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To: Robert Klamt  
From: Quartz Valley Indian Reservation  
Crystal Bowman, Environmental Protection Department Director  
Date: May 17, 2010  
Re: Comments on *California Regional Water Quality Control Board North Coast Region Order No. R1-2010-0029, Waiver of Waste Discharge Requirements For Nonpoint Source Discharges Related to Certain Federal Land Management Activities On U.S. Forest Service Lands In the North Coast Region*

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## **INTRODUCTION/SUMMARY OF COMMENTS**

The draft “Order No. R1-2010-0029, Waiver of Waste Discharge Requirements For Nonpoint Source Discharges Related to Certain Federal Land Management Activities On U.S. Forest Service Lands In the North Coast Region” (*Draft Waiver*) was issued by the North Coast Regional Water Quality Control Board in April 2010. We provide the following comments from the Quartz Valley Indian Reservation.

We generally support the concept of the proposed Waiver. The proposed three-part strategy appears generally sound:

- Maintaining and improving riparian zones by continued implementation of the USFS’ Aquatic Conservation Strategy (ACS) and Aquatic Management Strategy (AMS).
- Watershed restoration plans that require inventories, prioritization, and remediation of pre-existing sediment sources
- On-the-ground prescriptions with Best Management Practices (BMPs) for specific activities

The tiered approach of lesser requirements (solely record-keeping) for low-risk Category A activities (e.g. non-commercial firewood harvesting) and more stringent requirements for moderate-risk Category B activities (e.g. construction of new roads) makes sense. The Draft Waiver contains several other elements that we support, such requiring that on-the-ground prescriptions be made explicit in all contracts between the USFS its contractors and that the USFS be explicitly responsible for its contractors’ activities. The burden of proof must remain with the discharger.

Unfortunately, the *Draft Waiver* and Monitoring Program lack specificity and standards, and they are, therefore, mere statements of intent. Without more detail the initiative will not serve the evaluation and protection of water quality. In the comments presented here we provide specific suggestions for improving the initiative's specificity and applicability to water quality protection.

We recommend the following language be added to the waiver: "Where RWB finds conditions unique to the watershed or watershed segment (including, but not limited to, cumulative impacts, special hydrographic characteristics, TMDL standards, the extent of timber harvest activities, intensity of ground disturbing activities, large acreage ownership holdings or management plans, rainfall, slopes, soil, effected domestic water supplies, an increased risk of flooding, or proximity to local, State, or National Parks) that further regulation be warranted separate from this waiver."

In the 'Comments on Major Issues' section below we address the following three shortcomings of the *Draft Waiver* and Monitoring and Reporting Program:

- Need quantitative limits on land use activities (including road density and timber harvest)
- Need annual inspection and maintenance of roads
- Monitoring and Reporting Program needs to be more specific

Following the 'Comments on Major Issues' section the 'Additional Comments on the Draft Waiver' and 'Additional Comments on the Monitoring and Reporting Program' sections contain recommendations for improving specific portions of the *Draft Waiver* and the Monitoring and Reporting Program, respectively.

We urge the Regional Water Board to substantially revise, clarify, and strengthen the *Draft Waiver* prior to adopting it.

## COMMENTS ON MAJOR ISSUES

### Need quantitative limits on land use activities

The impact of land use activities on water quality is dependent both on the extent of the activity (i.e. how widespread it is across the landscape?) and upon particular practices applied to the activity. In seeking to the limit the impacts of activities and land use practices on water quality, the waiver focuses almost solely on creating a system to regulate how and where activities should be conducted, but not how much of an activity should be allowed. This is an important failure in the initiative that needs to be remedied.

For example, even if a road system were perfectly designed and maintained (and the USFS system certainly is not), if there are too many roads (i.e. more than approximately 2-3 miles of road per square mile of land) then there will still be significant sediment and hydrologic effects on aquatic ecosystems. Moreover, due to the limited fiscal resources available for road maintenance, the higher the density of roads that exist on the landscape, the less chance there is that roads will be adequately maintained.

The USFS' Aquatic Conservation Strategy (USFS and BLM 1994) contains the following important standards and guidelines concerning road extent that we request be added to the *Draft Waiver*:

- "No new roads will be built in roadless areas in Key Watersheds." (page B-19)
- "Inside Roadless Areas - No new roads will be built in remaining unroaded portions of inventoried (RARE II) roadless areas." (page C-6)
- "Outside Roadless Areas - Reduce existing system and nonsystem road mileage. If funding is insufficient to implement reductions, there will be no net increase in the amount of roads in Key Watersheds." (page C-6)

In addition, we request that that quantitative limits for timber harvest, road density, and stream crossings also be included in the final Waiver (Table 1). Extensive comments on these topics were included in the Quartz Valley Indian Community's (2005, 2006) comments to the Regional Water Board regarding the Scott and Klamath TMDLs. Rather than repeat that information here, we refer Regional Water Board staff to those documents (see links below in references section).

Table 1. Management with cumulative watershed effects potential, relationship to streams, and recommended steps for management of risk with citations. Adapted from Table 5 of QVIC (2006).

| Management Issue      | Watershed Effect  | Channel/Stream Effect  | Remedy   | Relevant Citations   |
|-----------------------|---|--|--|--|
| Timber Harvest        | Increased surface erosion, landslides, and sediment yield; elevated peak discharge, decreased base flows        | Widening, decreased depth and pool frequency, increased heat exchange and warming. Reduced summer carrying capacity. | Limit timber harvest to 25% of a watershed over a 25-30 year period (1% of inventory harvested per year) | Reeves et al (1993), Berris and Harr (1987), Heeswijk et al. (1995), LaVen and Lehre (1977), Montgomery and Buffington (1993), Harr (1983) |
| Road Density          | Road failures, increased sediment yield, elevated peak discharge, decreased base flows                          | Widening, decreased depth and pool frequency, increased heat exchange and warming. Reduced summer carrying capacity. | Limit road density to less than 2.5 mi./sq. mi.  | Armentrout et al. (1998), NMFS (1995), NMFS (1996), Jones and Grant (1996), LaVen and Lehre (1977), Harr (1983)                            |
| Road Stream Crossings | Major sediment contributions when culverts plug, multiple crossing failure leads to catastrophic sediment yield | Widening, decreased depth and pool frequency, increased heat exchange and warming. Loss of riparian vegetation.      | Limit stream crossings to no more than 1.5 per mile of stream  | Armentrout et al. (1998)   |

### Need annual inspection and maintenance of roads

Regular maintenance is essential for minimizing sediment contributions from road networks into streams. A standard recommendation is that all roads and drainage structures should be inspected at least once annually, prior to the beginning of the rainy season (Weaver and Hagans 1994). Additional maintenance is necessary during and following peak winter storms (Weaver and Hagans 1994). Given the extensive road networks present on USFS lands, this level of maintenance is unlikely occurring now. For example, the Klamath National Forest has approximately three times more road miles than can be annually inspected and actively maintained (de la Fuente and Elder 1998). Therefore, we request that the waiver include a requirement that the each National Forest involved develop and implement a plan to reduce its road network to levels than can be adequately (i.e. at least annually) inspected and maintained. Additional comments regarding road maintenance are included in the ‘Additional Comments on the Monitoring and Reporting Program’ section below.

## **Monitoring and Reporting Program needs to be more specific**

### General comments on Monitoring and Reporting Program

As with many aspects of the Draft Waiver, the Monitoring and Reporting Program suffers from a lack of specificity. Without more specifics in the Monitoring and Reporting Program, we cannot determine whether sufficient and appropriate monitoring will be set up to ensure accurate and timely inspections and reporting.

#### Who will do the monitoring and reporting?

Compliance with the Waiver will be identified and documented through the Monitoring and Reporting Program. That program element, therefore, is critical to having a transparent and effective corrective action plan and adaptive management process. Intensive inspections are necessary.

The Draft Waiver and Monitoring and Reporting Program propose that the USFS conduct all monitoring and reporting. Water Board is not going to be a part of that process, due to their limited funding and availability. We do not mean to be disrespectful to the USFS, but self-monitoring and self-reporting are generally, notoriously problematic. This has the potential for not being timely, accurate, nor effective in catching things that are violations. There will always be the likelihood and temptation for the discharger (even public agencies like USFS) to perform repairs so they do not get a violation. There is also the potential for intentional or unintentional abuse. There has to be a very clear method for self monitoring and reporting with penalties for not doing so in a timely manner.

Neither the Waiver nor the Monitoring Program provide clarity as to what constitutes a violation of the Waiver, nor is it clear what would trigger an abatement-requiring action. Almost all the Cleanup and Abatement Orders (and fines) issued by the Water Board are in direct response to complaints from the public or state agencies other than the Board about water quality problems caused by some activity. Who will fill that role on USFS lands that are remote from public view and typically not visited by other state regulatory agencies? Under the Waiver, the USFS is expected to police and report itself.

We recommend that in addition to USFS monitoring and self-reporting, the Water Board should require the USFS to hire an outside inspection team that reports to the Water Board and is funded by the Forest Service. This unbiased entity with professional (trained and qualified) technical specialists would perform at least a sampling of compliance and performance reviews each year. That would provide a QA/QC second-opinion on the effectiveness of work and water quality protection activities to be conducted under the Waiver. Specific suggestions for how an outside review could be conducted are included in the ‘Additional Comments on the Monitoring and Reporting Program’ section below

#### Representative in-channel beneficial use monitoring

The monitoring program proposes in-channel monitoring to assess the effectiveness of BMPs at a watershed scale:

“The purpose of in-channel monitoring of beneficial uses is to determine whether BMPs collectively are effective in protecting water quality at the watershed scale. Effectiveness will be assessed by monitoring trends in channel characteristics that affect beneficial uses and by comparing channel characteristics of streams downstream of intensively managed areas with those in pristine watersheds (the paired watershed approach).”

Such an assessment approach is problematic and is unlikely to be verifiable. It is also a money pit with no assurance that meaningful information will be obtained on the effectiveness of measures to protect water quality. Apparent improvements in downstream water quality may provide a false sense of security, but would not likely represent cause-and-effect relationships. The further downstream monitoring occurs from a restoration site or a managed area, the more difficult it is to determine that changes measured in water quality (good or bad) actually have anything to do with a particular project. There is simply too much “noise” in the system for it to be a reliable way to document the effectiveness of water quality restoration, protection, or control methods.

In addition, some water quality treatments produce an absence of measurable impacts, not an improvement in water quality. These treatments are designed to be preventive. For example, upgrading a culverted stream crossing, or replacing a culvert with a bridge, will have great long-term water quality benefits because such facilities are less likely (or unlikely) to fail in a large storm event. It would be difficult, however, to measure the effectiveness of these BMPs with in-channel water quality monitoring.

As noted in the excerpt quoted above, the Monitoring and Reporting Program proposes to use paired basins to evaluate the effectiveness of the water quality protection and control measures. The use of paired basins implies, however, that one of the watersheds will not receive the treatments needed to protect and improve water quality. Is this warranted? Can we afford to “sacrifice” a number of key or critical publicly-owned watersheds, i.e, by leaving untreated, unprotected watersheds as controls, in an uncertain attempt to measure an improvement in the treated basins?

It is our position that the technical ability to measure water quality improvements in treated watersheds versus untreated basins is a nearly impossible task and is not worth the effort nor resource sacrifice. Any water quality changes detected in such a monitoring program could likely be the result of myriad other, unrelated sources of water quality improvement or degradation.

To sort this all out is a serious and difficult research project. It is extremely costly to develop and perpetuate such a monitoring program, and it takes significant long-term commitment of resources and scientifically trained personnel.

Consequently, we recommend committing significant resources to site and effectiveness monitoring rather than to off-site water quality monitoring or paired basin studies. Water quality

monitoring should be restricted to detailed site monitoring or monitoring streams immediately above and below project areas or specific work sites. This reduces effort, limits the potential influence of outside sources of water quality “noise,” and evaluates the actual impacts and rate of recovery of water quality caused by, or attributable to specific project activities.

#### Need for public review of documents relied upon by the Waiver and Monitoring and Reporting Program

The Monitoring and Reporting Program document notes that a Klamath National Forest Sediment and Temperature Monitoring Plan and Quality Assurance Plan in being developed; however, it is our understanding that there are no opportunities for allowing Tribes or the public to participate in the development of this plan. This is unfortunate and does not promote transparency. We request that all current and future monitoring plans and monitoring protocols relied upon in the Waiver be open to comment by the public, or at least to other agencies such as Tribes. This is particularly important because much of the contents of the *Draft Waiver* and Monitoring and Reporting Plan are general and rely on references to other documents for establishment of details.

### **ADDITIONAL COMMENTS ON THE DRAFT WAIVER**

In this section, we offer comments on specific sections of the *Draft Waiver*, referenced by page or section number.

Finding #4 - Activities (page 2) - Roads:

Road maintenance needs to be more closely defined in the documents. It should include any type of work on any road that could result in sediment delivery to a stream. It should include landslide cleanup.

Finding #4 - Activities (page 2) - Roads:

Road upgrading and road storm-proofing should be included as activities under ‘roads’. Also, it is currently unclear whether rock quarries and rock pits are included under roads or if they are considered a mining activity. We recommend explicitly listing rock quarries and rock pits under roads and road activities.

Finding #4 - Activities (page 2) - Restoration:

We recommend adding road storm proofing (upgrading) as an activity under restoration.

Finding #4 - Activities (page 2) – Fire Suppression:

We recommend changing “...impact riparian areas during the fire fighting...” to “...impact riparian areas during and after the fire fighting...”. Also, in addition to building of new roads, road re-opening should also be included as a covered activity. We suggest the development of a fire policy in the waiver that takes into consideration salvage logging after wildfires and the protection of water quality during fire fighting.

Finding #5 – page 3 - Mining:

The definition of mining should be clearer. Does mining include the development and use of quarries and rock pits? The Waiver should cover control of the discharge of sediment from quarries and rock pits.

Finding #14 – page 5 – Key Watersheds:

It is specifically stated in the draft Waiver that Key Watersheds are the cornerstone for maintaining and recovering habitat for anadromous salmonids. The selection of key watersheds, for the purpose of the Waiver, needs several changes. The Regional Water Board needs to be able to designate Key (Unique, Critical, etc.) Watersheds outside of the normal USFS process. There should be a public process for designating new Key Watersheds, including the ability for the public or other entities to petition for watersheds to be added to the list.

If the Waiver is to be successful, there needs to be a mechanism that enables the identification of key or unique watersheds that were not in the original USFS Aquatic Conservation Strategy. These would likely be the Tier 2 watersheds and other watersheds where the maintenance of water quality is critically important but which were never included in the federal process for designating Key Watersheds for California. These Tier 2 watersheds were employed on federal lands in Oregon and Washington. There needs to be a mechanism for their inclusion in the Waiver process.

Finding #14 – page 5, paragraph a – Key Watersheds:

The draft Waiver says that for Key Watersheds there is “a policy of no net increase in total road mileage in the watershed.” It should be noted that this is a potentially flawed policy that assumes that current conditions are acceptable in all key watersheds - even those with high road densities. Even a low road density in some watersheds can be seriously detrimental to water quality. There should be a transportation analysis (plan) and impact analysis that evaluates road densities and determines the core road network that is needed in each Key Watershed. Actions should be taken then to lower road densities to a level that minimizes or eliminates damage to water quality, aquatic habitat and other beneficial uses. That is, the policy should be to decrease road densities to a level that no longer threatens or negatively impacts water quality - not simply to maintain impacts at their current level.

Finding #14 – page 6, paragraph c – Watershed Restoration:

The emphasis on watershed restoration in the Waiver is important. It is also important, however, to have a watershed protection program in place to protect Key Watersheds from degradation. Thus, resources and funding often need to be focused on projects that are not designed to restore degraded conditions, but rather to make sure that high quality waters and habitat are adequately protected. It is much more cost-effective to protect high value, clean water and habitat than it is to wait until the water and habitat has become degraded and then spend money to try to restore these watersheds or keep it from getting worse.

Finding #27 – page 9 – The Waiver:

One of the three “primary substantive components” specified in the Waiver is the “timely implementation of watershed restoration plans.” This is a critical statement of intent in the



Waiver, but one that lacks a time-line with measures of performance or its means of accomplishment. First, “timely” needs to be defined, otherwise there is no way to enforce the Regional Water Board’s and Waiver’s objective. Second, the USFS is and continues to be severely short of operational funds and cannot adequately maintain the road system they have. How will the USFS meet a requirement that they conduct watershed restoration in a “timely” manner? The Legacy Roads and Trails program currently funded by Congress for restoration (mostly road decommissioning) is inadequate to make this happen. What will happen when and if the Legacy Roads and Trails program is discontinued? How will restoration be funded sufficiently to satisfy the Waiver’s requirements for timely implementation? Will the Waiver allow non-performance if there is a lack of money?

Finding #29 – page 9 – The Waiver:

The Waiver requires that the USFS inform the Water Board concerning its inventories of sediment delivery sites, an annual list of watersheds that are prioritized for restoration, and the progress that has been made in each watershed. Although it is stated that successful implementation of watershed restoration plans is required for compliance, there are no criteria that detail how much effort will be required to meet the Waiver objectives of reasonable progress. It is left to the negotiations between the Water Board and the Forest Service in a process that lacks transparency.

In private timberland Aquatic Habitat Conservation Plans several measures of progress have been employed by federal agencies to ensure that progress is adequate. These measures and goals can include such metrics as ‘miles of road required to be restored (upgraded, storm-proofed or decommissioned) per year or per decade’ or ‘dollars spent on restoration per year’ or ‘volumetric sediment delivery prevention per year.’ The target metric should be developed such that all the restoration work is projected to be completed in, say, 25- to 50 years (or whatever time frame is viewed as “reasonable” by the Water Board and the public), with the highest priority work being completed first. It is our belief that such a metric and restoration program/schedule should be developed and applied to the various Forests covered by the Waiver, and that the annual performance and plans for upcoming years be reviewed and approved by the Water Board each year.

The Waiver’s performance measures should not be left entirely to annual negotiations in a process lacking public input and transparency.

Finding #33-37 – page 10-11 – Monitoring and Reporting:

The Waiver is supposed to include monitoring and reporting requirements that will enable the Regional Water Board to assess the effectiveness of the Waiver at protecting water quality.

- The five “findings” of the Waiver that are included in this section do not constitute a Monitoring and Reporting Program of the sort normally developed and employed by the Regional Water Board. They are vague and rely on intent rather than the specificity needed to evaluate what is being proposed and whether or not it will be effective in informing the Board concerning the level of water quality protection that has been achieved.
- The USFS BMP evaluation program is included by reference in the Waiver as one of the measures of monitoring and evaluation that the Regional Water Board will rely on. The Regional Water Board has not, however, provided a review of the BMP evaluation process or program to demonstrate that it will be sufficient to accomplish the goals of protecting

water quality. Such a review, including an analysis of its effectiveness, should be made a part of the Waiver.

- It is recommended that the Regional Water Board, or an outside entity, evaluate the USFS BMP Evaluation Program to determine its suitability and the appropriateness and effectiveness of BMP implementation in protecting water quality.
- The proposed monitoring of instream conditions is vague and not adequately described to demonstrate that it will achieve its intended purpose (see discussions regarding this topic below in the ‘Additional Comments on the Monitoring and Reporting Program’ section).
- An annual training and education program for USFS staff, especially for those who work in the field or supervise/oversee contractors, is a critically important part of the Waiver program for protecting and restoring water quality. Such a program would include training on all aspects of planning, designing and implementing water quality protection and restoration measures. Whether it belongs with Monitoring and Reporting, or elsewhere, it should be an important component of the Waiver requirements.

Finding #42 – page 12 – Additional Findings:

This finding is deeply disturbing. In essence it states that because the Waiver will “overall result in a net benefit to water quality...” then watersheds with “high quality waters” (those exhibiting better water quality than is currently required by the state) may be degraded as long as such changes are “consistent with the maximum benefit to the people of the state, and will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.”

It is our opinion that high quality watersheds should be protected and maintained as such and should not allowed to be degraded by management activities, and that those watersheds that are degraded should be restored to conditions that will at least meet minimum water quality objectives. Just because there is an overall net improvement of water quality on a National Forest does mean that the highest quality waters should be allowed to degrade. It is our opinion that we should not be looking simply for marginal net improvement, but that we should strive to protect the best of what there is and to improve those areas that have been degraded by Forest management activities. In other words: “Protect the best, restore the rest.”

Order #1 – page 13:

The Waiver stresses that riparian zones are to be managed to protect water quality, including stream temperature conditions. This objective does not consider the retention of large trees for recruitment of large woody debris (LWD) in the riparian zone. It is focused on maintaining “natural” shade conditions, but where topography provides sufficient natural shade conditions it neither addresses nor requires the retention of large trees in the riparian zone for other water quality and beneficial use purposes. Shade and cover in fish-bearing streams can be provided by downed organic debris as well as the formation and retention of deep pools. Proposals for canopy reduction should also consider LWD recruitment requirements.

Order #1 – page 13:

The Waiver indicates that “timely implementation [of riparian management strategies] is necessary...for compliance.” As elsewhere, no standards are provided to define what “timely” means.

Order #2 – page 14:

“The USFS shall actively address legacy or pre-existing discharges...” but there is no definition of “actively” nor is there a standard which defines when the USFS will be in - or out - of compliance. This and many other elements of the Waiver lack standards with which to define compliance or to provide a meaningful target or measure that would trigger enforcement standards, if compliance is not met.

Order #2 – page 14:

The Waiver does not include any requirement that the schedule proposed by each Forest meet a defined standard for treating legacy and pre-existing discharges. We believe the Forests (and the public and other stakeholders) should at least be given guidance on an acceptable schedule, including the percentage of the total program that should be completed each year and the duration over which the Regional Water Board expects each Forest to complete the tasks necessary to protect and restore water quality.

Will the water quality protection and restoration work be completed in 10 years, 50 years or 100 years? What is the expectation of the Regional Water Board?

Order #4 – page 14:

The Waiver indicates that the Regional Water Board and USFS shall work together “to resolve any issues associated with prioritization of watersheds, especially with regard to addressing existing discharge sites and/or...” (emphasis added) We strongly believe that they should work together to address both existing and potential discharge sites, not just the existing discharge sites. This would help in making sure that key watersheds with high quality water are protected while those that are degraded or impacted are restored.

Order #14 – page 15:

This section of the Waiver addresses compliance. Each Forest is apparently responsible for monitoring and reporting its own compliance. As we indicated above there are inherent and potential problems (and outright conflicts) with self-monitoring and reporting. Are Forests expected to report their own violations? Are there measures and triggers that can be used by the Forests to determine what standards should be employed when determining when and if a violation has occurred?

We believe there should at minimum be an annual unbiased independent evaluation of the compliance reporting process to ensure it is meeting the expected standards. The Regional Water Board does not have the staff to perform an analysis that would require a strong sampling of USFS activities that are – or are not – being reported. Our proposed studied evaluation and verification program would make the compliance reporting process more transparent and would provide the necessary stakeholder confidence and support.

Order #22 – page 16:

This section of the Waiver specifically excludes discharges from mining waste. It is not stated - and should be - whether or not mining includes the development and use of rock quarries, rock pits and alluvial mining in rivers and floodplains, or the discharge and disposal of such “mining”

waste, including the overburden that is produced by such activities. We believe these activities should be expressly included under the Waiver.

Waiver Categories - page 18 – Category A (Low Risk Activities), item #6:  
Routine annual road maintenance should not qualify as having a low risk of impacting water quality. Literature and studies show that most USFS road systems have a hydrologic connectivity exceeding 40%. This means that any grading and surface disturbances to the road surface, ditch and cutbank on hydrologically connected roads will directly and negatively affect water quality. Road maintenance activities on hydrologically connected road surfaces and ditches should instead be classified as a Category B activity.

Waiver Categories - page 18 – Category A (Low Risk Activities), item #6:  
There is no definition of what constitutes a “low impact replacement/modification/upgrading of a stream crossing culvert.” We agree that ditch relief culvert maintenance probably qualifies, so long as the culvert is not hydrologically connected. We suggest that any replacement of a stream crossing culvert on a stream that is flowing at the time of the proposed project work should be classified as a Category B activity.

Waiver Categories - page 18 – Category B (Moderate Risk Activities):  
Road upgrading and road storm-proofing activities should be listed as Category B activities.

Waiver Categories - page 18 – Category B (Moderate Risk Activities), item #10:  
Quarries and rock pits should be added to this Category B activity.

Waiver Categories - page 18 – Category B (Moderate Risk Activities), item #12:  
Watershed projects should also specifically include erosion control projects, landslide remediation projects, bank stabilization projects, earth moving projects on a floodplain, and side channel development and improvement projects. These all have the potential to impact water quality.

Waiver Categories - page 19 – Category B (Moderate Risk Activities), Category B Conditions, item #1a:  
Two conditions that should be added to the list are activities within, or which could affect, highly erodible soil areas, including decomposed granitic soils, and activities within or which could affect all hydrologically connected bare soil areas, including gullies, road surfaces or ditches

Waiver Categories - page 19 – Category B (Moderate Risk Activities), Category B Conditions, item #1b, vii:  
Add the activity of developing or improving side channels and other earth-moving activities on flood plains.

Waiver Categories - page 19 – Category B (Moderate Risk Activities), Category B Conditions, item #1b, x:  
Consider adding the following activity as item #x – “heavy equipment earth moving work (grading, excavating, etc) on hydrologically connected road surfaces and ditches.”

Waiver Categories - page 20 – Category B (Moderate Risk Activities), Category B Conditions, item #5:

This element of the Waiver requires the USFS to identify and treat discharge sites in a project area if the watershed has not already had a watershed restoration plan developed. It is important to be sure that such project-area treatments do not cut off legacy roads that may traverse through a project area thereby precluding future treatment of existing or potential discharge sites further along that road. Legacy (abandoned) roads generally need to be treated from their terminal end back to their junction with an active, maintained road. Treating a short section in the middle may inadvertently cut off access to the remainder of the legacy.

Waiver Categories - page 20 – Category B (Moderate Risk Activities), Category B Conditions, item #7:

The Waiver requires that activities be monitored pursuant to the Monitoring and Reporting Program. There is also the direct implication that if during an activity “on-the-ground prescriptions were not implemented or that unacceptable impacts occurred,” then corrective measures shall be applied “as soon as feasible”, but no guidance to the timing of the response is provided.

In other Monitoring and Reporting Plans we have seen requirements that such incidents have to be reported within, say, 24 hours and they have to be corrected within a designated timeframe unless the Regional Water Board grants a written exception and a revised schedule. As elsewhere in the Waiver, specificity is lacking in the description of the measures, how the measures are to be applied, and the timeliness of expected actions. This part of the Waiver will be functional only if self-monitoring and reporting are adequate and corrective actions are appropriate, effective and timely.

Waiver Categories - page 20 – Category B (Moderate Risk Activities), Category B Conditions, item #9:

The Waiver does not define what constitutes a “significant discharge” from grazing activities in a riparian zone that must then be reported.

Waiver Categories - page 21 – Category B (Moderate Risk Activities), Category B Conditions, item #14:

We recommend changing: “...adjacent to streams and drainages, or other locations or situations where likelihood of discharge exists.” to “...adjacent to streams and drainages, including hydrologically connected roads surfaces, ditches and other bare, erodible soil areas, or other locations or situations where likelihood of discharge exists.”

It is important to expressly point out that hydrologically connected bare areas, including roads, are features that directly impact water quality and should therefore be treated.

Waiver Categories - page 21 – Category B (Moderate Risk Activities), Category B Conditions, item #16:

It is extremely important that road densities be reduced in Key Watersheds and other “high risk watersheds”, rather than just stating that new road construction should be “minimized.” Generally, road mileage needs to be reduced, not increased, in these critically important areas. This should be accomplished by performing transportation analysis (planning) and impact

studies that identify the location of high risk roads and that propose a core or minimum road network both needed for management and necessary for the protection of the aquatic ecosystem and high value water quality conditions of each such watershed. Perhaps some new ridge roads will need to be constructed while, at the same time, higher risk roads probably need to be eliminated.

Waiver Categories - page 21 – Category B (Moderate Risk Activities), Category B Conditions: unlisted (recommended addition) item #19:

Training and education of all Forest staff including contract specialists and contracting officer's representatives, supervisors, engineers, resource specialists, restoration specialists, laborers, technicians, equipment operators, and contractors need to be formalized and repeated on an annual basis. Water quality protection measures and the requirements of the Waiver need to be institutionalized throughout the organization. Failures and successes need to be a part of the educational experience so that information and knowledge is transmitted throughout the organization. Basic principles and advances in the science and conduct of water quality protection and monitoring need to be transmitted to appropriate staff. This type of training is routine for industrial timber companies operating under a federally-approved Habitat Conservation Plan.

## **ADDITIONAL COMMENTS ON THE MONITORING AND REPORTING PROGRAM**

In this section, we offer comments on specific sections of the Monitoring and Reporting Program (MRP), referenced by page or section number.

### **Monitoring and Reporting Requirements (pages 1-2)**

Much of the MRP relies on USFS monitoring protocols, including the Best Management Practices Evaluation Program (BMPEP) and the Klamath National Forest Sediment and Temperature Monitoring Plan and Quality Assurance Plan. The proposed Regional Water Board MRP *“relies on existing well-documented monitoring methods”* including the BMPEP monitoring protocols (USFS 2001) and the Stream Condition Inventory Protocols (USFS 2002). Unfortunately, “well documented” does not necessarily equate with technically adequate, effective, or appropriate for the purpose for which they are being employed in the Waiver and the MRP. The fact that the MRP is “relying” on these protocols makes them important, and makes it imperative that they receive outside scientific peer review as to their adequacy and ability to yield monitoring results that will differentiate project performance from background “noise” and water quality protection. The MRP offers no evidence or assertions that they are either adequate or appropriate, deferring instead to the USFS who developed the protocols. The USFS documents are methods manuals that appear to have been thoughtfully prepared and reviewed within the agency; however, it is unknown whether they received external review, or whether monitoring results using these protocols have appeared in peer reviewed journal articles. This does not mean these documents are not appropriate for the intended purpose; however, due to the reliance of the MRP on these documents, it is necessary that a detailed external review of these documents be conducted. It appears that such a review has not yet occurred, and we request the Regional Water Board organize a review prior to endorsing these documents.

The MRP states that “*Certain criteria and methods for decisions about sample site location...will be developed, in collaboration with the Regional Board staff, prior to initiation of the monitoring program.*” We request that these decisions (about sample size, sampling locations, and other specific monitoring elements) be made in an open process that includes the ability for stakeholders and the public to provide input, rather than being conducted solely between the Regional Water Board and the Forest Service. A public process would allow for more detailed and thorough review of the proposed monitoring program. It is likely that many of the selected monitoring sites, especially those for instream monitoring, will need to remain in place and actively monitored for a decade or longer (perhaps many decades). This initial selection process would be the best and perhaps only opportunity to provide input on the identification of monitoring sites and watersheds, and the specific monitoring protocols to be employed.

In addition to the specific comments provided below, we believe the Waiver’s MRP would benefit from outside audits of the BMPEP monitoring program. This outside audit should be focused on the USFS project areas and land management activities that are most likely to result in water quality impacts. The huge land area involved (approximately 7 million acres) precludes any one entity from observing all management actions. Sample projects that are monitored and inspected will necessarily be limited. The Regional Water Board will see very little of the Waiver program operations in the field, any may not be able to commit the time that would be necessary to be technically and intellectually involved in MRP field assessments and results. As it stands, the Regional Water Board will be the recipient of the data generated by the discharger – large quantities of data and and/or summary reports. This is not unusual, but is usually handled by MRP standards that are more stringent and unambiguous.

The one thing that is unusual about this Waiver and MRP is the scale of the two programs. The scale makes them fundamentally unique and it is not clear that the Regional Water Board has taken this into account. Even with a QAPP in place, there is likely to be too much occurring across the various Forests for there to be adequate quality control. In our opinion, the scale requires the use of outside audits, funded by the discharger, that provide the QA/QC that is necessary to validate the MRP data and support (or contradict) the conclusions that are forwarded to the Regional Water Board each year. There are several ways this might be done. First, the Regional Water Board might hire or contract outside the agency to complete the annual audits and spot checks. They would act as unbiased outside observers of the process and the data. Alternatively, the Regional Water Board might hire and supervise an in-field team of technically experienced monitors to audit and inspect projects and report on the monitoring results. Team expenses and salaries would be paid by the USFS but monitors would be hired and managed through an outside entity that would not require USFS or Regional Water Board supervision. In this manner, the discharger is obligated for the costs of the audit program, but does not participate in the staffing, supervision, selection of work tasks, analysis of data, synthesis and development of results, and transmittal of findings. The Regional Water Board then would have new and valuable information that would allow it to better evaluate the program and its effectiveness at protecting and improving water quality. Use of an outside team would also address the potential conflict of interest issues noted in the ‘Monitoring and Reporting Program needs to be more specific’ section above.

## 1. USFS-Wide Monitoring

### 1.A.1. Administrative Implementation Monitoring (page 2)

This section notes the projects in Category B (moderate risk) will implement monitoring based on a “checklist” approach; however, an example checklist is not available for review in the MRP. The Regional Water Board states that this process will be the “*primary systematic means for early detection of potential water quality problems...*” but the MRP does not provide any details or guidance on exactly how this is supposed to work. What would be the trigger on the checklist for determining that the project represents a potential water quality problem? For the checklist to be successful in identifying potential water quality impacts, it has to contain clear quantitative guidance or triggers that would compel the USFS to remediate problems.

The MRP also requires the checklist monitoring be completed “*early enough to allow corrective actions to be taken, if needed, prior to the onset of the first winter.*” It is important that the contents of the check list be reviewed and that a specific date for submission of the annual checklist is identified by the Regional Water Board in the MRP. Without the specific due date, this part of the MRP becomes difficult or impossible to enforce. Also, it should be clarified in the MRP who creates the checklist for each project (will it be the Regional Water Board, or the USFS?).

### 1.A.2. BMP Evaluation Program Monitoring (pages 3-4)

A. The BMPEP monitoring program is proposed to employ a random site selection process, as currently used by the Forest Service. This has statistical benefits, but we believe it would be better to employ a more focused, non-random sampling strategy. The goal of the Waiver program is to “*better and more efficiently*” protect the beneficial uses of water across the landscape, and the MRP is designed to “*allow the Water Board to assess the Waiver’s effectiveness at protecting water quality.*”

From our perspective it may be more important to strategically focus the BMP monitoring in places where the BMPs are more likely to be “stressed” and water quality is more highly threatened with potential impacts. How is it helpful to monitor BMP effectiveness in locations where there is a minimal potential for BMPs to fail or perform poorly, and where there is only minimal threat to water quality? The USFS already has a random BMPEP process for their lands and perhaps that should be continued outside the Waiver process. That would provide information on BMP performance in less sensitive project areas. The Waiver MRP BMPEP process should be strictly applied to prioritized sites and activities in more vulnerable locations.

The MRP currently does not specify what type of monitoring should be employed for “*follow-up monitoring.*” Follow-up monitoring of ineffective or poorly implemented sites, as stated here and as required in the MRP, should employ the same protocols as the BMPEP effectiveness monitoring.

B. Road patrols following “major storm” events are to be a part of the water quality monitoring and protection program. This is an exceptionally important part of the water quality Waiver and



MRP program and the stated requirement needs some expansion, as well as clarification and elaboration:

- First, in addition to storm patrols, all roads on each Forest should be inspected **annually, prior to the onset of winter** to identify potential failures and sediment sources that threaten water quality. This would include stream crossing culverts, unstable fillslopes, and other active or potentially active erosion and sediment delivery sites. National Forests across the Pacific Northwest are well known to lack sufficient resources to maintain their forest road systems, so this is a critically important program element for the MRP. This type of inspection program is typically required and accomplished by large private industrial forestland owners operating under Aquatic Habitat Conservation Plans (e.g., Green Diamond Resource Company and Humboldt Redwood Company) and it is equally important on National Forest lands. If a Forest cannot inspect all roads every year, then it should be required to develop and implement a long-term plan (including explicit timelines) to reduce their road network down to a level that can be inspected every year. In the interim period prior to full implementation of such plans, then each Forest should be divided into perhaps 3 sub-units, to be inspected once every three years. An alternative for this interim period is that the Forest road network could be prioritized and ranked according to its susceptibility to sediment-producing events, with high priority roads inspected every year, moderate priority roads inspected every other year, and low priority roads inspected every third year. The annual inspection process is critically important for maintaining and protecting water quality. Post-storm road inspections are necessary but not sufficient because they are largely reactive and not proactive in their approach to protecting water quality.
- The patrol program needs specific definition. For example, there is no definition of a “*major storm*” and this is what is supposed to trigger post-storm inspections. Triggering storm characteristics are typically stated as thresholds: daily precipitation (inches of precipitation in 24 hours) or storm precipitation (inches of precipitation over a storm period, such as 7 days). The thresholds of accumulated precipitation that trigger the road inspections (patrols) will be different across the landscape, across various geologies and soil units, and across the various National Forests and Forest Districts. Each designated zone or area would be defined by a geomorphically important storm event in that area. Forests can be divided into geographic, geologic, climatic, or elevation zones and monitored by continuously-reporting weather stations and rain gauges that reflect the accumulated rainfall that has occurred in the various zones.
- Finally, the road inspection program needs to have a monitoring element that requires the Forest to document, record, and report the nature and magnitude of the problems that are encountered and the treatments that are applied as a result of the road patrols. This data will be important in refining their knowledge of the risk of various roads and road systems to failure and water quality problems. This requirement is currently absent from the MRP, and we request that it be added.

### 1.A.1. Representative in-channel beneficial use monitoring (pages 3-4)

The in-channel monitoring program is supposed to allow the Regional Water Board to “*determine whether BMPs collectively are effective in protecting water quality at the watershed scale.*” As noted above in the ‘Monitoring and Reporting Program needs to be more specific’ section of these comments, in-channel beneficial use monitoring may not be worth the expense and effort.

The MRP states that because the Forest budget is limited, in-channel monitoring will be restricted. This is not the typical manner in which MRP criteria are developed. It is our understanding that the Regional Water Board develops the MRP to inform them whether or not the water quality protection and improvement actions are effective. For large industrial landowners the cost of the monitoring program usually appears to be less important than its technical ability to provide answers to the Regional Water Board. We were surprised to see such an explicit deference to the availability of funds to carry out the MRP. If a property owner cannot afford to conduct the monitoring program that is needed to evaluate the impacts of their activities, then perhaps their activities should be reduced to the level that can be adequately monitored.

The project area (approximately 7 million acres) is so large and diverse that the stated desire and intent of the Regional Water Board to restrict the MRP in-channel monitoring to “*a relatively small number of watersheds and sites*” that are representative of “*large landscapes*” within the national forest appears to undercut the ability of the program to adequately represent the various environments of each Forest. The sample size may also be reduced to the extent that the results then suffer from a sample size that is insufficient to evaluate the Waiver program and to determine the potential impacts to water quality from the land management projects that are carried out on the ground.

The MRP proposes to monitor trends in channel characteristics but the Pacific Southwest Stream Condition Inventory (SCI) monitoring methodology (USFS 2002) includes a number of other parameters that are also monitored and employed to evaluate the response of the channel to upstream land management and/or restoration activities. It is unclear (unstated) if the MRP will employ these other monitoring protocols, including a large number of channel measurements and characteristics, habitat parameters, water quality measurements (e.g., temperature), shading, organic debris parameters, and substrate parameters (e.g. particle sizes and macroinvertebrates). It seems important to provide a robust multivariate analysis of channel conditions and not just rely on basic channel characteristics to inform the process. These ambiguities in the MRP should be clarified.

As previously noted, paired watershed studies are fraught with complexities and difficulties in assigning cause and effect relationships to changes in observed variables and parameters. The MRP does not address how these typical problems will be addressed (other than to state that the paired watersheds will be screened for a close match of their basic conditions).

Paired watershed studies require long term investments in resources, capital investments and personnel and are generally considered research activities. The MRP has not stated the intended term of the paired studies, nor how long a time period will be required to satisfactorily evaluate

the management that is undertaken. The MRP does not indicate the level of investment that is expected, the duration of the “long term” project or the degree of scientific involvement and statistical expertise that will be required to analyze the data and develop the findings. If they are restricted to smaller watersheds, as the MRP suggests, then the duration of “intensive land management” in the managed watershed will be limited. What is proposed when the managed watershed is no longer being actively and intensively managed? Is there a reason to monitor watersheds that are no longer being managed? Will monitoring then be initiated in new watershed pairs? There are many unknowns in the in-channel MRP program, as we request that they be clarified to the extent possible.

When developing each in-channel monitoring project in the MRP it will be important for the Regional Water Board and the Forest Service to define the specific goals and objectives of the work at that monitoring location or site so that proper tools can be selected and employed to answer the relevant questions. Each monitoring location may have its own specific informational needs and methodologies. It will also be important to identify the standards by which success (improvement) or failure (deterioration) can be measured and reported, which will then trigger a remedial action.

It is not stated by what method it will be determined whether a deterioration in water quality or monitored channel conditions can be ascribed to management actions or to other unassociated events in a watershed. Management may not be the only cause of deteriorating conditions in a monitoring reach. As indicated in the MRP, this source of confusion or ambiguity can be diminished by selecting monitoring sites in small watersheds where other events are less likely to complicate monitoring results and data interpretation. However, this restriction then limits the ability of the Forest and the Regional Water Board to extrapolate the monitoring results across the landscape to other similar watersheds and landscape areas.

The MRP states that if SCI monitoring reveals “*adverse impacts*” to a stream channel have occurred, then restoration plans are to be developed and implemented on the upstream managed areas.

- The MRP does not define the threshold for what constitutes “*adverse impacts*.” That definition is important so restoration actions can be taken when it is exceeded. When are conditions considered to be adversely affected?
- If SCI channel monitoring is to be conducted at intervals of five years, then the problems that caused the degradation in channel conditions and beneficial uses could be up to five years old. The damage will have already occurred here and perhaps at other comparable watershed sites across the Forest.
- The MRP does not indicate how the implementation of restoration, triggered by the identification of adverse impacts at one or more “representative” monitoring sites, is to be extrapolated across the landscape to other areas that have similar watershed characteristics and/or management actions. To be of value, the channel monitoring site would serve as a bellwether indicator for similar landscape areas, or it would serve as a trigger for widespread restoration and modification of land management practices judged to have contributed to the reduction in beneficial uses in the monitored watershed. It is not obvious (it is not stated) how the Regional Water Board or the Forest Service will use the

monitoring data to extrapolate changes in practices or restoration actions that may need to be taken across the landscape.

Sincerely,

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