
 - a. An assessment of the nature and extent of the release from the WMU. This assessment shall include a determination of the distribution and concentration of each constituent of concern throughout the zone affected by the release. The Discharger shall submit this assessment to the Central Valley Water Board **within 90 days** of establishing an evaluation monitoring program [27 CCR §20425(b)].
 - b. Update the initial engineering feasibility study for corrective action based on the data collected to delineate the release and from the ongoing monitoring program. The Discharger shall submit this updated engineering feasibility study to the Central Valley Water Board **within 90 days** of establishing an evaluation monitoring program [27 CCR §20425(c)].

- c. Submit an amended report of waste discharge to establish a corrective action program meeting the requirements of §20430 of Title 27 based on the data collected to delineate the release and on the updated engineering feasibility study. The Discharger shall submit this report to the Central Valley Water Board **within 90 days** of establishing an evaluation monitoring program [27 CCR §20425(d)].

D. **Release Beyond Facility Boundary**

1. Any time the Discharger concludes that a release from the WMU has proceeded beyond the facility boundary, the Discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).
2. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release.
3. Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release.
4. Each time the Discharger sends a notification to Affected Persons, the Discharger shall provide the Central Valley Water Board, within seven days of sending such notification, with both a copy of the notification and a current mailing list of Affected Persons.

XI. **STANDARD CONDITIONS**

A. **Supervision and Certification**

1. All WMUs shall be **designed and constructed** under the direct supervision of a California registered civil engineer or a certified engineering geologist, as appropriate, and shall be certified by that individual as meeting the prescriptive standards, or approved engineered alternative design, and performance goals of Title 27 prior to waste discharge.
2. Designs of WMUs shall include a **Construction Quality Assurance Plan**, which shall:

- a. be submitted for review and approval by the Central Valley Water Board prior to construction;
 - b. demonstrate that the WMU has been constructed according to the specifications and plans as approved by the Central Valley Water Board; and
 - c. provide quality control on the materials and construction practices used to construct the WMU and prevent the use of inferior products and/or materials which do not meet the approved design plans or specifications.
3. **Closure** of each WMU shall be performed under the direct supervision of a California registered civil engineer or California certified engineering geologist.

B. Operations

1. The Discharger shall maintain in **good working order** and operate as efficiently as possible any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
2. For any **electrically** operated equipment at the site, the **failure** of which could cause loss of control or containment of waste materials, or violation of this Order, the Discharger shall employ safeguards to prevent loss of control over wastes. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means.
3. The fact that it would have been necessary to halt or reduce the permitted activity in Order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of the Order.
4. The discharge shall remain within the designated disposal area at all times.
5. By the effective date of waste discharge requirements, the Discharger shall have a plan for preventing and controlling **accidental discharges**, and for minimizing the effect of such events. This plan shall:

- a. Identify the possible sources of accidental loss or leakage of wastes from each waste storage, treatment, or disposal unit.
- b. Evaluate the effectiveness of present WMUs and operational procedures, and identify needed changes or contingency plans.
- c. Predict the effectiveness of the proposed changes in waste management facilities and procedures and provide an implementation schedule containing interim and final dates when changes will be implemented.

The Central Valley Water Board, after review of the plan, may establish conditions that it deems necessary to control leakage and minimize its effects.

6. Any direct-line discharge to a surface impoundment shall have fail-safe equipment or operating procedures to prevent overflowing.
7. Surface impoundments shall be designed, constructed and maintained to prevent scouring and/or erosion of the liners and other containment features at points of discharge to the impoundments and by wave action at the waterline.
8. Leachate removed from a surface impoundment LCRS shall be discharged to the impoundment from which it originated.
9. Solids which accumulate in a surface impoundment shall be periodically removed to maintain minimum freeboard requirements and to maintain sufficient capacity for the surface impoundment leachate and for the discharge of wastes. Prior to removal of these solids, sufficient samples shall be taken for their characterization and classification pursuant to Article 2, Subchapter 2 of Title 27. The rationale for the sampling protocol used, the results of this sampling, and a rationale for classification of the solids shall be submitted to the Central Valley Water Board for review. The solids will be discharged to an appropriate WMU based on characterization.
10. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control.

C. Siting

1. New WMUs for Group A and B wastes shall not be located on Holocene faults. Units for Group C wastes may be located on Holocene faults if displacement will not allow escape of wastes or cause irreparable damage to containment structures [27 CCR §22490(a)(1)].
2. New WMUs shall be outside areas of rapid geologic change. Exemptions may be allowed by the RWQCB if containment structures are designed and constructed to preclude failure [27 CCR §22490(a)(2)].
3. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes, and shall either be contained on-site or be discharged in accordance with applicable storm water regulations.

D. Closure

1. New and existing WMUs shall be closed so that they no longer pose a threat to water quality. No post closure land uses shall be permitted that might impair the integrity of containment structures [27 CCR §22510(a)].
2. WMUs shall be closed according to an approved closure and post closure maintenance plan which provides for continued compliance with applicable standards for waste containment, precipitation and drainage controls and monitoring throughout closure and the post closure maintenance period [27 CCR §22510(b)].
3. Closed WMUs shall be provided with at least two **permanent monuments**, installed by a licensed land surveyor or by a registered civil engineer authorized to perform land surveying, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period [27 CCR §20950(d)].
4. Final cover slopes for Group A and Group B waste piles shall not be steeper than a horizontal to vertical ratio of one and three quarters to one, and shall have minimum of one fifteen-foot wide bench for every fifty feet of vertical height [27 CCR §21090(a)].

E. Post-Closure

1. WMUs shall be closed so that they no longer pose a threat to water quality. No post closure land uses shall be permitted that might impair the integrity of containment structures [27 CCR §22510(a)].
2. The post-closure maintenance period shall end when the Central Valley Water Board determines that water quality aspects of reclamation are complete and waste no longer poses a threat to water quality [27 CCR §22510(h)].
3. The owner of the mine shall have the continuing responsibility to assure protection of usable waters from discharged wastes and from gases and leachate generated by discharged waste during the active life, closure, and post-closure maintenance period of the WMUs and during subsequent use of the property for other purposes.

XII. DEFINITIONS

Unless otherwise stated, all terms are as defined in Chapter 2, Division 7, of the California Water Code (Section 13050 et seq.), in Article 2, Chapter 2, Division 2, Title 27 of the California Code of Regulations (27 CCR §20005 et seq.), and in Section 258.2, and elsewhere in Part 258, Title 40 of the Code of Federal Regulations.

The following additional definitions apply to the Order:

- A. “**Affected Persons**” means all individuals who either own or occupy land outside the boundaries of the parcel upon which the WMU is located that has been or may be affected by the **release** of leachate or waste constituents (in gas or liquid phase) from a WMU.
- B. “**Background Monitoring Point**” means a device (e.g., well) or location (e.g., a specific point along a lakeshore), upgradient or sidegradient from the WMU, or as otherwise approved by the Executive Officer, where water quality samples are taken that are not affected by any release from the WMU and that are used as a basis of comparison against samples taken from downgradient Monitoring Points.
- C. “**Composite liner**” means a liner that consists of two or more components, which include a Synthetic Liner in direct and uniform contact with an underlying layer of prepared, low-permeability soil such that the net permeability of the resulting combination is significantly less

than would be expected by reference to the permeability of the individual components layers.

- D. Unless otherwise specified, “**composite sample**” means a combination of individual samples either collected over a specified sampling period or collected over an area at one time (synoptically):
1. at equal time intervals,
 2. at varying time intervals so that each sample represents an equal portion of the media to be sampled.

The duration of the sampling period shall be specified in the Monitoring and Reporting Program. The method of compositing shall be reported with the results. “**Constituents of Concern (COC)**” means those constituents which are likely to be in the waste in the WMU or which are likely to be derived from waste constituents in the event of a release.

- E. “**Daily maximum concentration**” means the highest measurement made on any single discrete sample or composite sample.
- F. “**Grab sample**” means a discrete sample collected in less than 15 minutes.
- G. “**Matrix effect**” means any change in the method detection limit or practical quantitation limit for a given analyte as a result of the presence of other constituents - either of natural origin or introduced **by** humans as a result of a release or spill - that are present in the sample of water or soil-pore gas being analyzed.
- H. “**Method detection limit (MDL)**” means the lowest constituent concentration associated with a 99% reliability of a “non-zero” analytical result. The MDL shall reflect the detection capabilities of the specific analytical procedure and equipment used by the laboratory. MDLs reported by the laboratory shall not simply be restated from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs are expected to closely agree with published USEPA MDLs. If the lab suspects that, due to matrix or other effects, the detection limit for a particular analytical run differs significantly from the laboratory-derived MDL, the results should be flagged accordingly, along with an estimate of the detection limit achieved.
- I. “**Monitoring Parameters**” means the short list of constituents and parameters used for the majority of monitoring activity at a given WMU. Monitoring for the short list of Monitoring Parameters constitutes

“indirect monitoring,” in that the results are used to indicate indirectly the success or failure of adequate containment for the longer list of Constituents of Concern.

- J. **“Monitored Media”** means those water-, solid-, or gas-bearing media that are monitored pursuant to the Monitoring and Reporting Program. The Monitored Media may include:
1. Ground water in the uppermost aquifer, in any other portion of the zone of saturation in which it would be reasonable to anticipate that waste constituents migrating from the WMU could be detected, and in any perched zones underlying the WMU,
 2. Any bodies of surface water that could be measurably affected by a release,
 3. Soil pore liquid beneath and/or adjacent to the WMU, and
 4. Soil pore gas beneath and/or adjacent to the WMU.
- K. **“Monitoring Point”** means a device (e.g., well) or location (e.g., a specific point along a lakeshore), downgradient from the WMU and that is assigned in this Order, at which samples are collected for the purpose of detecting a release by comparison with samples collected at Background Monitoring Points.
- L. **“Monthly average concentration”** means the arithmetic mean of measurements made during the month.
- M. **“Monthly average discharge”** means the total discharge by volume during a calendar month divided by the number of days in the month that the facility was discharging (e.g. gallons per day, cubic feet per day).
- Where less than daily sampling is required by this Order, the monthly average shall be determined by the summation of all the measured discharges divided by the number of days during the month when the measurements were made.
- N. **“Order,”** as used throughout this document, means the Waste Discharge Requirements. The Monitoring and Reporting Program and Standard Provisions and Reporting Requirements are incorporated by reference into the Waste Discharge Requirements.
- O. **“Practical quantitation limit (PQL)”** means the lowest constituent concentration at which a numerical concentration can be assigned with

reasonable certainty that its value represents the constituent's actual concentration in the sample. Normally PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure. The PQL shall reflect the quantitation capabilities of the specific analytical procedure and equipment used by the laboratory. PQLs reported by the laboratory shall not simply be restated from U.S. EPA analytical method manuals. In relatively interference-free water, laboratory-derived PQLs are expected to closely agree with published U. S. EPA PQLs. If the lab suspects that, due to matrix or other effects, the quantitation limit for a particular analytical run differs significantly from the laboratory-derived PQL, the results should be flagged accordingly, along with an estimate of the quantitation limit achieved.

- P. **"Reporting Period"** means the time interval during which samples are collected and analyzed, and the results then reported to the Central Valley Water Board, to comply with a specified monitoring and reporting frequency. The maximum reporting period for analysis of all Constituents of Concern is five years; for Monitoring Parameters it is six months (generally, Spring/Summer = April 1 to September 30, and Fall/Winter = October 1 to March 31). The Reporting Period for the Annual Summary Report extends from April 1 of the previous year to March 31 of the current year. The due date for the submittal of any given report will be 15 days after the end of its Reporting Period, unless otherwise stated.
- Q. **"Receiving Waters"** refers to any surface or ground water which actually or potentially receives waste constituents, leachate, or surface or ground waters which come in contact with waste materials or contaminated soils.
- R. **"Sample size"**:
1. For Monitoring Points, means the number of data points obtained from a given Monitoring Point during a given Reporting Period used for carrying out the statistical or non-statistical analysis of a given analyte during a given Reporting Period; or
 2. For Background Monitoring Points, means the number of new and existing data points collected under §20415(e)(11 and 12) from all applicable Background Monitoring Points in a given monitored medium—used to collectively represent the background concentration and variability of a given analyte in carrying out statistical or non-statistical analysis of that analyte during a given Reporting Period.

S. **“Standard Observations”** means:

1. For Receiving Waters:
 - a. Floating and suspended materials of waste origin: presence or absence, source, and size of affected area;
 - b. Discoloration and turbidity: description of color, source, and size of affected area;
 - c. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
 - d. Evidence of water uses: presence of water-associated wildlife;
 - e. Flow rate; and
 - f. Weather conditions: wind direction and estimated velocity, total precipitation during recent days and on the day of observation;
2. Along the perimeter of the WMU:
 - a. Evidence of liquid leaving or entering the WMU, estimated size of affected area, and flow rate (show affected area on map);
 - b. Evidence of odors: presence or absence, characterization, source, and distance of travel from source; and
 - c. Evidence of erosion and/or of daylighted refuse.
3. For the WMU:
 - a. Evidence of ponded water at any point on the waste management facility (show affected area on map);
 - b. Evidence of odors: presence or absence, characterization, source, and distance of travel from source;
 - c. Evidence of erosion and/or of daylighted refuse; and

T. **“Standard Analysis and Measurements”** means:

1. Turbidity, in NTU;

2. Water elevation to the nearest 1/100th foot above mean sea level; and
 3. Sampling and statistical/non-statistical analysis of the Monitoring Parameters.
- U. “**Synthetic Liner**” means a layer of flexible, man-made material that is installed in accordance with the standard of the industry over an area of land prior to the discharge of waste there.
- V. “**VOC_{water}**” (Volatile Organics Monitoring Parameter for Water) means the composite monitoring parameter encompassing all VOCs that are detectable in less than ten percent of applicable background samples from a monitored water-bearing medium (e.g., the unsaturated zone, the uppermost aquifer, a zone of perched groundwater, or a surface water body). This parameter is analyzed via the non-statistical analytical method described elsewhere in this Order to identify a release to waters of the state of VOCs whose presence in background water is detected too infrequently to allow statistical analysis.
- W. “**VOC_{spg}**” (Volatile Organics Monitoring Parameter for Soil Pore Gas) means Monitoring Parameters addressing all volatile organic constituents detectable in a sample of soil pore gas.
- X. “**Volatile organic constituents (VOCs)**” means the suite of organic constituents having a high vapor pressure. The term includes at least the 47 organic constituents listed in Appendix I to 40 CFR Part 258.