DRAFT ORDER R1-2020-0001 Waste Discharge Requirements
for
Discharges related to Green Diamond Resource Company's Forest Management Activities Conducted Within
the Elk River Watershed
in
Humboldt County

The California Regional Water Quality Control Board, North Coast Region (hereinafter Regional Water Board), *finds*:

1. Water Code section 13260(a) requires that any person discharging waste or proposing to discharge waste within any region that could affect the quality of the waters of the state, other than into a community sewer system, must file with the appropriate Regional Water Board a report of waste discharge (ROWD) containing such information and data as may be required.

2. Under Water Code section 13263, the Regional Water Board shall prescribe requirements as to the nature of any proposed or existing discharge with relation to the receiving water conditions. Requirements shall implement any relevant Water Quality Control Plan requirements and take into consideration beneficial uses and objectives reasonably required to protect such uses, and other relevant factors.

3. In July 2007, Green Diamond Resource Company (GDRCo) began implementing the Aquatic Habitat Conservation Plan (AHCP) and Candidate Conservation Agreement with Assurances approved in June 2007 by the National Marine Fisheries Service and the U.S. Fish & Wildlife Service for the conservation of the following aquatic species: Chinook salmon, coho salmon, steelhead, cutthroat trout, rainbow trout, southern torrent salamander, and tailed frog. The biological goals of the AHCP are to maintain cool water temperature, minimize and mitigate human-caused sediment inputs, provide for the recruitment of large wood into all stream classifications, and allow for the maintenance or increase of populations of the covered species through minimization of timber harvest-related impacts.

4. GDRCo's Operating Conservation Program is contained in section 6.2 of the AHCP and details all of the enforceable measures to be implemented as part of timber harvest operations throughout its timberlands covered by the AHCP. The elements listed below are tailored to the needs of specific hydrographic planning areas as defined and described in AHCP section 4.2.1.5. The Operating Conservation Program includes:

   - Riparian Management Measures (AHCP section 6.2.1) - buffer zone widths, canopy retention requirements, tree selection guidelines

   - Slope Stability Measures (AHCP section 6.2.2) - identification of geologic features, buffer zone widths, harvest limitations, site-specific evaluations by a professional geologist

- Road Management Measures (AHCP section 6.2.3) - decommissioning and upgrading standards, landing and road construction requirements, accelerated treatment of legacy sediment sources, hydrologic disconnection standards, inspection protocol, timing protocols

- Harvest-Related Ground Disturbance Measures (AHCP section 6.2.4) - yarding restrictions, site preparation restrictions, seasonally appropriate access restrictions

5. In June 2010, the Regional Water Board adopted *Waste Discharge Requirements for Discharges Related to Road Management and Maintenance Activities Conducted Pursuant to the Green Diamond Resource Company Aquatic Habitat Conservation Plan in the North Coast Region, Region Wide* (Road Management WDRs) (Order No. R1-2010-0044) and in October 2012 the Regional Water Board adopted *Waste Discharge Requirements for Discharges Related to Green Diamond Resource Company's Forest Management Activities Conducted Within the Area Covered by its Aquatic Habitat Conservation Plan in the North Coast Region, Humboldt and Del Norte Counties* (Forest Management WDRs) (Order R1-2012-0087) for associated ownership-wide activities on GDRCo's properties within the North Coast Region. The Road Management WDR covers systematic road upgrading and decommissioning, as well as maintenance and monitoring of the road system associated with the Road Management Plan from GDRCo's Aquatic Habitat Conservation Plan (AHCP). All activities carried out under the Road Management Plan comply with techniques and restrictions designed to prevent and minimize impacts to water quality, as detailed in the AHCP and the Master Agreement for Timber Operations. The Forest Management WDR covers activities associated with timber harvesting, including timber product harvest, silvicultural regimes and methods, timber stand regeneration and improvement, road construction and reconstruction, minor forest product harvest, and in-stream and riparian restoration.

6. Together the two WDRs provide complete, programmatic, ownership-wide WDR coverage to the majority of GDRCo's commercial timberland on the west slopes of the Klamath Mountains and the Coast Range in Del Norte and Humboldt counties. This area includes portions of the Smith River, Lower Klamath River, Redwood Creek, Maple Creek, Little River, Mad River, Jacoby Creek, Freshwater Creek, Elk River, Salmon Creek, Van Duzen River, and the Eel River Watersheds.

7. This Order supersedes those portions of the GDRCo Forest Management WDR that apply to certain activities conducted by GDRCo on its timberlands in the Upper Elk River Watershed (see Attachment A of this Order, Elk River Location Map). The Order has been developed to be consistent with all of the hillslope indicators and numeric targets contained in the 2016 Action Plan for the Upper Elk River Sediment Total Maximum Daily Load (TMDL Action Plan) (NCRWQCB, 2016) and ensure that all anthropogenic discharges of sediment are eliminated to the extent feasible and, if not feasibly eliminated, minimized, as soon as feasible, but no later than 2031. Specific requirements of this Order and their rationale are presented in the findings below.

8. The Water Quality Control Plan for the North Coast Region (Basin Plan), is the Regional Water Board's master water quality control planning document. It identifies beneficial uses and water quality objectives for waters of the state, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The beneficial uses for the Upper Elk River and its tributaries include:

    a. Municipal and Domestic Supply (MUN)
    b. Agricultural Supply (AGR)
    c. Industrial Service Supply (IND)
    d. Industrial Process Supply (PRO)
    e. Groundwater Recharge (GWR)
    f. Freshwater Replenishment (FRSH)
    g. Navigation (NAV)
    h. Hydropower Generation (POW)
    i. Water Contact Recreation (REC-1)
    j. Non-Contact Water Recreation (REC-2)
    k. Commercial and Sport Fishing (COMM)
    l. Cold Freshwater Habitat (COLD)
    m. Warm Freshwater Habitat (WARM)
    n. Wildlife Habitat (WILD)
    o. Preservation of Areas of Special Rare, Threatened, or Endangered Species (RARE)
    p. Migration of Aquatic Organisms (MIGR)
    q. Spawning, Reproduction, and/or Early Development (SPWN)
    r. Aquaculture (AQUA)
    s. Native American Culture (CUL)
    t. Flood Peak Attenuation/Flood Water Storage (FLD)
    u. Wetland Habitat (WET)

9. At least five of the identified beneficial uses are considered as impaired, including MUN, AGR, COLD, and to a lesser extent both REC-1 and REC-2. The primary beneficial uses of concern for this Order are domestic and agricultural water supplies and the cold freshwater habitat. Existing public and private infrastructure (e.g., roads, bridges, septic systems, and houses) are impacted by increased flooding, creating risks to public safety and nuisance conditions.

10. The Elk River Watershed is listed as an impaired water body under section 303(d) of the Clean Water Act due to sedimentation/siltation. Increased rate and depth of flooding due to sediment has caused impacts to spawning habitat, water supplies and other property damage in this unique and sensitive Watershed.

11. On May 12, 2016, the Regional Water Board approved the TMDL Action Plan. On April 4, 2018, the United States Environmental Protection Agency approved the TMDL Action Plan, the final step in the process necessary for the Action Plan to be amended into the Water Quality Control Plan for the North Coast Region (Basin Plan), following approvals by the State Water Resources Control Board on August 1, 2017, and the Office of Administrative Law on March 8, 2018.

12. The TMDL Action Plan includes a phased total maximum daily load (TMDL) for sediment and describes the implementation actions necessary to attain water quality standards in the Upper Elk River Watershed. The goal of the TMDL Action Plan is to achieve sediment related water quality standards, including the protection of the beneficial uses of water in the upper watershed and prevention of nuisance conditions. The TMDL Action Plan establishes the sediment load consistent with current conditions in the impacted reaches, identifies a process for assessing and implementing necessary and feasible remediation and restoration actions, and describes a program of implementation to be considered and incorporated into regulatory and non-regulatory actions of the Regional Water Board and other stewardship partners in the watershed.

13. Site specific assessment of water quality conditions in the Upper Elk River Watershed presented in the Technical Analysis for Sediment (Tetra Tech, Inc., 2015) confirm that sediment discharges from timberlands in the upper watershed and sedimentation in the impacted reaches, combining with other natural (e.g., tectonics, geology, soil characteristics, geomorphology, climate and vegetation) and anthropogenic (e.g., timber harvest, ranching, farming, roads, and residential development) factors exceed the water quality objectives for sediment, suspended material, settleable matter, and turbidity and result in adverse impacts to several beneficial uses, including: domestic water supplies (MUN); agricultural water supplies (AGR), cold water habitat (COLD); spawning, reproduction and early development (SPWN); rare, threatened, or endangered species (RARE); and recreation (REC-1 and REC-2). Sedimentation in the impacted reaches also has resulted in conditions of nuisance, including increased rates and depth of annual flooding and loss of property, use of property, access to property, and risk to human health and welfare. The impacted reach extends from the confluence of Brown's Gulch on the North Fork Elk and Tom Gulch on the South Fork Elk to the mainstem Elk River at Berta Road and is contained within the delineated boundaries of the Upper Elk River Watershed.

14. The TMDL sediment source analysis identifies the key sediment source categories that produce sediment in the Upper Elk River Watershed. Sediment discharges resulting from timber harvest and other land-management activities in the most recent analysis time period (2004-2011) are (in order of significance): in-channel sources (headward channel incision, bank erosion, and streamside landslides), discharges from existing land use-related sediment discharge sites, other road-related discharges, and harvest-related discharges.

15. Water quality indicators and associated numeric targets are designed to measure progress towards attaining water quality objectives for suspended material, settleable material, turbidity and sediment. The water quality indicators are divided into hillslope and instream, as identified in Tables 2 and 3 of the TMDL Action Plan, respectively. The hillslope indicators and numeric targets in Table 2 are designed to inform Board actions and can be incorporated into orders, as appropriate and to the maximum extent feasible to implement the TMDL Action Plan. The instream water quality indicators and targets are designed to help assess the overall effectiveness of the program of implementation and confirm progress towards attainment of applicable water quality standards.

16. TMDLs must be established at levels necessary to attain and maintain the applicable water quality standards with seasonal variations and a margin of safety (MOS) (40 CFR § 130.7(c)(1)). The TMDL represents the maximum amount of a pollutant that can be discharged to a waterbody, taking into account critical conditions of stream flow, loading, and water quality parameters. The TMDL is equivalent to the loading capacity of the waterbody for the pollutant in question.

17. The Upper Elk River Sediment TMDL is set equal to the loading capacity of the waterbody. The loading capacity of the Upper Elk River Watershed is defined as the total sediment load (natural and management-related) that can be discharged into the Upper Elk River and its tributaries without impacting beneficial uses of water, causing an exceedance of water quality objectives, reducing the quality of high quality water, or creating nuisance conditions. Because capacity for sediment is limited by the ongoing aggradation in the impacted reaches, the loading capacity for additional sediment is defined as zero until the capacity of the impacted reaches can be expanded.

18. The program of implementation identifies a combination of regulatory and non-regulatory actions that will lead to the attainment of water quality objectives, recovery of beneficial uses, protection of high-quality waters, and prevention of nuisance conditions in the Upper Elk River Watershed. Implementation of the first phase, which includes this Order, requires control of all existing and potential future sediment sources in the upper watershed. Concurrently, the (non-regulatory) Elk River Recovery Assessment and the Elk River Watershed Stewardship Program are being implemented. The Elk River Recovery Assessment (completed in November 2018) findings indicate that to restore lost assimilative capacity through improved hydrologic function will require a combination of sediment reduction, sediment remediation, channel restoration, and riparian management activities. It is anticipated that all stakeholders in the watershed will need to contribute to these activities either through the Watershed Stewardship Program or on an individual basis. Since the required recovery activities extend beyond the impacted reach and cross land ownership boundaries, participation in the Watershed Stewardship Program is highly encouraged to better coordinate the planning and implementation of restoration related projects.

19. WDRs are the primary regulatory mechanism utilized by the Regional Water Board to control the nonpoint source pollution resulting from past and ongoing timber harvesting activities, the dominant land use in the Upper Elk River Watershed. Existing adverse cumulative impacts from current and past land management practices combined with watershed characteristics (such as sensitive geology and altered hydrologic conditions) require that additional actions be taken beyond those currently being implemented in the Upper Elk River Watershed. Updated management actions are necessary to prevent continued impact to beneficial uses and contributions to downstream nuisance conditions that result from ongoing timberland management. The WDRs must consider the unique watershed factors that influence the discharge of sediment so as to properly update management practices and better manage watershed effects consistent with the TMDL Action Plan.

20. In Resolution No. 2017-0046 adopting the TMDL Action Plan the State Water Resources Control Board stated the following understandings of the TMDL Action Plan's requirements: (1) that hillslope indicators and numeric targets in Table 2 apply throughout a discharger's area of land ownership and not solely in areas of active harvest, (2) the Regional Water Board's WDRs and any other orders for the two major landowners that conduct timber harvesting will incorporate specific provisions that implement all of the hillslope indicators and numeric targets in Table 2, unless the Regional Board makes specific findings about why any omitted hillslope indicators or numeric targets are not appropriate or feasible, (3) the WDRs and any other orders for the two major landowners will also contain any additional specific provisions to ensure that all anthropogenic discharges of sediment are minimized and eliminated, and (4) in the absence of a future amendment to the TMDL Action Plan, including an amendment based on successful implementation of the Watershed Stewardship Program resulting in expanded sediment loading capacity in the impacted reach, the WDRs and any other orders will require the landowners to achieve the zero load allocation for all anthropogenic discharges of sediment as soon as feasible, but no later than 2031. In a letter dated October 15, 2018, the State Water Board provided the following clarification to understanding 3 above, as follows: "the WDRs and any other orders for the two major landowners will also contain any additional specific provisions to ensure that all anthropogenic discharges of sediment are ~~minimized and~~ eliminated <u>to the extent feasible and, if not feasibly eliminated, minimized, as soon as feasible but not later than 2031</u>" [strikeout and underline are from the original October 15, 2018 letter].

WDR Revisions to Comply with Upper Elk River TMDL Action Plan

21. GDRCo owns and/or conducts timber harvesting activities on approximately 2,059 acres (17.2%) of the 28,544-acre Upper Elk River Watershed. GDRCo's ownership in the South Fork Elk River Watershed is located in the tributaries McCloud Creek, Tom Gulch, and Railroad Gulch and consists of 1,905 acres. The South Fork is one of the two major tributaries of Elk River, the other being the North Fork Elk River. GDRCo also own approximately 154 acres located along the ridge line of the Lower North Fork Elk River.

22. Conditions specific to the Elk River in GDRCo's Roads Management and Forest Management WDRs rely, in large part, upon its Operating Conservation Program, with specific prescriptions described in the South Fork Elk River Management Plan (SFERMP). GDRCo initially developed the SFERMP in 2006 as a sediment reduction strategy for its timberland ownership within the South Fork of Elk River Watershed. The SFERMP was the basis for GDRCo's South Fork Elk River WDR adopted by the Regional Water Board in 2006. The SFERMP was revised in 2012 prior to adoption of the Forest Management WDR. The key goal of the sediment reduction strategy is to implement operational procedures and measures specifically aimed at reducing sediment production, transport, and deposition into watercourses. The SFERMP specifically describes the measures the company will apply to ensure that its operations will achieve this goal, protect water quality and beneficial uses, and mitigate or avoid significant impacts to aquatic habitat. These measures were conceived, developed, and revised in the context of watershed-specific physical

characteristics, past management activities, and future GDRCo management objectives of Elk River, as well as to meet the pending TMDL requirements.

23. Recognizing the underlying geology and the erodible nature of the soils within significant areas of the South Fork Elk River Watershed and acknowledging that GDRCo planned to re-enter the South Fork Elk River Watershed (within its ownership) to harvest timber and maintain road systems, it was deemed necessary and appropriate that watershed specific measures be instituted to ensure the continued protection and enhancement of water quality and aquatic habitat. The SFERMP addresses watershed specific operating procedures in the following five key categories: A) Riparian Prescriptions, B) Geological Prescriptions, C) Harvesting, Yarding and Hauling Prescriptions, D) Road Management, and E) Seasonal Restrictions.

24. Since 2006, GDRCo has harvested a total of 706 acres in the South Fork Elk River Watershed. A total of 215 road-related sediment discharge sites have been treated and an additional 7 road sites will be treated by 2021, therefore completing all of the sites identified in a watershed-wide road assessment inventory. Approximately 29,542 cubic yards of sediment have been prevented from discharging due to treatment of these road sites.

25. Finding 22 of the GDRCo Forest Management WDR states, “At such time as the [Upper Elk River Sediment] TMDL is adopted, the provisions of the Elk River component of this Order and/or the South Fork Elk River Management Plan will be reviewed and adjusted, as appropriate, to ensure compliance with the TMDL.” Compliance with the TMDL Action Plan on industrial timberlands in the Upper Elk River primarily entails that the company’s operations implement the hillslope targets and load allocation.

26. Table 2 from the TMDL Action Plan describes Hillslope Water Quality Indictors and Numeric targets (see below). Hillslope indicators fall into four general categories; roads, harvest related, management discharge sites, and specific Upper Elk River Watershed indicators. Following final adoption of the TMDL Action Plan, Regional Water Board staff evaluated the SFERMP to: 1) determine whether the provisions are adequate to implement all the TMDL hillslope indicators and numeric targets, and 2) where the provisions of the SFERMP may not fully implement indicators and targets, requested that GDRCo propose additional measures, where such feasible and appropriate measures exist, to implement the hillslope indicators and numeric targets. The results of that evaluation are described in Findings 28 through 44 below.

Table 2: Hillslope Water Quality Indicators and Numeric Targets‡

Indicator	Numeric Target	Associated Area
Common Road Indicators		
Hydrologic connectivity of roads to watercourses	100% of road segments hydrologically disconnected from watercourses	All roads
Sediment delivery due to surface erosion from roads	Decreasing road surface erosion	

Sediment delivery due to road-related landslides	Decrease in sediment delivery from new and reactivated road-related landslides	
Common Harvest-Related Indicators		
Sediment delivery due to surface erosion from harvest areas	100% of harvest areas have ground cover sufficient to prevent surface erosion	All harvest areas
Sediment delivery from open slope landslides due to harvest-related activities	Decrease in sediment delivery from new and reactivated open-slope landslides	All open slopes
Sediment delivery from deep seated landslides due to harvest-related activities	Zero increase in discharge from deep-seated landslides due to management-related activities	All deep-seated landslides
Common Management Discharge Site Indicators		
New management discharge sites	No new management discharge sites created	Class I, II, and III watercourses
Specific Upper Elk River Watershed Indicators		
Headward incision in low order channels	Zero increase in the existing drainage network	Class II/III catchments
Peak flows	Less than 10% increase in peak flows in 10 years related to timber harvest	Class II/III catchments
Channels with actively eroding banks	Decreasing length of channel with actively eroding banks	Class I, II, and III watercourses
Characteristics of riparian zones (i.e., 300 feet on either side of the channel) associated with Class I and II watercourses	Improvement in the quality/health of the riparian stand so as to promote 1) delivery of wood to channels, 2) slope stability, and 3) ground cover	Class I and II watercourses
Characteristics of riparian zones (i.e., 150 feet on either side of the channel) associated with Class III watercourses	Improvement in the quality/health of the riparian stand so as to promote 1) delivery of wood to channels, 2) slope stability, and 3) ground cover	Class III watercourses

† The hillslope indicators and numeric targets in Table 2 are designed to inform Board actions and can be incorporated into orders, as appropriate and to the maximum extent feasible. [Footnote is part of Table 2 as adopted in the TMDL Action Plan.

27. Following adoption of the TMDL Action Plan and further discussions with Regional Water Board staff, GDRCo revised specific provisions of the SFERMP to implement the TMDL hillslope targets and load allocation, and on August 23, 2019, submitted the revised SFERMP (or plan). The revisions primarily address expanded riparian management zone (RMZ) protection measures, modified annual harvest limits, and yarding prescriptions. The plan now applies to all of GDRCo's timberlands in the Elk River watershed and will therefore be referred to hereinafter as the Elk River Management Plan (ERMP) (included as Attachment B of this Order). Regional Water Board staff found that the ERMP is expected to implement most of the TMDL Hillslope Water Quality Indicators, but additional conditions are necessary to implement certain Specific Upper Elk River Watershed Indicators. With the additional protection measures included, the Regional Water Board finds that GDRCo's timber harvest and related management activities in the Elk River Watershed will be consistent with the TMDL Action Plan. This Order supersedes those provisions of Order No. R1-2012-087 that applied to the Upper Elk River and

establishes revised requirements for GDRCo Forest Management Activities conducted within the Upper Elk River Watershed.

28. Roads Indicators: Road-related targets from Table 2 include: 100% of road segments hydrologically disconnected from watercourses, decreasing road surface erosion, and decrease in sediment delivery from new and reactivated road-related landslides. Section D of the ERMP describes road management prescriptions designed specifically for the unique geologic conditions on the Elk River and are anticipated to implement road-related targets from Table 2. The ERMP road management prescriptions include specifications for road decommissioning, road upgrading, new road and landing construction, road-related sediment reduction, road maintenance, and seasonal restrictions. In recognition of the sensitive geology and the erodible nature of the soils within large areas of the Elk River Watershed, GDRCo has developed a watershed plan incorporating measures designed to reduce sediment production from surface erosion from new and existing roads and decommission roads no longer needed for active management activities, hydrologically disconnect roads to the extent feasible, and identify, prioritize, and treat road related sediment discharge sources.

29. A full road assessment within GDRCo's Elk River ownership was completed in 2006. GDRCo developed and has been following the South Fork Elk River Road Management Plan that prioritized all assessment sites located within the drainage and proposed recommendations for treatment by the end of 2015. As of the end of 2018, GDRCo has completed 93% of the sites, representing approximately 96% of the sediment volume that could potentially deliver to a watercourse. GDRCo will treat the remaining 7% of the controllable sediment discharge sites by the end of 2021.

30. The ERMP road management plan specifies measures designed to ensure hydrologic disconnection of roadways from watercourses to the maximum extent feasible. As it is impossible to hydrologically disconnect 100% of a road that crosses a watercourse, the remaining road surface immediately adjacent to a watercourse that cannot be disconnected will be stabilized to prevent or minimize mobilization and delivery of fine sediment. Seasonal road use restrictions ensure that the majority of operational activities occur between May 15 and October 15. Given the sensitivity of soils and underlying bedrock in the watershed, GDRCo limits winter operations to All Terrain Vehicles or only foot traffic for some roads to access the property within the watershed so that THP layout, tree planting, and cutting activities, as well as other administrative functions can occur throughout the year.

31. In order to prevent or minimize sediment delivery from new or reactivated landslides, section B of the ERMP, Geologic Prescriptions, describe conditions requiring field assessment by a professional geologist when road construction is proposed in locations that could impact unstable areas or geomorphic features related to landsliding.

32. Harvest-Related Indicators: harvest related targets from Table 2 specifies 100% of harvested areas have ground cover sufficient to prevent surface erosion, decrease in sediment delivery from new and reactivated open-slope landslides, and zero

increase in discharge from deep-seated landslides due to management-related activities.

33. Measures to minimize harvest-related ground disturbance are described in AHCP section 6.2.4, including yarding restrictions, site preparation restrictions, soil stabilization, and seasonally appropriate access restrictions. GDRCo uses shovel logging in ground-based harvest areas. Ground based yarding will be limited to slopes less than 35%. Shovel logging has been shown to minimize ground disturbance due to low ground pressure, no need to construct skid trails, operating on top of slash rather than bare soil, and the opportunity to utilize residual vegetation to slash pack temporary constructed haul roads to minimize raindrop impact and surface erosion. Regional Water Board have observed that post-harvest ground cover in areas on GDRCo's timberlands in the Elk River Watershed that have been harvested using shovel logging are typically nearly 100% covered with slash and other organic matter.

34. GDRCo widely utilizes clearcut silvicultural as well as commercial thinning, precommercial thinning and selection methods. Tree removal can result in reduced interception and evaporation of rainfall by forest canopy and evapotranspiration and can therefore increase the volume of precipitation that infiltrates and remains in soils, increasing soil pore water pressure. Increased pore pressures can increase the potential for slope failures. Tree roots enhance the strength of shallow soils, increasing the soil's ability to resist failure. When trees are harvested their roots gradually decay, reducing the soil reinforcement they provide and increasing the potential for shallow landslides. Root decay is considerably less for resprouting species such as redwood and therefore, the effects of loss of root strength is diminished to some extent in Elk River, as nearly 70% of the basal area of trees on GDRCo's Elk River timberlands is redwood. Harvesting trees can result in increased soil moisture and runoff and decreased root strength, which can contribute to landsliding and increased erosion.

35. Section B of the ERMP describes default Geologic Prescriptions that apply; when an RPF determines that any portion of a THP being developed meets the definitions for a steep streamside slope (SSS), headwall swale, deep-seated landslide or shallow rapid landslide; when to exercise professional discretion to avoid operations in unstable areas; and when to retain a California Professional Geologist to develop site-specific alternative prescriptions to the default prescriptions. Based on review of aerial imagery from 2009, 2010, 2012, 2014, and 2016, GDRCo's geology staff identified one landslide that occurred during that time period[1]. The landslide initiated from a road fill slope failure in 2012 and discharged an estimated 520 cubic yards to a watercourse. Table 2 harvest related targets are anticipated to be met primarily through implementation of the geologic prescriptions described in the ERMP.

36. <u>Management Discharge Site Indicators</u>: The target for this indicator is no new management discharge sites associated with watercourses. Through a combination of standard watercourse protection measures required by the Forest Practice Rules

[1] Landslide Monitoring in the South Fork Elk River, Humboldt County, 2018 Report, pursuant to Monitoring and Reporting Program (MRP) No. R1-2012-0088, Prepared by Green Diamond Resource Company.

and enhanced protection measures described in the ERMP, and discussed further in findings below, GDRCo's forest management operations are not expected to result in creation of new discharge sites. In addition, identification and treatment of existing controllable sediment discharge sources (CSDS)[2] is an essential component of a strategy to prevent or minimize ongoing sediment discharge. Section I.H of this Order requires that CSDS not previously identified must be addressed by preparation and submittal of an inventory of CSDS within the logging area of all THPs submitted by GDRCo. The inventory must include a description of each CSDS and corrective actions that can reasonably be expected to control sediment discharge from each source. Corrective action for each source must be implemented during the life of the THP.

37. Specific Upper Elk River Watershed Indicators: These targets generally address protection of channels and riparian zones from impacts related to ground disturbance and tree removal. Hillslope indicators include headward incision in low order channels, actively eroding channel banks, peak flow, and characteristics of riparian zones.

38. In addition to impacts on slope stability discussed above, tree removal can result in hydrologic changes, including increased runoff and alteration of stream hydrographs by increasing the magnitude and shortening the duration of peak flows in watercourses. Changes in hydrographs can result in channel scour and increases in bank failures. Subsurface erosion of soil pipes is prevalent in the Upper Elk River, particularly in swales above small headwater channels. Preferential flow through soil pipes results in internal erosion of the pipe, which may produce gullies by tunnel collapse. Expansion of the existing drainage network by the process of headward erosion and upslope migration of channel initiation points in the Upper Elk River likely resulted from a combination of hydrologic changes (increased peak flow) and channel disturbance from historic operation of heavy equipment and dragging logs in streams and riparian areas. It is unknown whether the process of headward migration of channel heads is continuing to any significant extent. It is likely that there were one or more pulses of channel expansion following periods of intense logging in Upper Elk River. Such pulses would likely have gradually diminished and the channel networks largely, but not completely, stabilized. Due to the highly erosive nature of underlying geologic units, channels in the watershed are naturally vulnerable to destabilization and this has been exacerbated by logging. Impacts to channels can be reduced or prevented by excluding tractor yarding and minimizing peak flow increases by limiting canopy removal through harvest rate limits and geologic prescriptions.

39. The numeric target for peak flows calls for limiting increases in peak flows related to timber harvesting in individual Class II and III catchment to less than 10% in ten years. Significant challenges are presented when attempting to quantify peak flow changes resulting from specific canopy reduction at a small catchment scale. Grant et al (2008) found the minimum detectable change in peak flow for site scale

[2] Sites that discharge or have the potential to discharge sediment to waters of the state in violation of water quality standards, that are caused or affected by human activity, and that may feasibly and reasonably respond to prevention and minimization management measures.

analysis to be ±10% and that annual variation in peak flows can be two orders of magnitude. Grant et al also report that peak flow effects are not present in streams with slopes greater than 10%, which would include most Class II and III streams. The peak flow model derived from work in Caspar Creek is widely used to estimate peak flow changes from canopy removal and a modified version of that model was used in the 2006 Elk WDRs. However, that model was not calibrated for drainage areas less than 25 acres, which would also exclude many Class II and III catchments in Elk River. Further confounding use of a specific peak flow target is that peak flow changes are greatest in early season smaller storms and low recurrence interval storms and diminish with increasing storm size and seasonal watershed saturation. While harvesting an entire Class II or III catchment is not permitted due to canopy retention requirements for riparian zones established by this Order, transient peak flow changes in the early years following canopy removal over a significant portion of an individual drainage may exceed 10% under certain early season storm events and soil saturation conditions. However, peak flow response attenuates over time as vegetation grows back. The timing of this hydrologic recovery varies according to specific watershed conditions and it is expected that this recovery is relatively rapid in Elk River due to site conditions that favor rapid redwood regeneration. Modeled changes in peak flows from canopy removal on GDRCo's timberlands in Elk River using the regression equation developed from the North Fork Caspar Creek (Lisle et al. 2000; Lewis et al. 2001; Cafferata and Reid, 2012), indicated that implementation of the numeric target for peak flow can generally be met by limiting canopy reduction, maintaining appropriate harvest rate limits, and applying robust riparian buffers.

40. The rate of harvest in a watershed is an important management variable to limit peak flow increases and loss of root strength due to tree removal. Various studies cite specific thresholds for the rate of harvest, above which, cumulative impacts become more likely to occur and have linked specific processes to watershed impacts, such as increased peak flows from road and canopy removal (Lisle et al. 2000, Lewis et al. 2001), landslide related sediment discharge (Reid, 1998), road density (Cedarholm et al. 1981, Gucinski et al. 2001, Trombulak et al, 2000), or equivalent clearcut area (USDA Forest Service, 1974). The ERMP specifies that GDRCo will harvest no more than 55 clearcut acres per year, calculated on a 3-year rolling average throughout its timberlands in the Elk River Watershed. This represents a harvest rate of approximately 2.7% of GDRCo's timberlands in the Upper Elk River Watershed per year. This limit applies to clearcut acres, not to areas subject to other silvicultural methods and therefore, the actual annual harvest acreage will generally exceed 55 acres. However, clearcutting is by far the dominant silviculture method utilized by GDRCo in the Upper Elk River Watershed (and is the most intensive) and as such it is appropriate to apply the harvest limit to clearcut silviculture. The 3-year rolling average provides operational flexibility while maintaining a low annual harvest rate. GDRCo will adhere to a 4-year harvest adjacency versus the 3-year adjacency requirement in the California FPRs. This extension of the harvest adjacency in this watershed will serve to further reduce potential impacts from harvest activities and will distribute them over greater time and space. This will avoid concentrating harvest units over a short period into individual sub-basins within GDRCo's Elk River ownership.

41. Table 2 numeric targets for riparian zones specify improvement in the quality/health of the riparian stand to promote the following functions within 300 feet of Class I and II watercourses and 150 feet of a Class III watercourses: 1) delivery of wood to channels, 2) slope stability, and 3) ground cover. Under natural conditions the riparian areas in the Upper Elk River created complexity in stream channels, both in the steep upper watershed as well as in depositional reaches. Alteration of physical processes within riparian zones in Upper Elk River have led to reduced complexity, including reduction in the trees available within riparian areas for recruitment to streams, increased surface erosion and landsliding, and destabilization of stream channels. Considerations of the interactions between sediment processes and riparian trees are essential for evaluating and avoiding these management related impacts to streams. Management of riparian zones must be designed to preserve and restore the function of riparian vegetation and hillslope processes, including retention of adequate riparian zone trees and avoiding use of roads and heavy equipment on vulnerable hillslopes and swales within or near riparian zones.

42. The GDRCo's proposed ERMP prescriptions for management activities in riparian zones have been revised in an effort to further minimize management related impacts to channels and to promote the quality and health of riparian stands. In its ERMP GDRCo proposed riparian zone protection measures that extend up to 200 feet from Class I watercourse channels and 100 feet on Class II and III watercourse channels. Riparian protection includes canopy and basal area retention, slope and channel bank protection, limits on construction and use of skid trails, large wood recruitment, limit to one entry over the life of the AHCP, and soil stabilization.

    Specific riparian protection measures from section A of the ERMP include the following:

    a. Class I protection measures:
        i. 150 foot riparian management zone (RMZ) on each side of the watercourse;

        ii. At least 85% overstory shall be retained, where it currently exists, within the first 75 feet of the watercourse and at least 70% within the remainder of the Class I RMZ. 70% of the overstory canopy and understory vegetation within all Class I RMZ's shall be retained; and

        iii. Class I watercourses shall be provided with an additional 25 foot Special Operating Zone (SOZ) on slopes between 0-30% or 50 foot SOZ on slopes >30%, where understory vegetation, hardwoods and mid-canopy conifers shall be retained on site.

    b. Class II protection measures:
        i. Class II-1 shall receive a 100 foot buffer on each side of the watercourse consisting of a 75 foot RMZ and a 25 foot SOZ;

        ii. Class II-2 shall receive a 100 foot RMZ on each side of the watercourse;

iii. The Class II-1 buffer shall be used on the first 1,000 feet of 1st order Class II watercourses. Downstream of this first 1000-foot section, the Class II-2 buffer will be used;

iv. The Class II-2 buffer shall be used on all 2nd order or larger Class II watercourses;

v. Where a 1st order Class II watercourse flows directly into a Class I watercourse, the Class II RMZ shall be at least 100 feet on each bank for the first 200 feet of Class II channel upstream of the Class I RMZ boundary;

vi. First order Class II watercourses with sideslopes >50% with ground based operations, shall have an RMZ of 100 feet;

vii. A 30 foot inner zone within the RMZ shall be established, measured from the watercourse transition line;

viii. An outer zone of the RMZ shall be established and extend the remaining 45 feet or 70 feet (depending on whether it is a Class II-1 watercourse or a Class II-2 watercourse, respectively);

ix. At least 85% overstory canopy shall be retained in the inner zone;

x. At least 70% overstory canopy shall be retained in the outer zone of the RMZ; and

xi. The Class II-1 SOZ shall consist of 50% total canopy retention.

c. Class III protection measures:

i. 100 foot SOZ:

ii. The SOZ will contain an inner core 10 foot no-cut zone; and

iii. At least 75 square feet of basal area per acre with 50% total canopy shall be retained within the SOZ following completion of yarding operations;

43. Section I.C of this Order establishes measures for protection of riparian zones that incorporate these ERMP prescriptions as minimum protection standards but includes the following additional requirements for riparian zone protection in order to fully implement the TMDL hillslope targets for riparian zones:

- GDRCo may not reduce post-harvest overstory canopy within 300 feet of Class I and II watercourses below 50%; and
- GDRCo may not reduce post-harvest overstory canopy within 150 feet of Class III watercourses below 50%.

44. This Order requires GDRCo to implement the TMDL zero load allocation. Within the context of the Order, implementation of the zero load allocation entails minimizing or eliminating all anthropogenic sediment discharge to the maximum extent feasible through implementation of stringent management practices designed to minimize discharges including harvest rate restrictions, riparian protection, roads management, landslide prevention, seasonal restrictions, and continued efforts to inventory, prioritize and implement cleanup and remediation of existing sediment source discharge sites. The State Water Board's understanding of the zero load allocation as articulated in Resolution No. 2017-0046 is that, absent an amendment to the TMDL, it does in fact require that all anthropogenic discharges of sediment be minimized and eliminated as soon as feasible, but no later than 2031. This requirement remains in effect until the TMDL is amended because the assimilative capacity of the Elk River has been restored through the restoration activities identified in Finding 18. The Watershed Stewardship Program has been established to develop a plan and implement the necessary measures and to conduct the coordinated monitoring to evaluate progress towards restored assimilative capacity. The Elk River Recovery Assessment: Recovery Framework provides a model-tested set of actions, specific to reach and tributary, estimated to reflect the most viable approach to recovery. The Regional Water Board finds that the current management framework established under this Order is reasonable and appropriate and is expected to result in minimization and near complete elimination of anthropogenic discharge. Further, through ongoing annual monitoring and periodic review of progress towards TMDL implementation, the Regional Water Board will be able to track hillslope and instream indicators and target conditions and revise the regulatory framework of the program of TMDL implementation as necessary to comply with the State Water Board's understandings.

Applicable State and Federal Regulatory Programs

45. Concurrent with the development of the GDRCo's Road Management WDR, the California Department of Fish and Wildlife (CDFW) developed a Master Agreement for Timber Operations (MATO, 1600-2010-0114-R1). CDFW has jurisdiction over the conservation, protection, restoration, enhancement, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species under state law including Fish and Game Code section 1600 et seq.

46. The MATO section 11.0 A contains conditions (starting on page 21) for authorized activities including watercourse crossing installation, repair, replacement, maintenance, and upgrading and activities associated with in-stream and riparian restoration projects. Conditions necessary for protection of water quality and biological resources in streams include:

- General - conditions for construction activities at stream sites
- New road construction - conditions for design and construction of roads
- Upgrading - conditions for process and materials used in upgrading existing roads
- Decommissioning - conditions for treatments of sites that will be removed

- Erosion control - conditions to minimize erosion and prevent sediment delivery from road work activities
- Water drafting - conditions for water extraction
- In-stream restoration projects - procedures, oversight, and restrictions

47. The California Department of Forestry and Fire Protection (CAL FIRE) is the state agency responsible for overseeing timber harvesting activities through implementation of the Forest Practice Rules (Cal. Code Regs., tit. 14, §§895-1115.3). Non-federal landowners proposing to harvest timber are required to have an approved timber harvest plan (THP), prepared by a registered professional forester (RPF), prior to starting timber harvesting activities. Pursuant to the Forest Practice Rules (FPRs), the Regional Water Board, DFW, California Geological Survey, and other agencies are also responsible agencies that review THPs and provide recommendations to CAL FIRE as part of a "Review Team". The Regional Water Board will continue to participate as a Review Team member for individual THPs proposed by GDRCo to ensure compliance with this Order.

48. The FPRs include rules for protection of the beneficial uses of water, including rules for enhanced protection in watersheds with listed anadromous salmonids. The FPRs provide measures designed to prevent sediment discharge; (See FPR §§ 914, 934 [harvesting practices and erosion control]; §§ 923, 943 [prescriptions for construction, reconstruction, use, maintenance, and decommissioning of roads and landings]; §§ 916.4, 936.4 [requiring evaluation of sites that could adversely impact beneficial uses of water and treatment of such sites when feasible]). FPR § 916.9 requires that every timber operation shall be planned and conducted to comply with the terms of a total maximum daily load (TMDL). The FPRs also provide measures to limit reductions in riparian shade to moderate water temperature. Public Resource Code § 4582.71 specifies that a timber harvesting plan may not be approved if the appropriate regional water quality control board finds, based on substantial evidence, that the timber operations proposed in the plan will result in a discharge into a watercourse that has been classified as impaired due to sediment under Clean Water Act section 303(d). Full and proper implementation of the FPRs related to sediment discharge from timberlands can contribute greatly towards achieving water quality standards. Accordingly, this Order relies in part upon the water quality protection provided by the FPRs. Additional protection measures are necessary to protect the beneficial uses of water for site-specific conditions, prevent nuisance, and to comply with a TMDL load allocation.

49. The Regional Water Board relies, in part, on the MATO, applicable provisions of the FPRs, and GDRCo's AHCP requirements that are related to protection of water quality, which are included specifically or by reference, as enforceable provisions of this Order. Collectively, these regulatory mechanisms require implementation of specific prescriptions or management practices that provide a significant level of water quality protection. This Order is intended to work in conjunction with, and to supplement, the existing regulations in order to implement Basin Plan water quality standards, including the TMDL Action Plan, and contribute to restoration of the beneficial uses of water and abatement of nuisance conditions in the Elk River watershed. As such, those applicable MATO conditions, FPRs, and AHCP

prescriptions that provide water quality protection are included as enforceable conditions of this Order.

50. State Water Board Resolution No. 68-16 Statement of Policy with Respect to Maintaining High Quality of Waters in California (Antidegradation Policy) requires that regional water boards, in regulating the discharge of waste, to maintain high quality waters of the state, require that any discharge not unreasonably affect beneficial uses, and not result in water quality less than that described in regional water board's policies. The Policy applies whenever: a) there is high quality water, and b) an activity which produces or may produce waste or an increased volume or concentration of waste that will discharge into such high-quality water. "Existing quality of water" has been interpreted to mean the best quality that has existed since the Policy was adopted in 1968. Thus, the Regional Water Board must determine this "baseline" water quality and compare with current water quality objectives. If the baseline water quality is equal to or less than the objectives, the water is not "high quality" and the Policy does not apply. In this case, the water quality objectives govern the water quality that must be maintained or achieved. (Asociación de Gente Unida por el Agua v. Central Valley Regional Water Quality Control Board (2012) 210 Cal. App. 4th 1255, 1270 (AGUA).)

51. If baseline water quality is better than water quality objectives, the Antidegradation Policy applies and baseline water quality must be "maintained" unless the Board makes the requisite findings. To permit a proposed discharge that will degrade high quality water, the Board must find that the discharge: 1) will be consistent with maximum benefit to the people of the state; 2) will not unreasonably affect present and anticipated beneficial uses of the water; and 3) will not result in water quality less than that prescribed in water quality plans and policies. (AGUA at 1278.) In addition, the Board must ensure the discharge is utilizing the "best practicable treatment or control" to ensure pollution or nuisance will not occur and that the highest quality consistent with the maximum benefit to the people of the state will be maintained. (Id.)

52. Following a century of logging, and in particular, following the post-World War II era of intensive tractor logging, water quality conditions in Elk River in 1968 were likely already impacted by sediment. Further impairment occurred after 1968 as a result of excessive and poorly-regulated logging and large storm events. The capacity of the Upper Elk River for sediment is limited by the ongoing aggradation in the impacted reach and resulting nuisance conditions and compromised beneficial uses. Unless and until its capacity can be expanded through sediment remediation and channel restoration, nuisance conditions abated, and beneficial uses supported, the Regional Water Board determined that the nonpoint source load allocation be defined as zero. Even with the implementation of current and much improved management practices and stringent restrictions described, ongoing timber harvesting and associated activities will result in some sediment discharge, further exacerbating the already impaired condition. Therefore, in addition to addressing existing, ongoing discharges, this Order addresses water quality impacts that have already occurred.

53. This Order requires compliance with water quality objectives in receiving water in order to restore the beneficial uses, and requires compliance with water quality

objectives in receiving water through implementation of stringent management practices designed to minimize discharges including harvest rate restrictions, riparian protection, roads management, landslide prevention, wet weather prescriptions, limited logging activities in high risk areas, and continued efforts to inventory, prioritize and implement cleanup and remediation of existing sediment source discharge sites. This Order authorizes discharges from certain cleanup and restoration activities as well as from ongoing timber harvesting and associated activities. Cleanup and restoration activities may result in small short-term discharges associated with placement of large wood into streams or excavation to stabilize or remove fill material stored in channels and adjacent riparian zones. The potential impacts of minor short-term discharges are outweighed by the benefits of long-term sediment control derived by such projects.

54. To the extent that the Upper Elk River had existing higher quality water in 1968, the Regional Water Board finds that the authorization of some sediment discharges from ongoing timber operations (subject to proper management and stringent restrictions) and cleanups is necessary to accommodate important economic and social development in the area and is consistent with the maximum benefit to the people of the state. The Regional Water Board recognizes that a significant portion of in-stream sources are likely to be mobilized and transported to the impacted reach over time, regardless of whether timber operations are conducted. The Order requires control and remediation of existing sediment inputs to the extent feasible and monitoring to determine whether implementation is leading to measurable improvements. The Order also limits logging activity in the most sensitive areas to allow active measures to be taken by the Watershed Stewardship Program to improve downstream beneficial uses. The Order ensures that any new discharges are subject to the best practicable treatment or control.

55. Compliance with the terms of this Order will further the TMDL Action Plan goals of minimizing and eliminating sediment discharges from GDRCo's timber operations in the Upper Elk River Watershed. The monitoring and reporting program included as Attachment C of this Order is designed to provide a feedback mechanism to ensure that management measures are implemented and functioning as intended and provide data on in-stream sediment conditions. The Order provides for ongoing assessment of the effectiveness of management measures and progress in meeting TMDL load allocations.

56. To the extent that the Antidegradation Policy applies, the Order is consistent with the Policy because: 1) compliance with the Order will result in a net improvement over existing conditions and any degradation authorized by prior Orders; 2) implementation of management measures required by this Order constitute BPTC to control discharges from timber operations; and 3) the Regional Water Board finds the authorization of some discharges is to the maximum benefit of the people of the state.

57. The Order is consistent with the Policy for Implementation and Enforcement of the Non-Point Source Pollution Control Program (Non-Point Source Policy). Implementation of the Order will promote attainment of Water Quality Objectives and TMDL Action Plan requirements. The Order incorporates antidegradation

requirements as described in Findings 50-56; describes management practices and performance standards to be met; requires annual monitoring and reporting, and cumulative reports to provide a feedback mechanism to the Regional Water Board on the effectiveness of the management practices; sets clear milestones for meeting objectives; and states the consequences for failure to meet Order requirements, which may include: modification of Order requirements to require additional management measures and mitigations, rescission of coverage for individual THPs and/or denial of THP enrollment; and enforcement action for failure to comply with Order conditions including reporting requirements.

58. A monitoring and reporting program is necessary to assess the implementation and effectiveness of mitigation measures required under this Order and provide feedback for adaptive management. The monitoring and reporting requirements are designed to achieve the following objectives:

    a. Provide regular reports on all timber harvesting and associated activities covered under this Order, including harvesting, road use and construction, and implementation of corrective action to control sediment discharge, in order to evaluate compliance with requirements of this Order and consistency with the TMDL Action Plan;

    b. Determine the effectiveness of management measures designed to protect water quality and inform adaptive management decisions;

    c. Track landslide activity;

    d. Identify potential new sources of sediment discharge and implement corrective action in a timely manner;

    e. Track GDRCo's participation in Watershed Stewardship efforts working towards recovery of beneficial uses in Elk River;

    f. Track water quality and annual sediment load; and

    g. Help inform re-evaluation of the Upper Elk River's assimilative capacity for sediment and sediment load allocations.

Administration

59. Regional Water Board staff will continue to review individual timber harvesting plans as part of CAL FIRE's Review Team (FPR 1037.5) to confirm compliance with this Order. Participation, as deemed necessary, in First Review, pre-harvest inspections, and Second Review will provide the opportunity for representatives of the Regional Water Board to make any necessary site-specific water quality recommendations to ensure compliance with this Order, and for any subsequent changes to the THP to be made prior to CAL FIRE approval.

60. During the first five years following adoption of this Order, GDRCo must apply to the Regional Water Board Executive Officer for coverage of individual THPs as specified in section I.E of the Order. After the first five years, an enrollment process is not

required to commence operations for CAL FIRE-approved THPs that fully comply with requirements of this Order; however, GDRCo must submit a notice of commencement of THP activities each calendar year within a 15 day period prior to the start of timber operations.

61. In considering adoption of Order R1-2020-0001 under the California Environmental Quality Act (CEQA), the Regional Water Board has relied on the Environmental Impact Statement (EIS) issued by the U.S. Fish & Wildlife Service and National Marine Fisheries Service for the AHCP. When a project requires compliance with both CEQA and the National Environmental Policy Act (NEPA), and the federal EIS is prepared first and meets the requirements of CEQA, CEQA provides that the state agency should use the EIS rather than preparing a separate EIR or negative declaration. (California Code of Regulations, title 14, section 15221.) In developing Order No. R1-2012-0087, on August 1, 2012, the Regional Water Board circulated a Notice of Intent and letter that added any points of analysis not covered in the EIS but required under CEQA. In that Notice and letter, the Regional Water Board provided public notice of the availability of the EIS and its intent to rely on the federal document. The EIS and supplemental letter were completed in compliance with CEQA and reflect the Regional Water Board's independent judgment and analysis. In addition, potential environmental effects associated with the project were also analyzed under CEQA in the Initial Study/Mitigated Negative Declaration (IS/MND) prepared by the California Department of Fish and Game for the MATO and the Road Management WDR. The Regional Water Board has reviewed and considered the prior environmental documentation described above and finds that none of the conditions described in California Code of Regulations title 14, section 15162 have occurred such that preparation of additional environmental documents pursuant to CEQA is required. All applicable mitigation measures identified in the prior environmental documentation are included as Attachment D to this Order. In addition, mitigation measures necessary to implement the TMDL Action Plan have been included, and implementation of such measures is not expected to result in any new significant effects on the environment. Mitigation measures necessary to reduce or eliminate significant water quality impacts are included as conditions of approval in the Order section below.

THEREFORE, pursuant to Water Code section 13263 and 13267, the Regional Water Board adopts Order R1-2020-0001. This Order supersedes all requirements of Order No. R1-2012-0087 pertaining to GDRCo's management activities in the Upper Elk River Watershed, in particular section III, Specific Conditions for the South Fork Elk River Watershed, and Attachment C, GDRCo's South Fork Elk River Management Plan, and directs the Executive Officer to file all appropriate notices. THPs enrolled under Order No. R1-2012-0087 at the time of adoption of this Order will retain coverage under, and be subject to the terms and provisions of that Order:

I. SPECIFIC REQUIREMENTS

The following conditions apply to lands where GDRCo owns and/or conducts timber harvesting activities in the Upper Elk River Watershed:

A. Upper Elk River Sediment TMDL Action Plan

GDRCo shall implement the TMDL Action Plan by complying with the specific and general requirements and prohibitions as prescribed in this Order, which apply throughout GDRCo's timberlands in the Elk River Watershed, not solely in areas with active timber operations.

B. Elk River Management Plan

All GDRCo's management activities in the Elk River shall adhere to the Elk River Management Plan, included as Attachment B to this Order.

C. Riparian Zone Protection

1. The following requirements for riparian zone protection apply throughout GDRCo's timberlands in the Upper Elk River and are designed to ensure that its management activities shall be conducted so as to implement the following TMDL hillslope indicators and numeric targets associated with watercourses and riparian zones:

    - Improvement in the quality/health of the riparian stand to promote: 1) delivery of wood to channels, 2) slope stability, and 3) ground cover within 300 feet of Class I and II watercourses and 150 feet of a Class III watercourse;
    - No increase in the existing drainage network through headward incision in low order channels; and
    - Decreasing length of channel with actively eroding banks.

2. GDRCo shall implement RMZ prescriptions for riparian protection as specified in section A of the ERMP.

3. The RMZ prescriptions in section A of the ERMP are minimum standards. In addition to those RMZ prescriptions , GDRCo shall retain a minimum of 50% post-harvest forest overstory canopy cover well distributed throughout the area and shall not utilize group openings larger than 0.25 acres within 300 feet from Class I and II watercourses and 150 feet from Class III watercourses, or to the first hydrologic divide. The overstory canopy retention requirement in this section shall not supersede canopy retention requirements from the ERMP when those canopy requirements exceed retention of 50% overstory canopy.

4. Additional management practices in riparian management zones:

    a. Implement erosion controls including surfacing all segments of road and skid trails within riparian areas with pavement, rock, slash, mulch, straw, or other adequate materials to prevent the discharge of sediment to a watercourse;

    b. Cover all disturbed soil areas with slash, mulch, straw, or other adequate materials, or apply other effective erosion control measures to prevent the discharge of sediment to a watercourse;

    c. Avoid tractor crossings in unchanneled swales; and

d. Retain trees along the center line of swales and areas of subsurface flow paths.

6. No later than five years from the date of adoption of this Order, the Regional Water Board will consider the Order requirements for riparian zone protection and after public notice and comment will provide staff direction on potential changes to the requirements.

D. Elk River Sediment Reduction Plan

1. GDRCo shall maintain a master inventory of all sediment discharge sites deemed feasible to treat, including road-related sites both associated with THPs and not associated with THPs, non-road related sites associated with THPs (i.e., skid trail crossings), and non-road related sites not associated with THPs. The inventory shall include a site identification number, the location shown on a scaled map, the volume of sediment to be treated, treatment priority, and the proposed treatment and schedule. Upon successful completion of corrective action at all the sites from the master inventory, inventory and treatment of any new road related sediment sources in the Upper Elk River watershed shall be conducted pursuant to Green Diamond's AHCP Routine Road Maintenance and Inspection Plan and the Roads Management WDR (Order R1-2010-0044)

2. Annual proposed treatments of sites from the master inventory shall be submitted via the Annual Work Plan for the Roads Management WDR (Order R1-2010-0044).

E. Timber Harvesting Plan Review

Individual timber harvesting plans will be reviewed as part of CAL FIRE's Review Team (FPR 1037.5) to confirm compliance with this Order. All operational requirements of this Order shall be included as enforceable provisions in GDRCo's THPs in the Upper Elk River Watershed. Participation, as deemed necessary, in First Review, pre-harvest inspections, and Second Review will provide the opportunity for representatives of the Regional Water Board to make any necessary site-specific water quality recommendations to ensure compliance with this Order, and for any subsequent changes to the THP to be made prior to CAL FIRE approval. During the first five years following adoption of this Order, GDRCo must apply to the Regional Water Board Executive Officer for coverage of individual THPs.

The enrollment application consists of a request for enrollment based on the approved THP that must be signed by a designated representative of GDRCo certifying that the THP complies with the terms and provisions of this Order. Prior to enrollment, Regional Water Board staff will evaluate the THP for compliance with the Order, and at that time may require additional measures, including those that were made as recommendations during the THP process and were not incorporated into the THP and are necessary for water quality protection consistent with this Order. Timber harvesting activities may not commence until GDRCo receives written notification from the Regional Water Board Executive Officer that the THP is covered under this Order. It is anticipated that Projects which have had thorough Regional

Water Board staff involvement in the review and approval process will receive written notification of coverage within ten (10) working days of receipt of a complete application.

After the first five years following adoption of this Order, if a THP is approved by CAL FIRE with no non-concurrences and all water quality issues identified by Regional Water Board staff have been resolved to the satisfaction of the Regional Water Board Executive Officer, then the THP shall be considered in conformance with the conditions of this Order and an enrollment process shall not be required.

If a THP is subject an unresolved non-concurrence or other water quality issue identified by Regional Water Board staff, the THP shall not be considered to be in conformance with the conditions of the Order and shall not be enrolled in the Order until such issues have been resolved.

F. Notification of Commencement of Timber Harvesting Plan Activities
Each calendar year, the Regional Water Board shall be notified of the actual commencement date for the start of operations for each approved THP within a 15-day period before beginning timber operations. The notification shall be directed to the designated personnel at the Regional Water Board by telephone or by electronic mail.

G. Timber Harvest Plan Completion and Certification of Compliance
Upon completion of a THP, the RPF shall submit the CAL FIRE final completion report, and a final certification notice to certify completion and compliance of the THP with this WDR. The Regional Water Board shall review the certification and may schedule a field inspection to verify conformance of the THP with this WDR. The RPF shall be notified in writing (including email) regarding approval or disapproval of the certification.

H. Treatment of Other (Non-road Related) Sediment Sources
Other CSDS (e.g., failing skid trail crossings and watercourse diversions within timber harvest units) will be evaluated, inventoried, and corrective action implemented concurrently with THPs. The inventory shall be included in the THP and shall include the following information:

- A description of the current site condition.
- A description of the proposed corrective action, including the type and scope of work.
- Whether the proposed activity will occur on a Class I, II, III, or IV watercourse.
- An estimate of the potential sediment volume that could discharge if left untreated.
- Where warranted, construction drawings, diagrams or sketches, cross sections with dimensions, or other information.

I. Discharge Notifications

Should it be determined by GDRCo or the Regional Water Board that a discharge is causing or contributing to an exceedance of a water quality standard or violation of an applicable water quality requirement, GDRCo shall:

Implement corrective measures immediately following discovery and notify the Regional Water Board by telephone or email as soon as possible, but no later than 48 hours after the discharge was discovered. This notification shall be followed by a report within 14 days that includes:

- The date the exceedance or violation was discovered
- The name and title of the person discovering the exceedance or violation
- A map showing the location of the exceedance or violation site
- A description of recent weather conditions prior to discovering the exceedance or violation
- The nature and cause of the exceedance or violation
- Photos of the site characterizing the exceedance or violation
- The management measures currently being implemented
- Any maintenance or repair of management measures
- Any additional management measures that will be implemented to prevent or minimize discharges that are causing the exceedance or violation
- An implementation schedule for corrective actions
- The signature of the person preparing the report

Compliance with the required technical reports and the implementation of required corrective measures shall not prevent the Regional Water Board from taking enforcement action under any other requirements of this Order.

J. GDRCo shall comply with the Monitoring and Reporting Program included as Attachment C to this Order.

II. GENERAL CONDITIONS

A. If any dispute arises regarding implementation of this Order, GDRCo and Regional Water Board staff will attempt to resolve it through field examination and discussion.

B. All applicable MATO conditions, FPRs, and AHCP prescriptions that provide water quality protection are included as enforceable conditions of this Order.

C. GDRCo must comply with all applicable mitigation measures identified in Attachment D of this Order, CEQA Findings. Notwithstanding general condition B above, compliance with these mitigation measures and all other conditions are requirements under this Order, and violation of any such requirements subjects GDRCo to enforcement action, including civil liability, under the Water Code.

D. GDRCo shall comply with any additional mitigation measures identified and required in a THP issued pursuant to the CAL FIRE CEQA-equivalent process.

E. GDRCo must allow Regional Water Board staff entry onto the affected property, with reasonable notice, for the purpose of observing, inspecting, photographing, videotaping, measuring, and/or collecting samples or other monitoring information to document compliance or non-compliance with this Order.

F. GDRCo must allow Regional Water Board staff access to copy, at reasonable times, any records that must be kept under the conditions of this Order. On request, tabular data shall be submitted electronically and, in a format directly compatible with Microsoft Excel and similar computer software for data processing. Spatial data shall be georeferenced and openable in ArcGIS and equivalent geographic information system (GIS) software. For tabular data, acceptable file formats and their extensions comprise: Microsoft Excel spreadsheet (*.xls or *.xlsx); American Standard Code for Information Interchange (ASCII) delimited text (*.csv, *.txt, and *.asc); and extensible markup language (*.xml). Vector spatial data shall be formatted as ESRI shapefiles or GeoJSON (*.shp or *.json). Raster spatial data shall be formatted as GeoTIFFs (*.tif or *.tiff).

G. The requirements prescribed by this Order do not authorize the commission of any act causing injury to persons or property, nor protect GDRCo from liability under federal, state, or local laws. GDRCo is responsible for ensuring that all activities comply with applicable local, state, and federal laws.

H. No discharge of waste into the waters of the state, whether the discharge is made pursuant to issued waste discharge requirements, shall create a vested right to continue to discharge. All discharges of waste into waters of the state are privileges, not rights (Water Code, section 13263, subdivision (g)).

I. Prior to implementing any change to the project or activity that may have a significant or material effect on the findings, conclusions, or conditions of this Order, GDRCo must obtain the written approval of the Regional Water Board Executive Officer.

J. In the event of unforeseen circumstances such as fire, wind, earthquake, flood, pest or pathogen infestation, or landslides of a scale not reasonably foreseeable, GDRCo shall initiate a meeting with the Executive Officer to discuss potential changes to the conditions of this WDR.

K. The Regional Water Board may add to or modify the conditions of this Order, with notice as appropriate, to implement any new or revised water quality

standards and implementation plans adopted and approved pursuant to the Porter-Cologne Water Quality Control Act or section 303 of the Clean Water Act.

L. This Order may be modified, revoked and reissued, or terminated with notice. Significant changes to the AHCP or MATO which influence this Order, affect compliance with the conditions of this Order, or contribute to a violation or exceedance of applicable water quality requirements should receive written approval from the Regional Water Board Executive Officer to avoid the possible need to reopen this Order.

III. DISCHARGE PROHIBITIONS

A. The discharge of soil, silt, bark, slash, sawdust, or other organic and earthen material from any logging, construction, or associated activity of whatever nature into any stream or watercourse in the basin in quantities deleterious to fish, wildlife, or other beneficial uses is prohibited.

B. The placing or disposal of soil, silt, bark, slash, sawdust, or other organic and earthen material from any logging, construction, or associated activity of whatever nature at locations where such material could pass into any stream or watercourse in the basin in quantities which could be deleterious to fish, wildlife, or other beneficial uses is prohibited.

C. Discharges of waste, which are not otherwise authorized by waste discharge requirements, or other orders issued by the Regional Water Board or the State Water Resources Control Board, to waters of the state in violation of Basin Plan standards, are prohibited.

D. Discharges must not cause or threaten to cause pollution, contamination, or nuisance.

E. Discharges must not adversely impact human health or the environment or the beneficial uses of water set out by the Basin Plan.

F. Discharges of waste that violate any narrative or numeric water quality objective, that are not authorized by waste discharge requirements or other order or action by the Regional Water Board or State Water Resources Control Board, are prohibited.

IV. RESCISSION AND DENIAL OF COVERAGE

The Executive Officer shall rescind or deny the applicability of this Order to any individual project or activity if the Executive Officer makes any of the following determinations:

A. The THP does not comply with any condition or provision of this Order.

B. The project or activity is reasonably likely to result or has resulted in a violation or exceedance of any applicable water quality requirement.

C. The project or activity has varied in whole or in any part from the approved THP in any way that could adversely affect water quality.

D. When requested by GDRCo, another state agency (upon a demonstration that the project or activity would cause an exceedance of water quality standards or otherwise violate this Order), a subdivision of the state (county), or a federal agency, and with concurrence by the Executive Officer.

E. THP is the subject of an unresolved water quality or procedural issue including, but not limited to, a non-concurrence filed by the Regional Water Board staff with CAL FIRE.

F. The project or activity meets the WDR terms but may still result in discharge that could affect the quality of waters of the state.

Upon receipt of a written notice of rescission or denial of coverage for a project or activity under this Order, the applicability of this Order to the covered project or activity is immediately terminated. Upon termination, GDRCo must immediately cease all activities that may result in un-permitted discharges of waste to waters of the state, other than activities necessary to control further discharges.

CERTIFICATION

All reports required by the Monitoring and Reporting program (Attachment C) or other information requested by the Regional Water Board must include a determination of compliance signed by a duly authorized representative of HRC. Any person signing a document under this requirement shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Any person failing to furnish technical or monitoring reports or falsifying any information therein is guilty of a misdemeanor and may be subject to civil liability. (Water Code section 13268)

V. PETITION

Any person aggrieved by this action of the Board may petition the State Water Board to review the action in accordance with CWC 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 that this Order becomes final, except that if the thirtieth day following the date that this Order becomes final falls on a Saturday, Sunday, or state holiday (including mandatory furlough days), 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 Regional Water Board's website: [http://www.waterboards.ca.gov/public_notices/petitions/water_quality] or will be provided upon request.

Certification:

I, Matthias St. John, Executive Officer do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, North Coast Region, on February X, 2020.

_____
Matthias St. John
Executive Officer

LIST OF ATTACHMENTS
Attachment A – Elk River Location Map
Attachment B – Green Diamond Resource Company's Elk River Management Plan
Attachment C – Monitoring and Reporting Program
Attachment D – CEQA Findings and Mitigations

References

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