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1455 Market Street
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August 1, 2008

Via e-mail

SUBJECT: Public Notice 2004-28820N – Gualala River Gravel Mining, Sonoma County, California

Dear Mr. Matsumoto:

I submit the following comments on PN 2004-28820N, instream gravel mining by Bedrock Products, Inc. on lands of Gualala Redwoods Inc., in northwestern Sonoma County. I have previously submitted relevant correspondence to the San Francisco USACE Regulatory Branch regarding direct and indirect impacts of unauthorized gravel mining on the Gualala River within the project area, on behalf of Friends of the Gualala River (dated October 26, 2006; see attached file). Please include and consider my current comments, and the 2006 compliance letter, in the subject permit file.

I am a professional plant ecologist (Ph.D, University of Western Ontario, London, Canada) specializing in the conservation, restoration, and management of coastal vegetation, rare and endangered species, and their ecosystems. I have over 27 years of professional experience in this capacity, including extensive regulatory and environmental planning experience with the U.S. Fish and Wildlife Service (Sacramento Fish and Wildlife Office) and the U.S. Army Corps of Engineers, San Francisco District Regulatory Branch. My current independent work as a consultant includes preparation of CEQA/NEPA (EIR/S) documents for the California Department of Water Resources and California Coastal Conservancy, and preparation or advisory review of restoration and management plans for coastal streams, lagoons, dunes and tidal wetlands restoration plans for agencies such as California State Parks, U.S. Fish and Wildlife Service, and nonprofit conservation organizations. My primary residence is in the lower Gualala River watershed where gravel mining has been conducted, and I have personally observed stream and riparian habitat conditions in the lower Gualala River reaches (and its tributaries) frequently and year-round since 2000.

1. GENERAL COMMENTS

1.1 Substantial deficiencies and omissions in supporting environmental documentation.

Based on my critical review of the lengthy and detailed Negative Declaration (CEQA) for the Gualala River Gravel Mining proposal prepared by Sonoma County Department of Permit and Resource Management (which assesses substantially the same project description), and the briefer Corps Public Notice, I have concluded that the applicant's supporting environmental documents for project as currently proposed have substantial flaws regarding environmental impact assessment (particularly regarding environmental baseline and cumulative and indirect long-term impacts), adequacy and efficacy of mitigation, and especially analysis of alternatives, which are grossly deficient. Most environmental supporting documents and data were prepared by consultants retained by the applicant (or its landowner/co-applicant, Gualala Redwoods Inc.) for Sonoma County PRMD review, on which the Corps may be relying for its own public interest review, NEPA assessment, and Clean Water Act Section 404(b)(1) findings, have two fundamental flaws:

(a) Supporting environmental data and documents are grossly outdated and inadequate for assessment of environmental impacts and mitigation. The fish data and analysis covering the project area, prepared by Dennis Halligan of Natural Resources Management Corporation reported in 2003, and included data only up to 2002. Substantial, relevant and significant changes in environmental baseline conditions (fish distribution and abundance, instream and riparian habitat abundance, distribution and quality) have occurred in the mined reaches of the lower Gualala River in the last 6 years, following multiple extreme high flow events, and drought conditions during 2008 and 2007. Unless the Corps has received adequate additional data covering 2003-2008 to address the substantial changed conditions in the Gualala River's mined reaches, both within the mined bars and surrounding mined sites, the Corps (and National Marine Fisheries/NOAA, which the Corps must consult for Endangered Species Act compliance) have a fundamentally deficient environmental baseline for assessment of potential significant fish impacts, including a federally listed steelhead population.

The principal environmental report on hydrologic and geomorphic conditions in the project area (including estimates of bedload replenishment/sediment budgets for mined reaches) prepared by Matt O'Connor in 2003, also is limited to data only up to 2002. These data do not reflect the important changes in the local, reach-specific sediment budgets, and the extent, location, and maturity (density, size) of sediment-trapping/sediment-stabilizing woody riparian woodland vegetation (principally alder, willow, blackberry, horsetail) on partially stabilized bar and floodplain landforms, or the extent of wetland vegetation (in-stream torrent sedge marsh), within channel banks and beds. Substantial changes in the extent and maturity of riparian and wetland vegetation have in and surrounding mined reaches, based on my direct observations since 2002, have significantly increased rates and magnitudes of coarse sediment trapping and accretion within vegetated bar and floodplain habitats. Changes in vegetation-induced sediment stabilization, combined with relatively low rates of sediment transport in the dry 2007-2008 years, should reasonably be expected to reduce sand and gravel replenishment of mined bars and stream segments downstream of them. Again, unless the Corps has received adequate data covering 2003-2008 to address the substantial changed

geomorphic and local (specific to mined reaches) sediment budget conditions, meaningful and adequate environmental assessment would not be possible.

The substitution of assumptions or speculation for either meaningful qualitative or quantitative empirical evidence about the aquatic ecology and geomorphic conditions of the project area in 2003-2008 period would risk erroneous estimation of the magnitude, intensity, and context (“significance”) of environmental impacts related to gravel replenishment and bar/channel stability, and the adequacy of corresponding mitigation measures.

(b) The environmental analysis of gravel mining impacts fails to consider cumulative direct (perpetual disturbance) impacts to riparian vegetation and ecological succession.

The environmental analyses provided by the applicant adopt a narrow static CEQA interpretation of environmental “existing conditions” as the baseline, and fail to address the NEPA-required assessment of long-term cumulative direct and indirect impacts of gravel mining. Even a cursory review of aerial photography in the lower Gualala River (such as Google Earth’s circa 2003 imagery currently on line, or the fall 2007 oblique aerial photography of the mined reaches by Kenneth and Gabrielle Adelman on the Friends of the Gualala River website (www.gualalariver.org) reveals that the largest extensive gaps in riparian woodland vegetation (open gravel flats) are primarily associated with past mining sites.

The perpetual disturbance of mined gravel bars prevents riparian vegetation from maturing and exerting geomorphic and ecological effects on stream habitats, including critical habitat for listed salmonids. The Corps, following NEPA guidance, cannot apply this blinkered and narrow, static “existing condition” snapshot of baseline conditions of gravel-mined reaches for impact assessment. To do so would obscure the most significant long-term cumulative impact of gravel mining – the permanent exclusion of riparian vegetation in mined sites. To do so would also reward the applicant and landowner for past (Corps) unauthorized activities, and provide an undue incentive for noncompliance with the Clean Water Act, Endangered Species Act, and Corps permit regulations.

To correct the fundamental flaws in environmental data and analyses for the proposed project, I recommend the following solutions for further processing of the permit and minimally adequate environmental analysis:

(1) The applicant shall submit to the Corps scientifically sound and adequate data to update the 2003 environmental documents (geomorphic and fisheries conditions) to current conditions, with emphasis on the principal significant environmental resources and processes affected by gravel mining, including reach-specific sediment budgets, distribution and abundance of fish species (with size-classes), channel and bar morphology, sediment particle size distribution, and distribution and maturity (tree/shrub size-class, torrent sedge area) of riparian and wetland vegetation.

(2) The applicant shall submit a scientifically sound empirical analysis of the area, distribution, and maturity of riparian and wetland vegetation within historically mined areas, and intervening unmined channel, bar and floodplain areas upstream and downstream of mined sites. This analysis shall rely on recent (post-2005) aerial photogrammetric data, and shall include

comparative review of older aerial photography (e.g. North Coast Watershed Assessment Program – Gualala River Watershed Assessment Appendices, March, 2003; Klamt, R.R., C. LeDoux-Bloom, J. Clements, M. Fuller, D. Morse, and M. Scruggs. Gualala River Watershed Assessment Report. North Coast Watershed Assessment Program, California Resources Agency and California Environmental Protection Agency, Sacramento, CA).

1.2. Incomplete scope of permit application and Public Notice; need for after-the-fact authorization and retrospective scope of analysis. The Public Notice (PN) fails to disclose that past episodes of gravel mining within the project area, conducted by the applicant and its predecessors in interest (including the landowner, Gualala Redwoods, Inc. - GRI) were not authorized by the Corps. Moreover, these unauthorized activities were known to be violations on the part of the applicant and the Corps. The Corps was notified by Friends of the Gualala River in fall 2006 that unauthorized gravel mining within Corps jurisdiction was in then-recent progress. Thus, the scope of the permit application, PN, and any authorization, must include after-the-fact authorization by the Corps. The Corps must also consider the cumulative impacts of past unauthorized activities performed by the applicant(s) within the geographic scope of the current PN, and apply this to the current environmental assessment and public interest analysis of mitigation.

From the perspective of environmental assessment pursuant to NEPA, CWA Section 404, and ESA regulations, the omission of past unauthorized activities from the scope of analysis and authorization makes the assessment of impacts and mitigation adequacy general, speculative, empirically untested, and open to optimistic bias. Specific and empirical assessment of impacts associated with past episodes of mining (pre-authorization) would provide a reliable guide to estimating the effectiveness of proposed mining techniques and mitigation measures. It would be arbitrary for the Corps to ignore the “after-the-fact” nature of the ongoing gravel mining in both permitting and assessment of the proposal, its impacts, and mitigation.

The results of the last two episodes of gravel mining are still evident in the field, and in ground-based and aerial photography. For example, the channel avulsion (head-cutting, breaching and channel position switching in progress between 2005-2007) at the Valley Crossing bar adjacent to the gravel processing plant provides specific empirical evidence that proposed “head of bar buffer” grading measures are likely to be inadequate to protect the morphological integrity of bar and channel complexes that are important habitat for federally listed steelhead. I incorporate by reference my letter (attached) to Sonoma County PRMD, dated August 27, 2008, qualitatively documenting the progression of the channel avulsion following over-mining of the Valley Crossing (South Fork/Wheatfield Fork confluence) bar, featuring ground photography before and after mining and high winter river flows. The current permit application, like the CEQA Negative Declaration documentation that preceded it, willfully ignores this highly conspicuous local impact of gravel mining, gravel bar recharge failure, and failed mitigation. The Corps must correct this omission in order to complete adequate environmental reviews pursuant to NEPA, CWA Section 404(b)(1) factual determinations, and to complete its lead federal agency obligations under Section 7 ESA to consult with NOAA/NMFS.

To correct the incomplete scope of authorization and project description (time and duration), and the resulting substantial and significant deficiencies in regulatory environmental impact assessment and consultation requirements, I recommend that the Corps and applicant mutually modify the permit application package to include a description of prior unauthorized

activities performed in Corps jurisdiction by the applicant(s), and site-specific environmental assessment of the results (volumes extracted, pre- and post-project gravel bar and channel morphology, elevations, and biological data collected in compliance with County and State agency permits).

I defer to the Corps' discretion regarding the need to recirculate the PN, assuming that if substantial or significant new information (relevant to public interest review) is revealed by the full scope of activities and impacts regulated by the Corps, a recirculated or supplemental modified PN would be needed. If the Corps fully consults with State and Federal resource/regulatory agencies (CDFG, RWQCB, USFWS, NMFS) about the modified scope of permit application and impacts (*i.e.*, if they are provided the substantive equivalent content of a recirculated PN, but without actual PN recirculation to the general public, I would not object. I would object, however, to the Corps soliciting comments (or formal consultations) from agencies with regulatory authority over the project based on an incomplete project description that omits known results of past unauthorized activities.

2. SPECIFIC COMMENTS

2.1. Overall versus reach-specific extraction volumes and sediment budgets.

The PN (Introduction) states that “up to 40,000 cy of sand and gravel...” would be removed “seasonally”. I presume this refers to a cumulative annual maximum extraction volume of coarse sediment (sand and gravel), as stated in the Project Description. The Sonoma County PRMD's (CEQA) Negative Declaration assumed an “annual gravel recharge rate within the proposed project reach of 15,625 to 47,500 cubic yards”, based on outdated 2003 assessment conditions that rely on 2002 or earlier estimated data. The upper range of estimated recharge rates is about three times the lower range, and there are twelve very different gravel bar extraction locations on the Wheatfield and South Forks, each with apparently different local rates of gravel replenishment in any given year.

The significant deviation between actual local average general gravel replenishment rates indicates that there is high potential for local reach-specific or bar-specific deficits in sediment budgets of mined bars, especially following years of moderate peak winter flows (little bedload transport) or downstream of bars with significant increases in sediment trapping by riparian woodland vegetation. This appears to be precisely the situation in at least some mined gravel bars, such as Bar 62 on the Wheatfield Fork, where most of the excavated bar surface remained either unburied or only shallowly buried (less than 1 m thick gravel deposited as a low sheet at the upstream end of the bar) after mining.

A dramatic example of local bar erosion and destabilization following 2006 gravel mining is evident at the Valley Crossing bar (Annapolis Road twin bridges, adjacent to the aggregate processing site). The mined pit initiated bar flattening and a progressive head-cut of the pit during high winter flows with deficient bedload. This resulted in breaching and flattening of the bar, and channel avulsion. This is apparently an episodic and recurrent event at this repeatedly mined bar. Bar flattening, destabilization and channel avulsion (shifting of the low-flow channel to the middle of the bar) are significant impacts for federally listed steelhead. The process converts an alder-shaded,

incised channel with woody root-lined banks at the bar margin, to a dry gravel bar lobe, and replaces the perennial low-flow shaded channel with a wide, shallow, open, unvegetated summery-dry ephemeral low-flow channel lacking vegetative structure, cover, or complexity (See Baye comments to PRMD, August 28, 2007, attached). This is a significant impact to endangered species and aquatic habitat quality, and requires mitigation to prevent its recurrence.

The Corps should carefully assess the risk and biological impacts of over-extraction (extraction exceeding site-specific, year-specific recharge rates) due to annual and site-specific variability of gravel recharge rates, with emphasis on the ecological consequences of degraded bar and channel morphology.

2.2. “Variety” of extraction methods. The PN states that only Annual Extraction Plans will restrict the “variety” of gravel extraction methods formulated to minimize impacts. The PN, however, fails to state any criteria or cite any documents used for judging the relative impacts of different extraction methods in different bar settings and circumstances. It also identifies no analysis or evaluation of how effective different gravel extraction methods are at avoiding adverse impacts in the Gualala River based on empirical monitoring data from past mining episodes. Methods developed for or adapted to North Coast streams with contrasting hydrology, spatial scales, and settings, such as the Russian River, Austin Creek, or Humboldt County streams, may not necessarily perform the same way in the Gualala River.

2.3. “Appropriate agencies” review, comment, and approval. The Corps SF District has issued Letters of Permission for low-volume gravel extraction in Humboldt County, and has developed a model procedure for interagency review, comment, and approval of gravel mining plans that fully outlined in past Public Notices. The scale of LOP-authorized gravel mining is significantly smaller than that proposed in the Gualala project, but the Gualala project PN contains absolutely no procedural information on the specific roles of specific agencies in review, comment, and approval of the higher-volume Gualala gravel operations. This is inappropriate and unacceptably vague. The operation and supervision of the AEP process should be stated in the PN, and required as an enforceable permit condition. I believe that the Humboldt gravel mining LOP review process (regardless of its success in implementation) provides a useful model worthy of emulation in the Gualala River.

2.4. Co-applicant/landowner relationship with Gualala River Watershed Council (GRWC) and permit reliance on GRWC consultation. The PN states that the GRWC would collect data used to inform Annual Extraction Plans and perform a consulting role in selection of mitigation sites and mitigation methods (road decommissioning and placement of large woody debris). The PN and permit applicant fails to disclose that co-applicant and landowner, Gualala Redwoods Inc. has financial interest in some GRWC actions (e.g., grant funds obtained by GRWC are applied to improvements on GRI lands and projects). The Corps should be advised that GRI management (Henry Alden) actively and substantially participates in development of GRWC policy and actions.

The PN implicitly suggests that the GRWC is an independent third party. In fact, the close relation between GRWC and GRI indicates that the two are not independent. More importantly, the GRWC itself, to the best of my knowledge, is composed of well-informed generalist “stakeholders” in the Gualala River Watershed, but does not include any qualified experts or

professional scientists or technicians with expertise in adjudicating the adequacy or suitability of mitigation methods. The proposed role of GRWC in data collection is not inherently unreasonable because they do not themselves collect data: they collect grant funds and retain (presumably) qualified and independent scientists to collect data. This institutional, managerial function, however, does not indicate that the GRWC itself has any technical qualifications as arbiters of mitigation appropriateness. Moreover, the close relation between GRWC and GRI, and the active participation of Henry Alden of GRI in GRWC deliberations and policy, indicates that GRWC is not a disinterested and impartial expert third party reviewer or arbiter of permit-required mitigation. The PN does not state that GRI participants or their proxies in the GRWC would be recused from consultation on gravel mining mitigation.

Any outside advisory panel on which the Corps relies for recommendations of adaptive management and mitigation should have no dealings, financial or other vested interest in the applicant or landowner's affairs. If any financial or other interests between scientific advisors and the applicant/landowner exist, they should be disclosed as a matter of public record. External scientific/technical advisory panels should be composed only of disinterested and qualified academic, consulting, or agency scientists. The costs of panel advisory activities should be born by the applicant, and supervised by the Corps, following the model of environmental consultants preparing EIS or Biological Assessment documents.

2.5. Mitigation. The “watershed enhancement approach” to mitigation, proposed by the applicant, fails to establish any explicit or objective nexus between specific impacts (type, magnitude, location, cumulative effects) and the effects of proposed mitigation measures (road decommissioning and placement of large woody debris (LWD) in streams. The applicant and Corps must evaluate how these actions would minimize, avoid, or rectify direct, indirect, and cumulative impacts of gravel mining, including perpetual devegetation of wide, barren gravel bars, perpetual bar disturbance that prevents vegetative stabilization of sediment, perpetually excludes bank-stabilizing vegetation, and maintenance of substrate and flow conditions that favor wide, shallow, sun-exposed (heated and algal-matted) low-flow channels.

If the standard for mitigation “currency”, for example, were steelhead habitat quality or steelhead population size within affected reaches, how would the magnitude and intensity of road decommissioning effects or LWD placement on steelhead be compared with the magnitude and intensity of gravel mining impacts on channel and riparian habitats, and their indirect effects on steelhead?

Beyond the issue of nexus and proportionality of the proposed mitigation, there are the issues of efficacy and equitability. The applicant cannot count as mitigation any action that would occur regardless of whether the permit required it or not. The Corps should exercise due diligence and determine the type and location of past or ongoing grant-supported GRWC “habitat restoration” work in the Gualala River Watershed on GRI lands, consisting of LWD placement and road decommissioning. Publicly subsidized or funded river habitat restoration work, particularly activities that would occur independently of gravel mining permits, cannot be double-counted as mitigation for impacts of private commercial activities subject to Corps jurisdiction. Given that GRWC's public grant-sponsored LWD placement program and road decommissioning have been ongoing for years, there should be monitoring data to show that “restored” reaches actually benefit measurably (for example, in steelhead or aquatic habitat productivity) from these actions. The Corps (or its technical advising scientists) should review empirical sediment and fish

monitoring data from LWD and road decommissioning projects supervised by the GRWC to determine their potential efficacy as mitigation for gravel mining impacts on the Gualala River.

For example, the PN states that “it is anticipated that over the ten year period, 1,222 cy of sediment will be prevented from being delivered in to the Gualala River from 2.5 miles of decommissioned road.” Is there any empirical verification (monitoring data and modeling) for this “anticipation”, or is it an untested prediction or an assumption repeated from a grant proposal?

The direct effects of gravel mining on establishment, maturation, and persistence of riparian woodland vegetation (alder-willow groves) are obvious. Mining maintains river gravel barrens, large and persistent gaps in surrounding mature riparian vegetation. This can be verified by a site visit, or inspection of high-resolution aerial photographs of any mined reach of the Gualala River, comparing upstream and downstream areas adjacent to mining sites. At least some of these destabilized bars are subject to morphological instability (including recurrent channel avulsion, as at Valley Crossing), and recurrent removal of bar armoring (coarse lag surfaces that resist mobilization of finer sediment embedded below them). Riparian woodland canopies and root systems shade channels, and trap sediment, inducing vertical accretion of bars, and removing mobile sediment from the active channel. These basic ecological riparian functions should be mitigated in kind. (See recommendation 3.4 below).

2.6. California Coastal Commission jurisdiction. The PN is ambiguous about potential Coastal Act jurisdiction over portions of the project, stating “the project does not occur in the coastal zone, and a preliminary review by the USACE indicates that the project would not likely affect coastal zone resources”, but goes on to say that this conclusion remains subject to a final determination by the Coastal Commission. Does this imply an “effects threshold” for Commission jurisdiction, or a discretionary assertion of Commission geographic jurisdiction? In contrast with the PN statement on ESA Section 7 consultation, the PN does not state whether the Corps has actually conferred or officially consulted the Commission staff. What is the status of this review? Did the Commission determine that all parts of the project are outside the coastal zone, but remain inconclusive about its overall jurisdiction? Or is this all “preliminary” Corps evaluation? It is not informative for the Public Notice to publish only ambiguous status, and no consultation history information, about Commission jurisdiction. This should be corrected before the permit application is processed further.

2.7. Alternatives. The PN states that the project is not water-dependent (thus implying that the applicant must rebut the presumption that no practicable alternatives are available), and that the applicant has not submitted an alternatives analysis. This is not a *pro forma* or trivial matter. All impacts to the aquatic environment within Corps jurisdiction could be avoided altogether if gravel were obtained from upland quarries. The co-applicant/landowner, GRI, owns tens of thousands of acres of lands in Sonoma and Mendocino Counties, within the market area of the applicant. There are numerous quarries (active and inactive) in the region. The applicant must make a diligent effort at locating potential suitable and feasible (“practicable” by 404(b)(1) Guidelines criteria) gravel sources (either natural or processed/crushed rock) from upland locations either within GRI ownerships, Bedrock Products Inc. ownership, or on other land available for quarrying by lease agreement. See comment 3.8. The Corps cannot authorize instream gravel mining under its Section 404 CWA authority unless the applicant rebuts the presumption that practicable upland gravel production sources exist and are reasonably available.

3. RECOMMENDATIONS

I recommend that the Corps include permit conditions that implement the following general objectives to avoid, minimize, and compensate for potential significant impacts, following general precedents established in the Corps' Humboldt County gravel mining LOP model, adapted to local conditions of the Gualala River:

3.1. Require annual reach-specific or bar-specific surveys to estimate gravel replenishment rates (percent recharge since previous episode of mining) and total gravel volume for individual bars (or contiguous bar complexes) proposed for mining in the Annual Extraction Plan (AEP). Gravel extraction volumes authorized in the AEP should not exceed (or at least should not significantly exceed the risk of channel avulsion, bar destabilization, or degradation) annual local recharge rates of sand and gravel. Limitations of annual extraction volumes should not be averaged over multiple reaches (with variable recharge rates) or multiple years. The deviation between local annual and long-term, large-scale average recharge rates may be significant, and thus significant local impacts could result from the use of only average cumulative project-wide extraction volume limits. The interval of surveys should in no case be longer than the interval of mining in any one reach.

3.2. The depth of gravel mining within a bar should not exceed the average minimum water surface elevation in late summer. If gravel mining depths are allowed to "float" down with depressed hyporhoeic flow during droughts, they may create excessively deep, exposed, isolated and unstable off-channel pools (juvenile steelhead traps) and oversteepened, unstable bar conditions during subsequent years of average or above-average flows and low rates of bedload transport (deficient gravel replenishment). "Floating" gravel extraction elevations based on seasonally variable water level elevations should be prohibited.

3.3. Established woody riparian vegetation (primarily willow and alder stands) and in-stream perennial wetlands (primarily torrent sedge beds in low-flow channel banks and riffles) in all stages of development should be protected. No fill or excavation of haul roads, temporary staging or stockpiling areas, or gravel mining should be permitted in woody riparian vegetation or perennial wetland beds. "Brush removal" activities along existing haul roads should be limited to vegetation overhanging original pre-existing road edges, and "road maintenance" grading associated with gravel mining should not encroach on active channel banks or riparian vegetation. Compliance with this objective should be verified with annual pre-mining and post-mining inspections and fixed-perspective ground or aerial photography.

3.4. River reaches subject to recurrent mining that precludes and displaces natural succession of riparian woodland (alder-willow groves) and in-stream or channel bank perennial wetlands (torrent sedge beds) should be subject to full compensatory mitigation for cumulative long-term direct and indirect impacts to riparian and aquatic habitat impacts. Compensatory mitigation should be measured in linear (channel edge length) and areal (acreage) extent for in-kind or out-of-kind replacement at a minimum 1:1 replacement ratio within affected reaches. Compensatory mitigation should consist of either (a) out-of-kind compensation by enhancement and permanent protection of

functionally equivalent coniferous riparian vegetation, consisting of permanent exclusion of timber harvest within 2 mature tree height distance of the 100 yr floodplain along stream lengths proportional with those affected by mining; or (b) closure and reclamation of mining sites that fail to recharge sediment within 3 years, followed by active restoration (riparian revegetation) if natural succession fails to occur.

3.5. Require pre-mining biological surveys for fish (particularly steelhead), amphibians, reptiles, birds, plants (rare plants and overall vegetation) by qualified expert biologists in the spring/early summer months before mining episodes. The scope of biological surveys should include invasive non-native species (distribution, abundance), ecologically important indicator or keystone species, regionally uncommon or declining species, and official special-status or listed species. Use biological survey data of the current year to establish protective buffer or exclusion zones to protect all sensitive fish, wildlife, and plant resources (not just narrow localities of listed species).

3.6. Require *annual* monitoring and reporting of physical survey data, including sediment particle size; bar volumes; channel and bar morphology and configuration; location of large woody debris/debris jams; locations of exposed boulders, clay outcrops, woody roots; and fixed-perspective ground photography and aerial photography. Annual data are necessary to capture the responses of mined reaches during unpredictable events such as extreme high flows, droughts, and fluctuations in abundance or distribution of key species.

3.7. Interagency review, coordination, and adaptive management of Annual Extraction Plans and monitoring reports should be required *and actually implemented*, with one designated cooperating agency acting as lead coordinator to ensure that monitoring reports are actually received, read by knowledgeable staff, and applied to AEP adaptive modifications, despite predictable shortfalls in agency staff availability. The AEP process should broadly follow the procedures of the Corps' Humboldt County gravel mining Letter of Permission process. No gravel extraction should proceed without written verification/approval of AEPs by the lead agency, following cooperating agency comments. AEP and agency review findings should be reviewed by an external independent expert advisory panel. If agency staffing levels are insufficient to integrate review of AEPs and monitoring reports, the external, independent expert scientific review panel, funded by the applicant but supervised by a lead agency, should directly advise cooperating regulatory agencies on adaptive management of AEPs.

3.8. The Corps should prepare a rigorous alternatives analysis (*not* a mere rationalization of the applicant's preferred project, scripted by the applicant or its attorneys or consultants) complying with the CWA Section 404(b)(1) guidelines and NEPA guidance on alternatives analysis. The alternatives analysis should investigate the location, feasibility, economic viability, and long-term environmental impacts of quarries that could supply crushed rock or inland gravel deposits outside of Corps jurisdiction, with lesser overall environmental impact. Analysis of alternative quarry sites should include at least all lands owned by Gualala Redwoods Inc., within the market area (or ownership; e.g., Alder Creek quarry, Mendocino County) of Bedrock Products Inc., as well as suitable quarry lands reasonably available by willing seller purchase or long-term lease.

4. CONCLUSIONS

Along with Friends of the Gualala River, I do not oppose well-regulated, scientifically sound, and adequately mitigated gravel mining authorization for the Gualala River. I do not oppose gravel mining *per se* on the Gualala River, but I do expect that the Corps will comply with the CWA Section 404(b)(1) Guidelines in evaluating and mitigating impacts, and rigorously evaluating alternatives. In view of recent past unauthorized gravel mining, fines imposed by the Regional Water Quality Control Board for violations, lax or deficient oversight by Sonoma County PRMD, and weak environmental assessment (reliant on highly generalized county-wide standards, outdated data, and generalized conceptual models that weakly correspond to actual contemporary field conditions of the Gualala River), I conclude that it is the Corps' obligation to remedy past lapses of Gualala River gravel mining regulation. The Corps can achieve this by applying high scientific, technical standards of regulation used by the San Francisco District in other Central Coast and North Coast rivers. In addition, I urge the Corps to ensure that the applicant complies with permit conditions of any Corps authorization.

Finally, I request a copy (electronic format) of the Corps' Environmental Assessment or any FONSI/EIS determination document for the subject permit as soon as it is available for public review.

Respectfully submitted,



Peter R. Baye, Ph.D.

Attachments (.pdf):

Baye letter of September 4, 2007 to Sonoma County PRMD (general CEQA comments)
FoGR letter of October 26, 2006 to Corps and cooperating regulatory agencies
Baye letter of August 28, 2007 to Sonoma County PRMD (site-specific CEQA comments)

Copies furnished:

Friends of the Gualala River, Gualala
Coast Action Group, Point Arena
Stephan Volker, Oakland
Dick Butler, NOAA/NMFS
Steve Bargsten, North Coast Regional Water Quality Control Board

ATTACHMENT: COPY OF BAYE CEQA COMMENT LETTER TO SONOMA COUNTY PRMD



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Sonoma County Permit Resources and Management Department
Attention: Paula Stamp
2550 Ventura Avenue
Santa Rosa, 95403

September 4, 2007

SUBJECT: Gualala River gravel mining (File No. UPE04-0040, Gualala Instream), Sonoma County; Draft Negative Declaration (California Environmental Quality Act) general comments

Dear Ms. Stamp:

The following comments address procedural (CEQA) and substantive aspects of Sonoma County Permits and Resource Management Department (PRMD) proposed draft Negative Declaration for reauthorization of gravel mining on the Gualala River and amendment of the Aggregate Resources Management Plan and mining ordinance, dated August 5, 2007.

I am a professional plant ecologist specializing in the conservation, restoration, and management of coastal vegetation, rare and endangered species, and their ecosystems. I have over 27 years of professional experience in this capacity, including extensive regulatory and environmental planning experience with the U.S. Fish and Wildlife Service (Sacramento Fish and Wildlife Office) and the U.S. Army Corps of Engineers, San Francisco District Regulatory Branch. My current independent work includes preparation of CEQA/NEPA (EIR/S) documents for the California Department of Water Resources and California Coastal Conservancy, and coastal streams and tidal wetlands restoration plans for the California State Parks, U.S. Fish and Wildlife Service, and nonprofit conservation organizations.

The major general findings, conclusions, and recommendations from my critical review of the Negative Declaration are summarized below.

1. Significant impacts, inadequate mitigation. The proposed project (permit “renewal” for instream gravel mining and amendment of ARM standards on the Gualala River) may have significant impacts that are either unmitigated or inadequately mitigated by the proposed actions considered in the Negative Declaration. Moreover, after-the-fact authorization of instream gravel mining following the expiration of Resolution No 95-

0617 necessarily covers actions that did in fact cause or substantially contribute to cumulative, indirect, and direct significant adverse impacts on the Gualala River in 2005-2006. *The negative declaration's finding of "less than significant" impacts after mitigation is not supported for many ecological concerns cited in the detailed critical review of the Negative Declaration below regarding river geomorphology, fish, plants, riparian habitats, invasive species, contaminants (hydrocarbons), and water resources.*

2. Incomplete assessment of significant impacts from unauthorized recent past gravel mining that must be considered. The Negative Declaration omits disclosure, assessment, and mitigation for significant impacts of unauthorized gravel mining that occurred with knowledge and active assistance of PRMD after expiration of Resolution No. 95-0617 on April 17, 2007, within the scope of the "renewal" of the gravel mining permit application (file No. UPE04-0040). This is a fundamental flaw in the CEQA environmental baseline for assessment of impacts.

3. Flawed and outdated environmental baseline: The principal physical environmental documents on which the Negative Declaration relies for impact assessment and mitigation are mostly from 2003 (during the previous, expired permit period), and rely on 2002 data. These documents do not reflect the significant fluvial geomorphic process and form changes associated with unauthorized gravel mining (2005-2006), or drought-year (2007) gravel transport and recharge (deposition). The Negative Declaration must consider all actions within the proposed period of authorization, including previously unauthorized actions that may be authorized after-the-fact, and current environmental conditions prevalent around the time of the Negative Declaration's preparation and public or agency review.

4. Assessment of reach-specific annual sediment budget and risk of extraction rates exceeding local versus average rates of sediment recharge. The Negative Declaration assumes an "annual gravel recharge rate within the propose project reach of 15,625 to 47,500 cubic yards", based on outdated 2003 assessment conditions that rely on 2002 or earlier estimated data. The upper range of recharge rates is about three times the lower range, and there are twelve very different gravel bar extraction locations on the Wheatfield and South Forks, each with different local rates of recharge. The Negative Declaration fails to consider the risk or impacts of over-extraction (extraction exceeding site-specific, year-specific recharge rates) related to annual variability or site-specific variability of gravel recharge rates. The Negative Declaration fails to discuss or assess the significant net reduction in bar size and height (and associated changes in high flow conditions and low-flow channel configuration) in 2007.

5. Inadequate site-specific assessment of mitigation. The Negative Declaration assesses the efficacy of proposed mitigation such as "horseshoe method of mining" only in general and prospective terms, and fails to apply actual data from past episodes of its application, such as at Valley Crossing, to assessment of its effectiveness in minimizing impacts to less-than-significant levels. The reduction of the Valley Crossing bar mining site to low gravel flats is not consistent with the Negative Declaration's uncritically optimistic reliance on at least one major proposed mitigation measure. Mitigation measures proposed, despite uneven levels of technical detail in methodology, are

generally unenforceable or unworkable (ineffective) in terms of basic reporting, assessment, and linkage to agency corrective actions.

6. Significant cumulative riparian habitat impacts are not adequately assessed. The Negative Declaration fails to assess background changes in the abundance, distribution, and change in quality (maturity, height, density, composition) of riparian vegetation of mid-channel bars, point bars, and floodplains of the reaches upstream of gravel mining sites, and their actual or potential interactions (cumulative effects) on sediment transport, trapping, stabilization, and bar recharge.

8. Alternative sites. The Negative Declaration fails to adequately evaluate alternate mining sites or site feasibility evaluation criteria to minimize impacts.

9. Recommendations. The subject permit action may cause potential significant cumulative, indirect, and direct impacts that are not reduced to less-than-significant levels by proposed mitigation. The County must therefore either (a) prepare an EIR for the project, or (b) correct substantial omissions and deficiencies in impact assessment, mitigation, and alternatives identified by comments, and recirculate an Initial Study and Negative Declaration with appropriate modifications to ensure that impacts will be less than significant.

In addition, the County should focus its efforts on bringing assessment of baseline conditions up to date, and consistent with the whole period of the permit action (including after-the-fact authorization) and all state and federal permits.

1. CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) AND RELATED REGULATORY ISSUES.

1.1. Scope of analysis and CEQA environmental baseline must include previously unauthorized gravel mining included in after-the-fact authorization. Gravel mining on the Gualala River continued in 2005 and 2006 with the knowledge and active assistance of PRMD after the previous PRMD permit expired, and without authorization from the U.S. Army Corps of Engineers or National Marine Fisheries Service. The impacts of unauthorized gravel mining must be considered within the scope of analysis of the current negative declaration if the County and other regulatory agencies with which it coordinates intend to use this CEQA document for after-the-fact authorization of 2005-2006 gravel mining. Otherwise, including the impacts of unauthorized gravel mining within the “existing conditions” environmental baseline (at the time of Negative Declaration notice) would impermissibly merge them with the environmental baseline. This would result in a deliberate omission and understatement of significant direct, indirect, and cumulative impacts of gravel mining, and would fail to comply with CEQA and parallel federal environmental laws. Thus, the County must consider impacts of unauthorized gravel mining impacts during the interim “grace period” of 2005-2006. To my knowledge, the Gualala River is the only North Coast California river where unauthorized commercial gravel mining operations occur.

The draft Negative Declaration fails to analyze the actual past impacts of unauthorized gravel mining Valley Crossing (versus predicted future impacts) during the period of 2006-2007. The

draft Negative Declaration erroneously concludes that reauthorization of gravel mining, with mitigation, would result in no significant impacts.

2.0 SPECIFIC COMMENTS ON NEGATIVE DECLARATION TEXT

Page 7 – Aesthetics. Page 7 states,

There are no locations where the public can view the project area as part of a scenic vista...At the confluence of the Wheatfield and south Forks, the river may be viewed by motorists driving over the Twin Bridge. However, views of the river from the bridges are not considered especially high quality due to the speed at which the cars are traveling...the final reclamation plan will involve revegetation of the site which will eliminate visual impacts.

This is invalid and unsound reasoning because:

- The public can view the project area from the bridge by walking or driving, and driving speeds below 35 mph do not preclude the scenic vista viewing;
- Valley Crossing is a long-established, grandfathered recreational spot (swimming, fishing, hiking, kayaking, dog-walking) used especially by Sea Ranch visitors, either from Hot Spot or local access points.
- The “final reclamation plan” cannot possibly have bearing on esthetic impacts that occur within the permit period.
- Persistent esthetic impacts occur from failure to recharge sufficient gravel, and from channel avulsion (switching position from perennial flow along riparian banks, to cross-bar summer-dry thalweg).

Page 10 – Air quality mitigation measures and incidental significant impacts

Page 10 states that mitigation measures for dust shall include “chemical soil stabilizers or dust suppressants or water all active unpaved vehicle circulation areas daily”. The gravel operator and landowner have applied bittern salts (commercial name “Dust-Off”, hygroscopic and deliquescent potassium and magnesium chloride, sulfate in saturated solution), a by-product of solar salt production in San Francisco Bay, to the Valley Crossing haul road in the past. Bittern is highly toxic to aquatic organisms (fish, invertebrates) in concentrated form, and requires dilution by at least 100:1 for discharge into even naturally brackish or saline estuarine waters (20 ppt or higher) by the State Water Quality Control Board. Channel pools with native fish, including federally listed steelhead, should not be exposed to risk of “first flush” runoff of road bittern into channel pools in fall, before significant flows occur. Bittern applications for dust mitigation may result in significant adverse impacts to steelhead and other native aquatic organisms during fall rains.

Page 10 states that mitigation measures for dust shall include “hydroseed...”. Past seeding with invasive non-native ryegrasses (*Lolium perenne*, *L. multiflorum*) is inappropriate for gravel bars or riparian woodland habitats because they can and do persist and spread, competing with re-establishment of native riparian vegetation. This could be a significant impact at some locations. Only sterile wheat, weed-free mulches or native woodland materials, or native revegetation should be used to vegetatively stabilize dust sources.

Reptiles, amphibians - The Negative Declaration fails to disclose that channel pools within the project area *do in fact* support juvenile and mature northwest pond turtles (*Clemmys marmorata marmorata*; not just their habitats, as stated) and backwater riparian pools (perennial and seasonal ones) generally support populations of foothill yellow-legged frogs (*Rana boylei*), both species of concern because of statewide declines. Frog-bearing pools were affected by side-cast spoil deposition associated with reconstruction and expansion of the riparian haul road to Bar 62 in 2006, and a frog-bearing pool occurs at the wet crossing of the haul road end to the river. Proposed mitigation has been inadequate to protect these habitats and local populations against significant indirect and direct impacts of gravel mining.

The Negative Declaration fails to consider potential impacts to Pacific Giant Salamanders.

Degradation of channel pool habitats due to gravel mining and accessory activities (haul road use, side-cast) may indirectly affect the viability of native amphibian populations by establishing conditions in which non-native bullfrogs (*Rana catesbiana*; predators and competitors of native frogs) have a competitive advantage. Bullfrog detection and control measures should be included in pools affected by gravel mining and accessory operations. Bullfrogs are present on the Gualala River, and their numbers become significant in years of reduced peak winter flows.

Noise from gravel mining or processing operations, particularly at dusk, is likely to interfere with prey detection or predatory detection/avoidance of federally listed northern spotted owls (*Strix occidentalis*) that may occur within the effects area of the project, either individual vagrants or established home ranges. Canopy gaps created by tree canopy removal in riparian forest due to excessive “brushing” (haul road expansion, reconstruction, side-casting) degrade habitat quality for spotted owls in otherwise dark, dense riparian floodplain mixed redwood forest stands, and facilitate habitat for their predators and competitors, such as great horned owls and barred owls. The negative declaration failed to consider or mitigate potentially significant cumulative and indirect impacts to northern spotted owls in either the short-term or long-term.

I believe the Negative Declaration misrepresents the findings of California Department of Fish and Game staff Stacy Martinelli regarding marbled murrelets (*Brachyramphus marmoratus*), or provides outdated and incorrect information. My understanding is that Ms. Martinelli did determine that the riparian forests and channel along the South Fork were indeed part of a dispersal corridor for marbled murrelets that she verified by field surveys within the last few years. PRMD should reinitiate consultation with CDFG to determine (a) whether marbled murrelets do use or have used the river corridor within the project area for dispersal, and (b) whether direct, indirect, or cumulative impacts of gravel mining operations may adversely affect marbled murrelets, including haul road expansion or reconstruction.

p. 13 – Plants. The Negative Declaration relies on unreasonably old and obsolete botanical surveys from 1999 (data prior to 1999), prior to some extreme flooding events that serve as major mechanisms for plant dispersal and colonization. Significant population changes to sensitive plant species should be expected to occur in riparian vegetation within nearly 10 years. The plant survey report cited does not provide meaningful or scientific support for the Negative Declaration’s contemporary environmental baseline.

The negative declaration must consider cumulative effects on plants that are regionally uncommon or rare, or in regional decline, and not just state-listed species, to determine whether potentially significant impacts may occur. Swamp harebell (*Campanula californica*) is not the only plant species within the project area that may suffer significant impacts. A review of the Sonoma County flora indicates that many mycotrophic (fungal-dependent) herbs, orchids, and lily family plants, and important disjunct populations of plant species (plants far outside their main range) are uncommon to rare in Sonoma County and Mendocino County, and may occur in riparian terrace or floodplain forests.

Site-specific, contemporary plant surveys and vegetation surveys are needed to assess potential significant impacts to plants (including current localities of swamp harebell and other state-rare or regionally rare plants) and vegetation, and to develop meaningful mitigation measures to reduce them to less-than-significant levels. These are currently lacking.

p. 14 – Fish

The negative declaration does not adequately assess the indirect effects between channel or bar destabilization (p. 16-17) and habitat or population impacts on steelhead. I incorporate by reference my previous comments on this negative declaration dated August 28, 2007, which described the significant loss of shaded, previously stable steelhead channel habitat adjacent to the failed, overexploited, breached bar (with putative “mitigation” by horseshoe mining, but with insufficient head-of-bar height and flow restriction) at Valley Crossing.

Similarly, the Negative Declaration fails to consider the indirect impact of excessive gravel mining in any given year (intensive short-term sediment deficits caused by imbalance between current-year, site-specific extraction rates and recharge rates) on the potential for channel avulsion (switching channel configuration from thalweg to degraded bar troughs) to result in persistent loss of high-quality steelhead channel habitat. There is no quantification of the potential length of channel habitat at risk of avulsion and consequent habitat degradation. In fact, the discussion of “fish stranding” on p. 14 fails to consider the type of avulsion event (see p. 17) that did in fact happen at Valley Crossing in 2006 and persisted in 2007, where juvenile (young of year) steelhead were present in pools rapidly isolated by warm riffles and disappeared in July 2007. The negative declaration also failed entirely to discuss potential significant cumulative impacts between mining-related channel habitat declines, drought, and ongoing or expanded agricultural and timber diversion of river water (including below-bed flows) on the Wheatfield Fork.

The discussion of “fish stranding” impacts (p. 14) are not supported by the Halligan (2003) assessments or O’Connor (2003) assessments, which in any case do not address contemporary baseline impacts for this CEQA document. The “fish stranding” impacts and mitigation fail to consider impacts of channel avulsion and changes of channel pool conditions associated with threshold changes in bar and channel form or processes, or in interaction with variables such as drought or withdrawal/diversion of hyporhoeic (below-bed gravel flows) upstream that may cause drops in pool levels.

The negative declaration fails to provide a contemporary assessment of steelhead habitat conditions and population levels adjacent to and downstream of proposed extraction sites. It also has failed to identify or evaluate recent trends in steelhead populations in stream reaches near

mining sites for purposes of cumulative impact assessment. It relies primarily instead on obsolete reports and data from the previous permit period. *No 2006 or 2007 data or technical assessments are cited in the body of the Negative Declaration.*

The Negative Declaration fails to discuss *indirect* impacts of mining sites on stream temperatures (p. 19). The permanent removal of vegetation over gravel flats that occupy mining sites may cause significant heating of subsurface flows that affect stream and pool reaches downstream of mining sites. No temperature data on subsurface gravel flows from upstream or downstream of mining sites were considered to evaluate whether the thermal gaps in riparian corridors may cause significant (threshold for steelhead physiological stress) warming of subsurface flows that affect steelhead-inhabited pools and channels downstream. Mitigation measure BIO-13, which requires “minimal or no net *loss* of riparian vegetation” in the context of fish habitat is *utterly meaningless* in real time, where over 33 acres of riparian vegetation will be prevented from forming or regenerating! The previously permitted conditions have *already eradicated* this resource, and perpetuate its absence. The *long-term cumulative impact on riparian vegetation*, not the *net short-term impact*, is the significant ecological issue.

p. 14 – Hydrocarbon contamination. The Negative declaration fails to disclose past water quality violations associated with the gravel mining operation, including operation and fueling of portable diesel pumps on the dry gravel bed in 2005 across from the processing plant, where water pumping occurs. Fuel spills or leaks from pumps or vehicles (trucks, equipment) may cause local but significant hydrocarbon contamination during the low-flow period between operations and early fall rains.

p. 20, 22 – Riparian vegetation. The discussion of riparian vegetation is not credible, because *all of the proposed mitigation conditions were violated* during the unauthorized “grace period” (post-permit) haul road reconstruction and expansion. See attached letter from Friends of the Gualala River dated October 28, 2006. The county staff person overseeing unauthorized gravel mining and haul road “maintenance” described the unmitigated significant tree removal, debris side-casting over channel bank edges, wetland cut and fill, road expansion, and sowing of invasive non-native grass seed as “very professional” work. The county has allowed violation of all proposed mitigation already, and has proposed no corrective measures for past non-compliance within the “permit renewal” period since the last permit expired. The County has an outstanding riparian impact mitigation debt to repay from the “grace period”, and this must be enforced in a mitigated CEQA document sufficient for past and future significant impacts within the scope of the permit period. The Negative Declaration’s conclusion (p. 22) that only minimal impacts to riparian vegetation would occur is wholly incorrect.

Significant net growth and expansion of riparian vegetation (torrent sedge, alder, willow, blackberry, horsetail) has occurred since 2002 in most reaches of the Gualala River Wheatfield Fork and South Fork except mined sites. These expanded riparian woodland and scrub stands, and torrent sedge-lined low-flow channels, have apparently increased the river’s storage capacity for sediment (ability to remove sediment from thalweg/low flow channel bed and bank profile, long residence times of deposited, stabilized sediment within perennial/woody vegetation). The significant effect of gravel mining on the rapid acceleration of natural riparian successional processes, evident in most river reaches, is ignored in the context of cumulative impacts.

Mitigation measure BIO-13, which requires “minimal or no net *loss* of riparian vegetation” in the context of fish habitat is *utterly meaningless* in real time, where over 33 acres of riparian vegetation will be prevented from forming or regenerating! The previously permitted conditions have *already eradicated* this resource, and perpetuate its absence. The *long-term cumulative impact on riparian vegetation*, not the *net short-term impact*, is the significant ecological issue.

Note that the negative declaration describes the fragmentation of riparian vegetation by 12 mining sites within a 152 acre permit area as a “minimal effect ...since these areas are already typically devoid, or contain only isolated patches, of riparian vegetation”. This is viciously misleading, because it is exactly the past permitting of these gravel mining sites that maintained them in this condition, and it is precisely the proposed mining authorization that would perpetuate significant degradation of riparian vegetation succession, and preclude natural regeneration of riparian scrub, woodland, and forest.

The negative declaration appears to ignore the fish biologist’s Halligan (2003) recommendation for “delineation and quantification of riparian vegetation ...to the monitoring program....once every three or four years”. Finally, the Negative Declaration fails to quantify significant persistent and ongoing impacts of gravel mining to *regeneration and maturation of riparian woodland within mined bars*. The Negative declaration fails to disclose that these barrens exist only because of ongoing mining activities, and the 12 extensive and erratic gravel barrens of mining sites cause significant habitat fragmentation and thermal gaps in otherwise relatively continuous riparian corridors.

p. 20-21 – Unenforceable and ineffective, vague monitoring. Mitigation measure BIO-17 is worded,

...the applicant shall be responsible for hiring qualified professionals to collect annual monitoring data...[which]...shall be submitted to PRMD and other [unspecified] regulatory agencies”....Upon request by PRMD, the operator shall hire a fluvial geomorphologist to analyze and report on ...changes observed at each cross section.

From a scientific and permit enforcement perspective, this mitigation language is deeply flawed. It identifies “responsibility” (does not require the action itself) for hiring “qualified” professionals to collect *annual* data that are only *optionally* analyzed and reported, at unknown and discretionary frequency, and without reference to professional standards themselves (what makes a professional “qualified”), scientific peer-review for quality control, or disclosure of conflict of interest. What is the point of making an applicant responsible for paying for collecting data that are not subsequently analyzed or reported? What is the point of having qualified professionals collect data if the data are not used to re-evaluate permit condition compliance or mitigation efficacy? The technical details of methods on page 21 are irrelevant if the basic relationship between sampling design, data collection, data analysis, data interpretation, scientific peer review, quality control/assurance, and regulatory review are not make specific and explicit. All regulatory agencies monitoring requirements should be explicit and coordinated like the Humboldt County gravel mining Letter of Permission (explicit multi-agency review process is included in permit conditions).

The potential abuse of mitigation BIO-17 is obvious. Any inconvenient data (say, for example, a drought year fails to recharge a mined-out bar) can be omitted from analysis and reporting at the

discretion of county staff, perhaps under pressure from the landowner. This has in fact already occurred during the “grace period” of permit expiration and continued gravel mining. The fact that the Negative Declaration fails to cite any current year or 2006 data, and cites only reports from 1999 to 2003 highlights this fatal flaw. This fatal flaw makes all mitigation measures for significant impacts useless if they depend on adaptive management and monitoring.

p. 22. Invasive Species. The Negative Declaration fails to identify past or ongoing invasion of pertinent invasive species within and around established gravel mining areas, particularly in riparian zones, such as jubata grass (*Cortaderia jubata*), Himalayan blackberry (*Rubus armeniacus*; syn. *R. discolor*). In September, 2007, I detected a pioneer plant of Mediterranean stinkweed, *Dittrichia graveolens*, in the dry gravel bed of the Wheatfield Fork upstream mining site (Bar 62). This is the first report in western Sonoma County, unfortunately. This species has only recently established in Sonoma County, and gravel mining sites are ideal habitat for extremely rapid proliferation and effective dispersal. Its seed sources are now established along Highway 101 to at least Windsor, and it may be readily dispersed by vehicles visiting aggregate transfer sites, such as Port Sonoma, where it is a severe infestation.

The assessment and mitigation for invasive species proposed (Mitigation BIO-18) is not consistent with basic standards and protocols for invasive plant species management. The agriculture commission is not the appropriate scientific authority for invasive species risks and mitigation in riparian habitats of western Sonoma County. The mitigation is vague and procedural, and insufficient to reduce potential significant impacts of gravel mining on invasive species to minimal levels.

p. 23 – Wetlands. The Negative Declaration is flatly incorrect in its statement that the mining areas do not include wetlands subject to Corps of Engineers jurisdiction, and it is profoundly misleading to use only Corps wetland jurisdictional (legal) criteria to assess potential impacts to actual wetland habitat. The Corps regulatory process is specific to earthen fill authorization, not wetland management or regulation in general. Actual marsh (*bona fide* wetlands) occurs along and within channel beds (torrent sedge marsh, *Carex nudata*, in entisols or non-soil sediment), as well as vegetated wetlands patches composed of cattail, rush, other sedges, broadleaf marsh plants, horsetails, willow thickets, all with wetland hydrology. True wetlands were indeed bladed and buried by the 2006 haul road grading activities, including side-casting. These impacts were unreported and unmitigated by PRMD. All impacts, including truck and equipment access impacts, to all wetlands (not just Section 404 Clean Water Act wetlands) within the project area must be assessed.

p. 32 – Groundwater (below bed river water) impacts. The assessment of water withdrawal impacts of gravel mining is basically flawed. The significance of potential impacts inheres in the effect on below-bed (hyporhoeic) water level depression and flow rates caused by local well or surface pumping during the low-flow summer and fall conditions, which are naturally variable among years. The Negative Declaration does not make a coherent or credible argument that “about 171,430 gallons...for 40,000 cubic yards of washed rock” would not have a significant adverse impact on pool or channel levels in the effects area of water withdrawal during summer-fall low flow conditions. The vague and unenforceable monitoring prescription on p. 32 refer to no critical water level thresholds, reporting procedures, review procedures, responsibilities, substantive actions, or authorities of PRMD staff or delegated public agencies. It is thus inadequate to prevent significant potential impacts of water withdrawal on steelhead habitat and

channel pools. Average gravel extraction rates and water use rates are not sufficient to predict likely impacts during years of below-average rainfall.

3.0. Conclusions and recommendations. Based on the detailed critical review of the Negative Declaration, and my own observations and professional judgment, I conclude that the subject permit action may cause potential significant cumulative, indirect, and direct impacts that are not reduced to less-than-significant levels by proposed mitigation. The County must therefore either (a) prepare an EIR for the project, or (b) correct substantial omissions and deficiencies in impact assessment, mitigation, and alternatives identified by comments, and recirculate an Initial Study and Negative Declaration with appropriate modifications to ensure that impacts will be less than significant.

In addition, the County should focus its efforts on bringing assessment of baseline conditions up to date, and consistent with the whole period of the permit action (including after-the-fact authorization) and all state and federal permits. The County should strive to ensure adequate, objective interdisciplinary expert review of assessments and mitigation by independent academic and government experts, and not rely unduly on scientific consultants paid to advocate the interests of their private clients/applicants.

Regulation of gravel mining on the Gualala River must not proceed in a piecemeal, agency-by-agency fashion. It should be coordinated to protect the overall public interest, and not merely to expedite permit issuance based on local economic demand for relatively inexpensive local aggregate supply. To regain public confidence, the County must correct its history of undue deference to local Gualala River gravel mining interests, indicated by its record of agency staff actually expediting unauthorized gravel mining. Public confidence would be merited by rigorous scientific review and mitigation of impacts, rigorous and enforceable permit conditions, vigilant and rational monitoring, and prompt implementation of corrective measures or adaptive management.

Respectfully submitted,



Peter R. Baye, Ph.D.

Copies furnished:

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Richard Butler, National Marine Fisheries Service, Santa Rosa
Regional Water Quality Control Board, Santa Rosa
Prof. Matt Kondolf, University of California, Berkeley
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Sonoma County Permit Resources and Management Department
Attention: Paula Stamp
2550 Ventura Avenue
Santa Rosa, 95403

August 28, 2007

SUBJECT: Gualala River gravel mining (File No. UPE04-0040, Gualala Instream), Sonoma County; Draft Negative Declaration (California Environmental Quality Act) comments regarding significant impacts of 2005 unauthorized gravel mining to channel stability and fish habitat quality at the confluence of the South Fork and Wheatfield Fork, Gualala River.

Dear Ms. Stamp:

The following comments focus on one issue within the scope of the Sonoma County Permit Resources and Management Department (PRMD) proposed draft Negative Declaration for reauthorization of gravel mining on the Gualala River.

I am a professional plant ecologist specializing in the conservation, restoration, and management of coastal vegetation, rare and endangered species, and their ecosystems. I have over 27 years of professional experience in this capacity, including extensive regulatory and environmental planning experience with the U.S. Fish and Wildlife Service (Sacramento Fish and Wildlife Office) and the U.S. Army Corps of Engineers, San Francisco District Regulatory Branch. My current independent work includes preparation of CEQA/NEPA (EIR/S) documents for the California Department of Water Resources and California Coastal Conservancy, and coastal streams and tidal wetlands restoration plans for the California State Parks, U.S. Fish and Wildlife Service, and nonprofit conservation organizations.

Gravel mining on the Gualala River continued in 2005 and 2006 with the knowledge and active assistance of PRMD after the previous PRMD permit expired, and without authorization from the U.S. Army Corps of Engineers or National Marine Fisheries Service. The impacts of unauthorized gravel mining must be considered within the scope of analysis of the current negative declaration if the County and other regulatory agencies with which it coordinates intend to use this CEQA document for after-the-fact authorization of 2005-2006 gravel mining. Otherwise, including the impacts of unauthorized gravel mining within the “existing conditions” environmental baseline (at the time of Negative Declaration notice) would impermissibly merge

them with the environmental baseline. This would result in a deliberate omission and understatement of significant direct, indirect, and cumulative impacts of gravel mining, and would fail to comply with CEQA and parallel federal environmental laws. Thus, the County must consider impacts of unauthorized gravel mining impacts during the interim “grace period” of 2005-2006. To my knowledge, the Gualala River is the only North Coast California river where unauthorized commercial gravel mining operations occur.

The focus of this set of comments is on the significant impacts of 2005 gravel mining on the stability of the terminal gravel/sand bar and channel configuration of the South Fork, Gualala River, above the confluence with the Wheatfield Fork, and its indirect significant impacts on habitat quality for federally listed steelhead (*Oncorhynchus mykiss*) and other aquatic organisms that rely on the cover provided by steep, root-bound vegetated channel banks beneath riparian woodland. I will submit additional comments on other aspects of the Negative Declaration separately.

The draft Negative Declaration fails to analyze the actual past impacts of unauthorized gravel mining Valley Crossing (versus predicted future impacts) during the period of 2006-2007. The draft Negative Declaration erroneously concludes that reauthorization of gravel mining, with mitigation, would result in no significant impacts. In rebuttal, I am providing **time-series photographic documentation of the apparently unprecedented breaching and bisecting of the degraded, exhausted terminal gravel/sand bar at the Valley Crossing confluence with the Wheatfield Fork, following unauthorized 2005 gravel mining. This bar failed to recharge sediment and regenerate its height and form in 2006. The failure of bar regeneration during high flood flows in January 2006 caused a persistent switch in channel configuration during only moderate high flows in March-April 2006.** The direct and indirect significant impacts of this event are not assessed or mitigated in the Negative Declaration, which focuses instead on general speculative assessments inconsistent with site-specific, identifiable, and pertinent actual consequences of gravel mining.

The persistent switch in channel configuration and bar form around the Valley Crossing gravel mining site resulted in abandonment of a long-stable shaded perennial channel segment (between the Annapolis Road bridge and the point of confluence, adjacent to the mined bar) formerly associated with maturing alder-willow riparian woodland and vegetated outer bend banks. The (unauthorized) **mined bar breached and allowed the channel thalweg to occupy a wide, shallow summer-dry (hyporhoetic flow), warm solar reach of the South Fork channel across the center of the bar.** I have personally observed first and second-year steelhead in the channel reach from 2002 to 2005 in spring, summer, and winter months, when it was in its recurrent to stable previous configuration (from at least 1984 and later) and was associated with dense shaded and root-bound banks. In its current post-mining condition, the channel bed in this reach supports mostly Gualala roach, and supplies likely stranding (mortality; attractive nuisance) habitat for steelhead in its few small pools. The relict abandoned channel beneath the riparian woodland canopy has accreted with coarse sediment (mostly infilled with sand and gravel), and is segmented into discrete, disconnected pools.

The Negative Declaration fails to assess the cumulative impact of gravel mining in the context of geomorphically significant expansion, growth and sediment trapping of riparian woodland on the Gualala River since 2003. The failure of bar recharge after mining, even during high flow events of January 2006, is probably related to significant expansion and growth of riparian woodland on

floodplains and mid-channel bars upstream of this mined site since 2003. Expanded riparian woodland and traps and stabilizes significant volumes of gravel, sand, and silt upstream on the South Fork, and enhances aquatic and riparian habitat. The Negative Declaration relies principally on outdated environmental supporting documentation and interpretations (O'Connor 2003; data up to 2002), prepared during the previous period of PRMD authorization, prior to its expiration. No post-2005 supporting documentation for the Negative Declaration addresses the significant cumulative impact of gravel extraction during a period of riparian woodland regeneration, and its implications for bar regeneration and integrity of bar and channel form. I have direct, personal knowledge of Valley Crossing and reaches upstream, and I can attest that channel incision, channel continuity, vegetated bar accretion, and riparian woodland growth have all progressed dramatically since 2003.

The Negative Declaration provides an erroneous generalized impact assessment of gravel mining on channel stability and sediment size, riparian and fish (steelhead) habitat (pp. 14-20) that is inconsistent with the actual results of mining at Valley Crossing during and following the 2005-2007 period of unauthorized mining. The Negative Declaration arbitrarily relies on (cites only) 2003 environmental documents that do not account for the actual impacts from this "grace period" of mining documented in the attachment below. No historic time-series analysis of channel and bar changes are cited in the Negative Declaration to assess this impact or the failure of NMFS-endorsed "horseshoe" extraction methods (p. 17) in this specific setting.

The progressive increase in channel bar riparian vegetation in all reaches of the Gualala River except the affected mining sites also indicates that mining is interfering or precluding natural regeneration of riparian woodland along channel banks of the Wheatfield and South Forks, and is maintaining solar-heated barren gravel flats at their expense. This significant impact is incorrectly assessed and mitigated (pp. 19-20) in the negative declaration.

The sequence of gravel bar mining, bar exhaustion, channel capture and switching at the Valley Crossing location since 2005 was utterly ignored in the Negative Declaration. This event has resulted in significant and probably persistent adverse impacts to steelhead, channel habitat, and channel stability at this location. The sequence of changes here is documented in the following attachment.

Respectfully submitted,



Peter R. Baye, Ph.D.

Copies furnished:

Peter Straub, Regulatory Branch, U.S. Army Corps of Engineers, San Francisco District
Richard Butler, National Marine Fisheries Service, Santa Rosa
Regional Water Quality Control Board, Santa Rosa
Prof. Matt Kondolf, University of California, Berkeley
Stuart Siegel, Ph.D., Wetlands and Water Resources, San Rafael
Friends of the Gualala River, Gualala (and interested parties)

**ATTACHMENT: Gualala River Valley Crossing,
South Fork Gualala River – Wheatfield Fork confluence, 2005-2007**



08/15/07. View upstream at confluence with Wheatfield Fork; dry bed of South Fork thalweg above confluence, bisecting low bar flats, approximately 1 m above low-flow (drought year) water surface elevation of Wheatfield Fork. Note presence of white sun-bleached algal mat and absence of vascular vegetation on dry channel bed, *Chenopodium* and *Melilotus* (vascular annual vegetation) on gravel bar emergent in spring.



7/13/07. View downstream at confluence with Wheatfield Fork; diminished summer low flows descend below emerging bed of South Fork channel above confluence; shallow (<20 cm), warm (>24°C) surface flows support few Gualala Roach.



06/05/07. View downstream at confluence with Wheatfield Fork; bar bisected by channel; pre-2005 South Fork relict riparian woodland-edged channel remains infilled by gravel, reduced to off-channel pool segments below riparian woodland canopy. Channel condition: shallow, warm run, riffle at confluence. Gualala roach and juvenile steelhead present in channel (personal observation).



06/03/07. View upstream at confluence with Wheatfield Fork. Wheatfield temperature 17 °C, thalweg > 50 cm deep at confluence. South Fork descends into gravel at thalweg in sloping bar edge. Pre-2005 South Fork relict riparian woodland-edged channel is infilled by sand and gravel, reduced to off-channel pool segments below riparian woodland and scrub canopy.



04/22/07. View downstream at confluence with Wheatfield Fork; recent flows cut a small scarp in gravel bar channel bank; note turbidity pulse. Pre-2005 South Fork riparian channel is actively infilled by silty sand (brown-gray) and gravel (gray) during this moderate discharge event, reducing it to off-channel pool segments choked with fine sediment below riparian woodland canopy.



03/27/07. View upstream at confluence with Wheatfield Fork. South Fork channel bisects gravel bar flats; slight recent meandering to east is indicated by recent low (<0.5 m) scarp cut in bar at confluence with Wheatfield Fork. Pre-2005 South Fork riparian woodland-edged relict channel is infilled by sand and gravel, reducing it to off-channel pool segments below riparian woodland canopy. South Fork channel at confluence is reduced to shallow riffle.



03/01/07. View downstream at confluence with Wheatfield Fork. Shallow, wide south Fork channel bisects gravel bar flats; note braided pattern in gravel bar flats across former channel position at east (view right) end of bar, formed during high flows. Mouth at confluence with Wheatfield Fork curves (deflected by Wheatfield Fork gravel deposition) slightly west compared with relatively rectilinear January 2007 channel configuration established under peak winter flows. Pre-2005 South Fork riparian woodland-edged relict channel is infilled by sand and gravel, reducing it to off-channel pool segments below riparian woodland canopy.



1/06/07. View downstream at confluence with Wheatfield Fork; recently deposited sand and gravel surface of degraded bar flats, with South Fork channel again bisecting the wide, low terminal bar. Channel bed is less than 1 m below elevation of adjacent bar flats, with gently sloping sand/gravel gradient replacing pre-2005 slipface and scarp profile of former channel bank.



8/8/06. View upstream at confluence with Wheatfield Fork. Pre-2005 South Fork riparian woodland-edged relict channel is infilled by sand and gravel, reducing it to off-channel pool segments below riparian woodland canopy. Thalweg is reduced to emergent, dry gravel bed with hyporhoeic flows. Note low (<0.5 m) elevation difference between late summer low-flow water surface elevation of Wheatfield Fork and adjacent South Fork gravel flats near thalweg confluence, increasing to only approximately 1.0 m at the position of the aggraded, infilled relict channel position along riparian woodland edge.



a

(4/14/06)



b

(4/14/06)



c

4/14/06 **BAR BREACHING, CHANNEL SWITCHING EVENT.** Views downstream (a, b) and upstream (c) at confluence with Wheatfield Fork following recent bar-flooding discharge that bisected the low, degraded bar flats. Note recent spreading of branched high flow distributary channels across bar flats, actively depositing sand and gravel into the aggraded, infilled, segmented former channel (thalweg) along the riparian woodland edge (b), as mined, depleted gravel bar loses form. Note low topographic relief of diminished South Fork bar at confluence, failure of gravel/sand recharge within mined area during moderate high spring flows.



03/17/06. **INCIPIENT CHANNEL SWITCHING.** View upstream from Wheatfield Fork confluence. The terminal South Fork bar degrades along the bend, forming a set of branched channels across the east end of the 2005 mining area, which has failed to regenerate bar height and form during and following high winter flows. Note the widened, stepped channel profile (multiple scarps; compare 2/20/06)



02/20/06. **INCIPIENT CHANNEL SWITCHING, INFILLING OF THALWEG.**

View upstream from Wheatfield Fork confluence, showing the last remaining post-mining position of the South Fork thalweg incised as a perennial channel beneath the riparian woodland canopy (alder-willow) at the east end of the degraded South Fork terminal bar flats. Note the multiple slipface-edged lobes of gravel (sediment fans dissected by multiple high-flow branched shallow channels prograding towards the channel

edge; incipient infilling of thalweg occurs while the top of the low, flat, degraded gravel bar conveys and dissipates high flows rather than confine them mostly within the previously channelized profile. Note low turbidity (lack of recent rainfall)



01/02/06. INCIPIENT CHANNEL SWITCHING. View downstream from Wheatfield Fork confluence following recent high flows (note high turbidity). Terminal South Fork bar is degraded to low sand/gravel flats within and above the 2005 mining pit, where sediment recharge is failing. Thalweg remains at traditional eastern edge of terminal South Fork bar, but the degraded bar is developing branched channels, gravel/sand lobes and fans across the 2005 mining pit, dissipating high flows, and initiating progradation of the bar edge across the thalweg.



a (12/31/05)



b



c

12/31/05. View downstream at confluence with Wheatfield Fork. Turbid discharge over submerged bar (a). New Years storm flood flows caused significant sediment accretion (silt, sand) in vegetated riparian floodplain and channel bars of the Wheatfield Fork (b) and South Fork (c) on bank opposite the confluence.



a

11/15/05



b



11/15/05. View upstream from Wheatfield Fork confluence, showing degraded post-mining condition of South Fork terminal bar. Note flattened, sloping, low bar crest elevation (less than 0.5 m above water surface in late fall low flow condition) along Wheatfield Fork and bank of South Fork channel. Note also the graded, mined bar edges (c; pushed into willows along edge of bar, towards South Fork thalweg; excavated area extends to within approximately 4-5 m from edge of South Fork channel at confluence point!) establishing topography for an efficient flow path during high flows that overtopped the terminal South Fork bar in January-April 2006. Note tire tracks persisting on gravel flats; no flows have yet overtopped the degraded bar.



10/24/05. View downstream at confluence with Wheatfield Fork; apparent active or very recent mining (compare with 11/15; not final post-mining condition). Large scraped pit is established at downstream end of terminal bar, within approximately 5 meters of the South Fork channel bank, and mining or grading operations are apparently not complete (see 11/15/06 photo). Extraction is cumulative with previous mining here.



07/07/05. Views upstream on South Fork (a) and Wheatfield Fork (b), showing pre-mining 2005 condition of terminal South Fork bar. Note perennial channel of South Fork within willow-alder riparian woodland or beneath its canopy. Note bar crest elevation relative to low-flow channel water surface elevation.



Google Earth aerial photo of South Fork at confluence with Wheatfield Fork (accessed 08/27/07; photo circa 2003), showing traditional, long-stable channel and bar configuration; perennial low-flow channel bend is located within or contiguous with alder-willow riparian woodland at eastern end of bar. Note deltaic gravel lobe constricting channel at confluence, mouth of South Fork low flow channel.

Photos incorporated by reference: North Coast Watershed Assessment Program (2003), Gualala River Watershed Assessment Appendices, March 2003, Appendix A, Selected time-series aerial photos for change detection; p. 68, The Confluence of the Wheatfield and South Forks of the Gualala River through Time. 1984 and 2000 photos exhibit the same stable (riparian-edge) eastern bend configuration as pre-2005 conditions, coincident with bar vegetation and channel incision following 1960s (tractor logging era).

ATTACHMENT: 2006 Friends of The Gualala River compliance request to state and federal regulatory agencies regarding unauthorized impacts of gravel mining haul road expansion and reconstruction.

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October 26, 2006

SUBJECT: Request for compliance inspection, Gualala River Wheatfield Fork above Valley Crossing, Annapolis Road, Sonoma County; impacts of unauthorized fill, excavation, and vegetation removal from haul road expansion in forested riparian floodplain, including wetlands; August-October, 2006.

Friends of the Gualala River (FoGR) is requesting that you review the attached documentation regarding the impacts and expansion of a reconstructed haul road through a sensitive riparian forest, (including floodplain forest and forested wetlands), where unconsolidated fill and debris have been deposited up to and over the banks of the Wheatfield Fork of the Gualala River. We further request that you conduct an on-site compliance inspection in coordination with federal and state regulatory agencies with jurisdiction over some or all of the activities or official CEQA responsibilities. Essential background information, which we believe may be sufficient for you to determine that a compliance inspection is warranted, is provided below.

FoGR is a 501(c)(3) nonprofit organization dedicated to the protection and recovery of the Gualala River and its watershed). FoGR and other organizations have worked successfully in recent years to protect the Gualala River's riparian forests against impermissible impacts of

timber harvest plans within the river's floodplain and riparian zones. We contacted Sonoma County Permits and Resource Management Agency on September 1, 2006 (cc to staff of your agency) with a request for a compliance inspection of the riparian road expansion and impacts. We believe their response (e-mail from Mike Sotak, PRMD, dated September 12; see Attachment D) of was woefully incomplete, cursory, biased, dismissive, and unacceptable. We therefore now directly request compliance inspection of the site by your agency.

The haul road expansion is located within forested floodplains along the north bank of the Wheatfield Fork, Gualala River, upstream of the Valley Crossing bridge on Annapolis Road (above the confluence of Wheatfield and South Forks), Sonoma County. The road expansion and associated grading and vegetation removal occurred in late August and September 2006, apparently without valid authorization from Sonoma County Permit and Resource Management Department, U.S. Army Corps of Engineers, Regional Water Quality Control Board, or NOAA Fisheries. As shown in Attachments A, B, and C, the road expansion consisted of grading, excavation, fill, hillslope devegetation and soil disturbance, and major vegetation removal far beyond the pre-existing footprint of the original haul road. Vegetation removal included felling of mature conifers, alders, and excavation/removal of streambank ground layer, shrub layer, and overstory canopy. Grading activities included both temporary and permanent stockpiling of graded sediment, construction of turn-outs and double-wide road sections, and discharge of unconsolidated sediment and debris over the river bank (see Attachments A, B, C).

The road expansion in August 2006 was performed in association with gravel mining activities on the Wheatfield Fork (Bar 62). Prior to implementation, the road expansion was casually represented by the Sonoma County Permit and Resource Agency (PRMD) as mere routine, maintenance consisting of "brushing and clearing the road" (e-mail from Mike Sotak, August 8, 2006; Attachment D). In the previous episode of gravel mining at the Wheatfield Fork site, the single haul road through riparian forest was used without expansion of the footprint or major vegetation removal or grading. FoGR was gravely disappointed that in 2006 the "brushing and clearing", were exploited as an opportunity to conduct otherwise impermissible high-impact activities in sensitive forested floodplain and riparian habitat prior to permit applications and commencement of CEQA (and thus prior to determination of the CEQA baseline for impacts).

It had been FoGR's understanding that the County Use permit for gravel mining on the Gualala River expired in May 2005, and a permit would be required for 2006 operations. This understanding was based on a written statement from PRMD that "*It is anticipated that the grace period will be for a one year duration and that the CEQA analysis and further approvals of the County must be in place for mining during the 2006 mining season*" (letter from David Schiltgen to Peter Baye, September 9, 2006; Attachment D). The PRMD letter also confirmed that no Corps permit or NOAA Section 7 consultation had been completed, and no dates for their issuance were forecast. We are certain that there has been no interagency CEQA or NEPA review, planning, or enforceable mitigation attached to the 2006 riparian road expansion or current year gravel mining. The occurrence of the floodplain forest road expansion and riparian habitat impacts during a *second* year of unauthorized, unregulated gravel mining is due to a lack of adequate environmental review and approval. This is unacceptable, and must be corrected.

FoGR is submitting for your review labeled photographs of the immediate post-construction condition of the riparian road, and the post-mining condition of the road, in Attachments A, B and C. The dates of the haul road and bank photographs are August 31, 2006, and October 5, 2006.

As shown, we are concerned that unmitigated, unregulated expansion of the original narrow haul road footprint has significantly encroached into riparian forest and caused significant (and avoidable) impacts to riparian habitats and potential significant impacts to adjacent channel pools. We believe these attachments provide sufficient preliminary evidence to justify a timely compliance inspection to determine if violations of applicable regulations exist, and whether corrective actions are needed.

The following is our preliminary assessment of the impacts of riparian road expansion, as shown in Attachments A-C:

- The road expansion grading removed mature alder and redwood canopy, creating large canopy gaps.
- Bank clearing described by PRMD as mere “brushing” in fact included felling of redwoods, douglas fir, and mature alder within the riparian zone (many over a foot in diameter, and some up to the edge of the channel bank in some locations). Trees and shrubs were removed far beyond the road footprint required for truck passage.
- The nominal “brushing” also included bank clearing and destabilization (denuded vegetation and disturbed soils) of previously forested steep slopes with dense ground layer vegetation above the floodplain/terrace. These previously stable steep (>70%) slopes are now nearly bare and subject to rill, gully, and sheet erosion. Sparse grass seeding on these steep slopes is utterly futile, and may interfere with recovery of the native ground-stabilizing forest vegetation layer.
- Ranch and forest road treatments designed to drain upland hillslope roads were applied inappropriately to the floodplain and wetland haul road: new trenching was placed to drain the road within seasonally flooded wetland backwaters, some of which were fed by perennial seeps. This is reasonably likely to have the effect of draining seasonal wetlands within the riparian zone, which are important amphibian and reptile habitat.
- In addition, rocky fill was placed over seasonally submerged segments of the the silt/clay floodplain road. Fill was spread beyond the original road, expanding over intact riparian ground layer vegetation.
- Stockpiling of sidecast spoils and construction of turnouts (double road sections) beyond the original road edge has resulted in some permanent and some temporary removal of dense ground-layer and shrub layer vegetation in riparian woodland (California blackberry, horsetail, willow) and floodplain redwood forest beyond the footprint of the original single-track road.
- Side-cast spoils of graded road sediments (mostly silts) were discharged as unconsolidated slopes directly above perennial channel pools containing fish and amphibians. These loose fills are prone to erode or launch into pools during fall rains. See Attachments A, B.

These road expansion and reconstruction activities *do not correspond with any reasonable interpretation of “maintenance” limited to routine, periodic upkeep of the original design or established condition of the road.* The extraordinary vegetation clearing (tree removal beyond the road) and construction of trenches, drains, turnouts, and raised solid roadbeds in some road segments is clearly expansion of a previously serviceable road. There was evidently no effort to minimize impacts to the riparian forest canopy or ground layer vegetation prior to the initiation of CEQA or permit review.

The apparent nominal “mitigations” for the impacts of road construction (Attachment C) were mostly superficial placement of straw over unconsolidated, unvegetated soils, often within the active floodplain. Straw mulch is a minor erosion treatment for upland road banks, and offers no stabilization or mitigation value for roads and banks within an active floodplain during high-energy flood flows. The road drainage “mitigations” (rocked drainage ditches, trenches) are themselves likely to have direct impacts to seasonally flooded riparian wetlands, which they now drain along with the road. The misapplication of these conventional *upland* rural road treatments indicates the egregiously low level of planning, supervision, and understanding of floodplain impacts and environments in the absence of regulation and environmental review.

We were aware that PRMD proposed to allow renewed gravel mining on the river after the expiration of the fundamental county authorizations and CEQA (Attachment D). In reliance on PRMD assurances that adequate, CEQA-equivalent supervision and mitigation would govern 2006 gravel mining (Attachment C), FoGR did not actively oppose another extension of the discretionary “grace period” by PRMD in summer 2006 to allow limited gravel mining. FoGR does not oppose, and has not opposed, gravel mining in itself – provided that it is conducted in an environmentally benign and well-regulated manner. We worked in good faith with Sonoma County PRMD to ensure that the substantive equivalent environmental protections of CEQA would govern this year’s gravel mining without the full permit and CEQA process (Attachment D). The excessive, unjustified, and unprecedented road reconstruction in the sensitive riparian floodplain forest was entirely unexpected and betrayed our trust in PRMD.

The failure of environmental regulation in the riparian zone has also renewed FoGR’s concerns about the (unauthorized) gravel mining on the Gualala River itself. We expected that diligent monitoring of ongoing gravel mining would inform the County’s CEQA process for gravel mining permits, but we now have reason to doubt that promise of substantial scientific data collection and public review (letter from D. Schiltgen, September 9, 2005; Attachment D) will be provided. FoGR observed this year that 2005 pit excavation of the degrading terminal bar at the mouth of the South Fork confluence with the Wheatfield Fork (Valley Crossing) appears to have resulted in a major shift of the thalweg/perennial low-flow channel configuration from shaded alder riparian forest (previously stable position) to the breached bar, where it is now fully exposed to sun and flows below bed in summer. Bar 62 and the mining site on the South Fork near Buckeye Creek appear to create a potential for channel capture and switching, or major potential entrapment areas for salmonids (steelhead). Please refer to Attachment E for preliminary evidence of these past and potential future events. We now believe the 2006 gravel mining itself may also warrant specific regulatory review and compliance inspection.

The standard programmatic mitigation measures developed for the Corps Humboldt gravel mining Letter of Permission (LOP 2004-1) to address concerns raised by a draft jeopardy opinion (Section 7, Endangered Species Act) by NOAA Fisheries appear not to be applied to Gualala River gravel mining. Certainly the LOP mitigation condition # 6, “Vegetation and Wetlands” was grossly violated here. This provision requires that “all riparian woody vegetation and wetlands must be avoided to the maximum extent possible...” and if disturbed, “must be mitigated” consistent with “required mitigation” procedures. We believe that the same mitigation should apply to the Gualala River, based on the original (pre-2006) baseline conditions of the riparian zone.

We believe that the documented excessive and unjustified impacts to the riparian zone and floodplain forest would have been prevented by responsible planning (pre-construction baseline surveys of road condition and dimensions, and assessment/mapping of vegetation and habitat along the road alignment) and routine CEQA impact minimization and avoidance measures (mitigation) applicable to wetlands, riparian zones, and floodplains. These would have resulted from timely regulation of the Gualala gravel mining operations by all agencies with jurisdiction.

Some of the damage done without permits may be mitigated only by time and freedom from additional artificial impacts. But some impacts may be lessened by additional mitigation. We again ask you to rigorously review the documented and field evidence in a timely manner, and consider them also in relation to pending CEQA and proper regulation of gravel mining.

Thank you very much for your attention. Please contact me at baye@earthlink.net or (415) 310-5109 if you have any questions. Please also notify me of any final decisions or actions your agency takes concerning this matter.



Sincerely,

Peter R. Baye, Ph.D
Vice President, Friends of the Gualala River

Attachments (separate e-mail transmittal) [*in original; not included here, available on request*]

ATTACHMENT A – Riparian road reconstruction impacts: floodplain (August 30, 2006)

ATTACHMENT B – Riparian road reconstruction impacts: forested slope (August 30, 2006)

ATTACHMENT C – Post-mining road and riparian impacts (October 5, 2006)

ATTACHMENT D – FoGR-Sonoma Co PRMD correspondence, Gualala River, 2005-2006

ATTACHMENT E – 2005-2006 Gravel mining and impacts, Valley Crossing, South Fork, Wheatfield Fork Gualala River

