



**California Regional Water Quality Control Board
Central Coast Region**



Linda S. Adams
Secretary for
Environmental Protection

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Arnold Schwarzenegger
Governor

April 24, 2009

TO: Timber Harvest Program Interested Parties List

Dear Interested Party:

**NOTICE OF PUBLIC HEARING FOR RECOMMENDED MODIFICATIONS TO THE
REGULATION OF TIMBER HARVEST ACTIVITIES IN THE CENTRAL COAST REGION**

Staff reviewed compliance history of timber harvest operations, water quality impacts from reporting and field observations and thoroughly analyzed temperature and turbidity data. Staff found that timber harvest operations are generally not or only minimally impacting water quality. Additionally, Water Board staff incurred budget cuts in 2008 requiring a reduction of staff efforts on lower priority activities. Therefore, Water Board staff recommends modifications to the way the Water Board regulates timber harvest activities. Staff's goal is to continue to regulate timber harvest activities in the most efficient manner possible to protect water quality.

The Board will hold a public hearing to consider public comment and consider approval of the recommend modifications at 8:30 a.m. on Friday, July 10, 2009, at the Watsonville City Council Chambers located at 275 Main Street, 4th Floor, Watsonville, California.

Persons wishing to comment on the recommended modifications should submit comments in writing to the address above no later than **May 25, 2009**. Comments received by May 25, 2009 will be noted and addressed in the staff report to the Water Board for the July 10 Meeting when it is distributed to the public prior to the July 10 Meeting. Comments submitted after May 25, 2009 may not be noted or addressed until the July 10 Meeting. However, all comments will be noted and addressed in the staff report or at the July 10 Meeting.

Interested persons are invited to attend the July 10 Meeting to express their views on the recommended modifications. Persons making presentations should confine their statements to this issue. For the accuracy of the record, all important testimony should be submitted in writing. Oral statements should be brief to allow all interested persons time to be heard.

Dischargers currently implementing a Monitoring and Reporting Program (MRP) associated with the General Conditional Water of Waste Discharge Requirements – Timber Harvest Activities in the Central Coast Region Order No. R3-2005-0066 or an Individual Conditional Waiver of Waste Discharge Requirements for a Timber Harvest Plan or Nonindustrial Timber Management Plan must continue to comply with the requirements of their respective MRPs. The recommended modifications to the regulation of timber harvest activities outlined in the staff report are subject to

California Environmental Protection Agency

modification and approval by the Water Board. Any Discharger that suspends or otherwise modifies their compliance with their current MRP in anticipation of the Water Board approving the recommended changes subjects themselves to potential enforcement action.

The staff report describing the recommended modifications and attachments are enclosed. The staff report, related documents, and all comments and petitions received may be inspected and copied at the office of the Water Board, 895 Aerovista Place, Suite 101, San Luis Obispo, California, on weekdays between the hours of 8:00 a.m. and 5:00 p.m. Please direct comments and questions to **Julia Dyer at (805) 594-6144** or Lisa McCann at (805) 549-3132.

Please bring the foregoing to the attention of any persons you know who may be interested in this matter.

Sincerely,



Roger W. Briggs
Executive Officer

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**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF JULY 10, 2009

ITEM NUMBER: ___

**SUBJECT: RECOMMENDED MODIFICATIONS TO THE REGULATION OF
TIMBER HARVEST ACTIVITIES IN THE CENTRAL COAST REGION**

SUMMARY

The Central Coast Regional Water Quality Control Board (Water Board) has been regulating timber harvest activities intensively since July 2005, when the Water Board adopted Order No. R3-2005-0066, the General Conditional Waiver of Waste Discharge Requirements – Timber Harvest Activities in the Central Coast Region (Attachment 1). Since that time, Water Board staff has gained a better understanding of timber harvest activities, their impact on water quality, and the most appropriate methods for regulating them.

Staff reviewed compliance history of timber harvest operations, water quality impacts from reporting and field observations and thoroughly analyzed temperature and turbidity data. Staff found that timber harvest operations are generally not or only minimally impacting water quality. Additionally, Water Board staff incurred budget cuts in 2008 requiring a reduction of staff efforts on lower priority activities. Therefore, Water Board staff recommends modifications to the way the Water Board regulates timber harvest activities. Staff's goal is to continue to regulate timber harvest activities in the most efficient manner possible to protect water quality. The following recommended modifications assume an estimated 0.4 PY (personnel year) allocation for technical staff to manage the timber program and an allocation of 20 hours per week for one student intern to assist technical staff; previously staff spent about 1 PY on timber harvest program activities.

These recommended modifications, if adopted by the Water Board, will apply to all future waiver enrollees, as well as retroactively to all Timber Harvest Plans (THP) and Nonindustrial Timber Management Plans (NTMP) currently enrolled under an Individual or General Conditional Waiver in the Central Coast Region.

HISTORY

On October 10, 1999 the California State Senate adopted Senate Bill 390 (SB 390) amending California Water Code §13269 by requiring that existing waivers expire on January 1, 2003. This included the Water Board's existing waiver for timber harvest activities, circa 1983, which waived "Timber harvesting operating under approved timber harvest plan." After January 1, 2003 new waivers of waste discharge requirements for specific types of discharges had to be reconsidered and, if appropriate, be renewed every five years.

Prior to SB 390 the Water Board regulated timber harvest activities by participating as a review team member for the California Department of Forestry and Fire Protection (Cal Fire) timber harvest review process. Between January 1, 2003 and July 8, 2005 the Water Board issued Individual Conditional Waivers of Waste Discharge Requirements to all Dischargers¹ seeking to conduct timber harvest activities within the Central Coast Region.

On July 8, 2005 the Water Board adopted the General Conditional Waiver of Waste Discharge Requirements - Timber Harvest Activities in the Central Coast Region Order No. R3-2005-0066 (General Conditional Waiver) and associated Monitoring and Reporting Program (MRP). The requirements for timber harvesting specified in the General Conditional Waiver are equivalent to other general waivers and comply with the California Water Code §13269. As part of the MRP, the Dischargers are required to conduct visual, temperature, and turbidity monitoring within the harvested area.

DISCUSSION

Recommended Modifications

All of the following recommended modifications fall under one of two major categories; 1) General Conditional Waiver Enrollment Process, or 2) Monitoring and Reporting Program Requirements. Changes to the General Conditional Waiver Enrollment Process and Monitoring and Reporting Program are explained in the following discussion and are summarized in the attached table (Attachment 2).

General Conditional Waiver Enrollment Process

Under the current General Conditional Waiver enrollment process, Water Board staff reviews all proposed timber harvest plans within the Central Coast Region as they are submitted to Cal Fire. This process yields small amounts of water quality protection in proportion to the amount of time staff spends on the task of reviewing all plans. Therefore, to more efficiently use Water Board staff's time, staff recommends that instead staff review only the highest priority plans as they are submitted to Cal Fire. Plans categorized by the Discharger as Tier IV by the Eligibility Criteria and / or plans located within water bodies that are listed on the Clean Water Acts Section 303(d) list or identified as impaired for sediment or temperature in an established TMDL will be considered highest priority. Staff will also rely on other review team members and the public to assist in determining the priority of a particular plan.

Since the adoption of the General Conditional Waiver in July 2005, Water Board staff has attended a majority of Cal Fire's preharvest inspections. When Water Board staff was not available to attend the Cal Fire inspection, staff inspected the plan area later with the forester or land owner. Categorically attending all Cal Fire preharvest inspections again yields small amounts of water quality protection in proportion to the amount of time spends on preharvest inspections. Therefore, to more efficiently use Water Board staff's time, staff recommends modifying the frequency of attendance at Cal Fire preharvest inspections. Attendance will be weighted toward Tier IV plans and other high priority plans. This should equate to approximately three to five Cal Fire

¹ Throughout this document "Discharger" means the landowner and anyone working on behalf of the landowner in the conduct of timber harvest activities including monitoring.

preharvest inspections per year. Water Board staff will also prioritize inspections towards active harvest, postharvest, complaints, and violations inspections for high priority plans as well and random inspections for all plans enrolled under an Individual or General Conditional Waiver.

Under the current process, once a plan is approved by Cal Fire, the Discharger submits a detailed Notice of Intent (NOI) (Attachment 3) to request enrollment under the General Conditional Waiver. Staff then conducts a detailed review of the NOI to determine if the information provided is accurate and complete. Staff then runs the complete NOI information through the Eligibility Criteria to determine the appropriate monitoring tier level. This process is very intensive, time consuming, and yields little to no water quality protection. Additionally, information requested by the current NOI is contained in the harvest plan.

Staff recommends revising this process, requiring the Discharger to run their plan under the Eligibility Criteria prior to the Cal Fire preharvest inspection. If the plan is categorized as a Tier IV by the Eligibility Criteria, the Discharger must notify Water Board staff. Under the current process Water Board staff determines a plan's monitoring tier level based on the Eligibility Criteria after the preharvest inspections and after the plan has been approved by Cal Fire. Revising the process to require that the Discharger determines tier ranking in advance of the Cal Fire preharvest inspection allows staff to prioritize attendance at Cal Fire preharvest inspections as described above. Advance knowledge of a plan's tier level also gives staff several months of lead time, instead of weeks, to prepare an Individual Conditional Waiver for Board Meetings. This will minimize staff delays and backlogs enrolling plans and preventing harvests from starting when scheduled. Upon approval of the plan by Cal Fire, the Discharger will fill out the revised NOI (Attachment 4) and submit it to the Water Board. The revised NOI is a two page application providing critical contact information, landowner signature certifying that the information they provided is true and correct, and the monitoring tier with eligibility criteria worksheets attached. This revised NOI is consistent with NOIs in other regions.

Unless the Eligibility Criteria categorizes a timber harvest plan under Tier IV monitoring, the plan will be automatically enrolled under the General Waiver upon receipt of a complete NOI. Plans categorized as Tier IV monitoring will still need to seek enrollment under an Individual Conditional Waiver.

Monitoring and Reporting Program

Based on the current MRP, all plans categorized as Tier I must conduct Cal Fire Forest Practice Rules compliance monitoring, forensic monitoring, and prepare a Road Management Program. Plans categorized as Tier II must conduct all the monitoring requirements of Tier I plus conduct visual and photo monitoring of timber harvest infrastructure. Plans categorized as Tier III must conduct all the monitoring requirements of Tiers I and II plus storm-event based turbidity and summer temperature monitoring. Plans categorized under Tier IV are not eligible for a General Conditional Waiver and must seek coverage under an Individual Conditional Waiver.

The revised MRP is applicable to Tier I – III plans and relies upon adaptive management, compliance with Cal Fire's Forest Practice Rules, visual inspections, and forensic monitoring. Dischargers will still be required to notify the Water Board of a violation, sediment releases, drastic change in site conditions, or events that trigger

forensic monitoring. The recommended revisions are contained in a strike-out and underline version of the MRP included as Attachment 5.

Visual Monitoring

The current MRP outlines a visual inspection program that mandates a minimum of three inspections, triggered by storm-events, during the active harvest period through one year after harvest is completed. Then, for the time period of two through five years after harvest is completed, the visual inspection requirements are consistent with the Road Management Program developed by the Discharger and approved by the Water Board's Executive Officer. A majority of Road Management Programs submitted to the Water Board do not include specific triggers for when the Dischargers should inspect the timber harvest areas during the years two through five monitoring period. Instead the Dischargers have asked Water Board staff to rely on the Discharger's best professional judgment for visual inspection frequency. This means that a Discharger may not inspect the harvest area even once during a given monitoring year. This is not protective of water quality.

The revised MRP replaces the need for the Discharger to develop a Road Management Program by specifying the visual inspection locations and frequency for years two through five. The Discharger, under the revised MRP, will be required to inspect all existing and newly constructed infrastructure. This includes, but is not limited to, the full length of roads, watercourse crossings, landings, skid trails, water diversions, watercourse confluences, known landslides, and all mitigation sites (as documented in the Cal Fire approved THP OR NTMP) in the plan area.

The revised MRP retains the same storm-event based driven inspection frequency as the current MRP, but, instead of the Discharger developing a Road Management Program, the Discharger will be required to inspect the plan area once during the dry season and once during the wet season during years two and three. Then during years four and five the Discharger is required to conduct a visual inspection once during the dry season, to prepare the property for the winter, and once during the wet season in the event of a storm that produces four inches of rain or greater within a twenty-four hour period.

The revised visual monitoring requirements continue to rely on adaptive management for the protection of water quality. If at any time during a visual inspection a Discharger discovers a failed management practice they must take immediate action to repair failed crossings, culverts, roads, and other sources of sediment.

This revision provides the Dischargers with specific visual monitoring intervals, guarantees that the Dischargers will inspect the plans areas at least once a year, and alleviates Water Board staff from the intensive and time consuming requirement to review and provide written approval for individual Road Management Programs which have been consistently inadequate.

The revised MRP also specifies that the visual monitoring requirements represent the minimum amount of inspections for a harvest plan area to comply with the waiver. The Discharger is still responsible for conducting inspections above the minimum, as appropriate, taking into account site specific conditions, problem areas, and periods of above average rainfall. The schedule outlined in the revised MRP are minimum

requirements. The Discharger is responsible for taking all reasonable measures to ensure the site is maintained for the protection of water quality.

The revised MRP contains modifications to the transition between monitoring during the active harvest period through one year after harvest is completed and years two through five monitoring. The revised MRP also contains modifications to the process of rescinding the MRP at the end of year five monitoring. Under the current MRP, before the Discharger can proceed to years two through five monitoring or terminate monitoring at the end of year five, Water Board staff must conduct an inspection and the Executive Officer must provide a written confirmation. Water Board staff has conducted several plan area inspections at the end of year one monitoring. Staff has consistently found site conditions to be protective of water quality. Staff has determined that it is appropriate for the Discharger to proceed to year two monitoring at these sites. Due to staff's limited time base, only two Dischargers have received written confirmation that they may proceed to year two monitoring. Several more Dischargers are conducting year two monitoring strictly based on verbal confirmation from Water Board staff that they may proceed to the next monitoring phase.

Therefore, under the revised MRP, Water Board staff will conduct such inspections as necessary and appropriate and the Discharger will automatically transition to years two through five monitoring. The revised MRP also requires the Discharger to submit a Notice of Termination at the end of year five monitoring. Upon the Water Board's receipt of a completed NOT the MRP will automatically be terminated. Although, the Executive Officer retains the authority to require a Discharger to repeat a monitoring phase or extend the MRP past year five monitoring as appropriate.

Photo Monitoring

Based on the current MRP, photo monitoring is triggered by storm-events, forensic monitoring, and violations reporting and shall be at locations within the timber harvest plan area where timber harvest activities have the greatest risk of potential discharge (sites may be established by the Water Board's Executive Officer during or after the pre-harvest inspection). Storm-event based photo-monitoring points must include sites up and down stream of each newly constructed or reconstructed Class I and Class II watercourse crossing and landing within a Class I or II Watercourse or Lake Protection Zone (WLPZ). As a result of this requirement, Dischargers have submitted nearly 300 photos of stream crossings, landings, and mitigation sites. Water Board staff has reviewed all photos and compared them against preharvest inspection photos, field notes, and the Dischargers visual inspection logs. Each of the 300 photos depict optimal field conditions. This type of categorical requirement has never resulted in Water Board staff identifying failed management practices or field conditions that could indicate a negative impact to water quality.

The revised MRP requires the Discharger to conduct storm-event based photo monitoring at location(s) and frequencies to be established by the Water Board's Executive Officer during or after the pre-harvest inspection. If the Water Board's Executive Officer does not establish storm-event based photo monitoring locations, the Discharger is not required to conduct photo monitoring. This allows the Executive Officer flexibility to specify photo monitoring where appropriate without the categorical requirement to conduct photo monitoring where it may not prove to be useful. The

Discharger is still required to conduct photo monitoring as part of forensic monitoring and violation reporting.

Water Column Monitoring

Since January 2003, the majority of new enrollees that meet Tier III and IV monitoring criteria have been required to collect in-stream turbidity and temperature data. Water Board staff has conducted a thorough review of the data submitted per this requirement. The following is a summary of the findings accompanied with recommended modifications.

Turbidity

Dischargers are required to collect storm-event based turbidity monitoring data in paired sets. These paired sets are either located upstream and downstream of the timber harvest area or upstream and downstream of a newly constructed or reconstructed Class I or II watercourse crossing. The purpose of requiring the Dischargers to collect storm-event based turbidity data is to assist Water Board staff in determining if timber harvest activities are impacting water clarity and increasing sediment loading of sensitive water bodies. During analysis of the turbidity data, Water Board staff considered the following limitations and constraints:

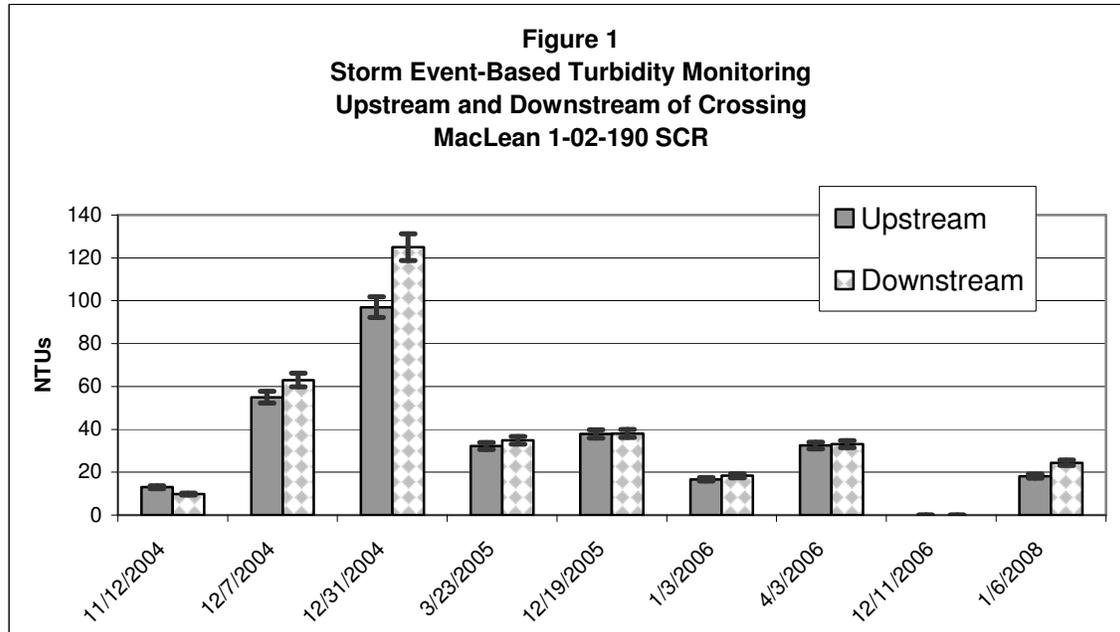
- The only type of silviculture permitted in the Central Coast Region is selective silviculture. None of these data reflect conditions from clear-cutting.
- The Dischargers collected all data during post harvest conditions, the current MRP does not require the collection of baseline or preharvest turbidity data;
- A turbidity grab sample (the only type required in the current MRP) only provides information about the turbidity level at a specific site at the time the sample was taken and provides limited to no basis for extrapolating conditions elsewhere or at other times;
- Often times, the boundary of timber harvest plan area is defined by the stream where the Discharger is collecting turbidity data. Therefore, the turbidity data reflects conditions for which the Discharger only had partial control;
- Turbidity is an extremely variable parameter and the 12-to 24-hour window given to the Discharger to collect the data introduces an additional layer of variability;
- Due to this variability, conducting trend analysis over time for turbidity grab sample data in the same location over time or over different locations on the same date is inappropriate.;
- Some of the locations where the Dischargers are collecting turbidity data are not salmon or trout bearing water bodies;
- Cal Poly, as part of the Little Creek Study, continuously tracks turbidity levels during storm-events in preharvest (i.e. natural) conditions. Cal Poly has routinely recorded turbidity levels in excess of 800 NTUS following large storm-events.

The current MRP requires the Dischargers to conduct turbidity monitoring on a storm-event basis and as required by forensic monitoring. The Dischargers submitted 369 turbidity grab sample data pairs representing five monitoring seasons (April 2003 through December 2008) and twenty-one timber harvest plan areas throughout the Central Coast Region. Water Board staff then compared the turbidity data against turbidity thresholds for salmon and trout cited in scientific literature and turbidity requirements cited in the Basin Plan. As little as 25 NTUs of turbidity caused a reduction in fish growth according to an article titled “Effects of Chronic Turbidity on Density and Growth of Steelheads and Coho Salmon” published by the American Fisheries Society (Sigler, 1984). The Basin Plan established that where natural turbidity is between 0 and 50 JTUs², increases shall not exceed twenty percent. Based on this information, and for the purposes of this analysis, Water Board staff established the following threshold: where either sample in the data pair exceeds 25 NTUs **and** downstream sample shows a greater than twenty percent increase from the upstream sample, in-stream conditions may be negatively impacting salmon and trout as a beneficial use of waters of the state.

Based on evaluation of these data, Water Board staff made the following observations, 1) Five percent or 19 pairs of the 369 data pairs exceeded the criteria, 2) Of the 19 data pairs that exceeded the criteria, 16 pairs, or four percent, are upstream and downstream of a plan area and three pairs or one percent of the data are upstream and downstream of a crossing, 3) The visual inspections logs associated with the nineteen pairs of data that exceed the criteria either report no failure of management practices or report correcting failed management practices at the time the Discharger discovered them during their visual inspection, 4) Water Board staff regularly conducts post-harvest inspections of timber plan areas. Water Board staff’s field observations in post harvest conditions are consistent with the visual inspection logs, 5) The data range for the 369 data pairs (collected in postharvest conditions) is 0 – 834 NTUs, this data range is consistent with preharvest data collection in Cal Poly’s Little Creek Study.

The chart below (Figure 1) displays storm-event based turbidity grab sample data for Timber Harvest Plan 1-02-190 SCR MacLean. The data pairs represent upstream and downstream samples of a Class II culverted watercourse crossing of the haul road. These data represent eight separate turbidity grab samples over five winter monitoring seasons. These data are typical of the data collected as part of the timber harvest program in the Central Coast Region. The error bars represent the margin of error for the turbidimeter used to analyze the samples.

² The Water Quality Control Plan’s (Basin Plan) (Central Coast Region, 1994) numeric target for turbidity is listed in the antiquated Jackson Turbidity Units (JTUs). Yet the Dischargers are required to collect and report their turbidity data in Nephelometric Turbidity Units (NTU). There is no appropriate conversion factor for JTUs to NTUs.



With the exception of the 12/31/04 event, the data pairs consistently meet the evaluation criteria for trout and salmon developed by Water Board staff. Based on the limitations and constraints for turbidity data listed above and the data from storm-events at crossings (1% exceed the threshold), Water Board staff concluded that turbidity data from crossings do not indicate a significant effect on water clarity or sediment load.

As discussed above, the Dischargers conduct visual inspections along with turbidity grab sample collection. The Dischargers repair failed management practices that could result in a sediment discharge, such as a breached water bar, based on their visual inspections. Repairing failed management practices is not routinely accomplished based on the results of storm-event based turbidity grab sampling but rather because of visual inspections. Therefore, Water Board staff concluded it is appropriate to modify the MRP to rely on visual inspections and adaptive management for water quality protection.

The revised MRP requires the Dischargers to collect turbidity grab samples based on forensic monitoring as needed. However, the Discharger will be required to notify the Water Board within 72 hours (revised from 48 hours) and provide a written report within ten days of a violation, sediment release, or events that trigger forensic monitoring.

The revised MRP states the following in regard to storm-event based turbidity monitoring:

“The Discharger is required to conduct storm-event based turbidity monitoring at location(s) and frequencies to be established by the Water Board’s Executive Officer during or after the pre-harvest inspection. If the Water Board’s Executive Officer does not establish storm-event based turbidity monitoring locations, the Discharger is not required to conduct storm-event based turbidity monitoring.”

Temperature

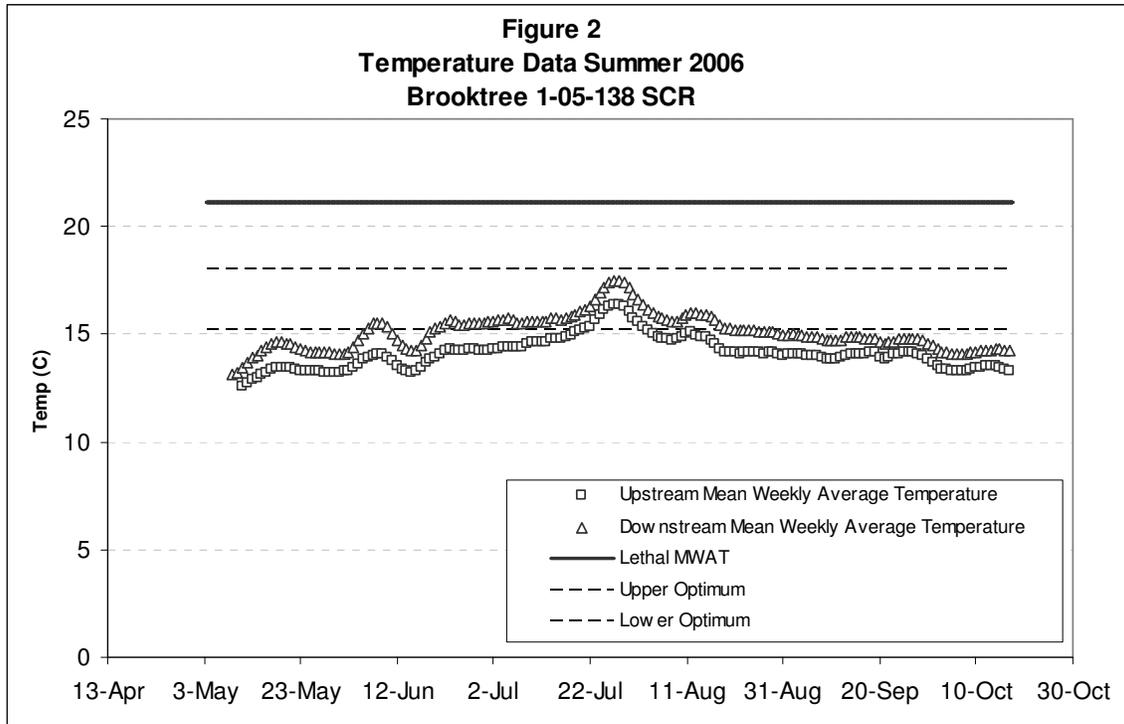
Temperature monitoring associated with the timber harvest program, like the turbidity data, is collected in paired sets. These paired sets are located upstream and downstream the timber harvest plan area. The purpose of requiring Dischargers to collect temperature data is to assist Water Board staff in determining if timber harvest activities are impacting water temperatures. During analysis of the temperature data, Water Board staff considered the following limitations and constraints:

- The only type of silviculture permitted in the Central Coast Region is selective silviculture. None of these data reflect conditions from clear-cutting;
- The Dischargers collected all data during post harvest conditions, the current MRP does not require the collection of baseline or preharvest temperature data;
- Stream-flow, especially in the upper reaches of Santa Cruz County watersheds, where timber harvests typically occur is very low outside of a limited number of perennial streams. This means that Dischargers frequently submerge the temperature data probes in extremely shallow stream conditions, disconnected pools, or in stream that dries out prior to the end of the monitoring season. This is against manufacturers' recommended specifications for the temperature data probes;
- Some of the locations where the Dischargers are collecting temperature data are not salmon or trout bearing water bodies;
- Often times, the boundary of timber harvest plan area is defined by the stream where the Discharger is collecting temperature data. Therefore, the temperature data reflects conditions for which the Discharger only had partial control.

The current MRP requires the Discharger to monitor temperature continuously from May 1 to October 15. The Dischargers have submitted thirty-three separate sample sets to the Water Board representing five summers (2004 through 2008) and twenty timber harvest plan areas. Water Board staff compared the temperature data collected by the Dischargers against the optimal temperature range for salmon and trout juvenile rearing (15 to 18°C) and their lower lethal limit (21°C) (Washington State Department of Ecology, 2002).

Based on evaluation of these data, Water Board staff made the following observations, 1) At no time did any of the data exceed the lower lethal limit, 2) Seventy percent of the data sets showed temperature levels that stayed within or below the optimal temperature range over the entire sampling season, 3) Twelve percent of sample sets had insufficient data due to dry creek conditions prior to the end of the sampling season, 4) Eighteen percent of the data sets had temperature results that exceeded the optimal temperature range for an average of ten days, 5) One-hundred percent of the data sets showed the downstream temperatures warmer than the upstream counterparts, 6) The Forest Practice Rules (enforced by Cal Fire), dictate specific canopy retention requirements for post harvest conditions in riparian areas. These canopy retention requirements depend on the type of stream channel and steepness of bank slope. All plans represented by the thirty-three data sets complied with Cal Fire's canopy retention requirements.

The graph below (Figure 2) displays temperature data for Timber Harvest Plan 1-05-138 SCR Brooktree over the summer of 2006. These data are representative of seventy percent of data sets that showed temperature levels that stayed within or below the optimal temperature range for the entire sampling season. The dashed lines represent the upper and lower optimal temperature range for salmonids based on the scientific literature. The solid line represents the lethal Mean Weekly Average Temperature (MWAT) for salmonids. When temperatures remain above the MWAT for extended periods of time, mortality rates of salmonids can increase dramatically.



Considering the full set of temperature data and the limitations and constraints listed above, Water Board staff determined that timber harvest activities in the Central Coast Region do not appear to be negatively impacting stream temperature. Therefore, Water Board staff concluded that it is appropriate to modify the MRP to require temperature monitoring on a limited basis and rely on the Forest Practice Rules for canopy retention.

The revised MRP states the following in regard to required temperature monitoring:

“The Discharger is required to conduct temperature monitoring at location(s) and frequencies to be established by the Water Board’s Executive Officer during or after the pre-harvest inspection. If the Water Board’s Executive Officer does not establish temperature monitoring locations, the Discharger is not required to conduct temperature monitoring.”

Annual Reporting

The Discharger will still be required to submit an annual report to the Water Board by November 15 of each year. The current annual reporting period is November 15 of the previous year to November 14 of current year. The revised MRP includes a revised annual reporting period from September 30 of previous year to October 1 of current year. This allows the Discharger 45 days lead time to prepare the annual report.

Major or Minor Amendments

Water Board staff recommends that the Discharger continue to be required to notify the Water Board of any major or minor amendments to an already approved Timber Harvest Plan or Nonindustrial Timber Management Plan. Water Board staff will continue to review these notifications and modify the respective MRP as necessary and appropriate.

Compliance Activities, Report Review, and Inspections

Staff will conduct prioritized or random inspections to insure Dischargers are transitioning to the applicable monitoring year consistent with requirements and protective of water quality. Based on field inspections, Water Board staff may determine that management practices are failing or field conditions are not protective water quality. In these instances, Water Board staff will recommend, to the Executive Officer, modifications to the MRP. These recommended modifications will include, as appropriate to the specific site, photo, turbidity, or temperature monitoring. Staff may also recommend an increased frequency of visual inspections or an extension of MRP duration. Water Board staff will follow-up with additional site inspections to ensure the Discharger is complying with the MRP for the protection of water quality.

Occasionally, Dischargers fail to comply with the conditions of the Individual or General Conditional Waiver or the MRP. Such violations may include a failure to submit an NOI, failure to submit Annual Reports, failure to conduct visual inspections, or failed management practices leading to a discharge of sediment and organic material into waters of the state. In such instances, Water Board staff will continue to pursue enforcement activities as necessary and appropriate. This is critical for the protection of water quality and to maintain the integrity of the requirements.

RECOMMENDATION

Staff recommends that the Water Board adopt the recommended changes as described in this report and its attachments. Adaptation of these changes to the NOI, MRP, and regulation of THPs and NTMPs will improve efficiency of Water Board's regulation while protecting water quality. The improved efficiency of the timber harvest regulatory program will provide the opportunity for an increase in compliance inspections, further ensuring water quality protection because staff will focus more time on tangible outcomes of the management and regulation of timber harvest operations instead of review and preparation of documents for enrollment in the Conditional Waiver of Waste Discharge Requirements. Staff will periodically (approximately every two years) evaluate whether these changes maintain an appropriate level of water quality protection. Staff will consider the following indications in making this evaluation: reduction in incomplete applications, reduction in staff time and delays enrolling plans, status of harvest operations during compliance inspections or from complaints, review of monitoring and reporting information from Dischargers, and review of habitat and water quality conditions from regional monitoring efforts.

References

Central Coast Regional Water Quality Control Board. Water Quality Control Plan – Central Coast Region. September 8, 1994

Sigler, John W., T.G. Bjornn, and Fred H. Everest. “Effects of Chronic Turbidity on Density and Growth of Steelheads and Coho Salmon” *The American Fisheries Society*. 1984

Washington State Department of Ecology Water Quality Program Watershed Management Section. Evaluating Standards for Protecting Aquatic Life in Washington’s Surface Water Quality Standards Temperature Criteria. December 2002

Attachments

1. General Conditional Waiver Order No. R3-2005-0066
2. Summary of Recommended Modifications
3. Current Notice of Intent
4. Revised Notice of Intent
5. Revised MRP No. R3-2005-0066

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

Attachment 1

ORDER NO. R3-2005-0066

**GENERAL CONDITIONAL WAIVER OF WASTE DISCHARGE
REQUIREMENTS – TIMBER HARVEST ACTIVITIES
IN THE CENTRAL COAST REGION**

(Revised on July 8, 2005)

WHEREAS, the California Regional Water Quality Control Board, Central Coast Region (hereinafter Regional Board or Central Coast Water Board), finds that:

1. California Water Code (CWC) Section 13260(a) requires that any person discharging waste or proposing to discharge waste within any region that could affect the quality of the waters of the State, other than into a community sewer system, shall file with the appropriate Regional Board a report of waste discharge (ROWD) containing such information and data as may be required by the Regional Board.
2. The Central Coast Water Board prescribes waste discharge requirements except where the Central Coast Water Board finds that a waiver of waste discharge requirements for a specific type of discharge is in the public interest pursuant to CWC (Sections 13267 and 13269).

3. CWC Section 13267 states:

(a) A regional board, in establishing or reviewing any water quality control plan or waste discharge requirements, or in connection with any action relating to any plan or requirement authorized by this division, may investigate the quality of any waters of the state within its region.

(b)(1) In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.

4. CWC Section 13269(a) states:

(1) On and after January 1, 2000, the provisions of subdivisions (a) and (c) of Section 13260, subdivision (a) of Section 13263, or subdivision (a) of Section 13264 may be waived by the state board or a regional board as to a specific discharge or type of discharge if the state board or a regional board determines, after any necessary state board or regional board meeting, that the waiver is consistent with any applicable state or regional water quality control plan and is in the public interest. The state board or a regional board shall give notice of any necessary meeting by publication pursuant to Section 11125 of the Government Code.

(2) A waiver may not exceed five years in duration, but may be renewed by the state board or a regional board. The waiver shall be conditional and may be terminated at any time by the state board or a regional board. The conditions of the waiver shall include, but need not be limited to, the performance of individual, group, or watershed-based, monitoring, except as provided in paragraph (3) below. Monitoring requirements shall be designed to support the development and implementation of the waiver program, including, but not limited to, verifying the adequacy and effectiveness of the waiver's conditions. In

establishing monitoring requirements, the regional board may consider the volume, duration, frequency, and constituents of the discharge; the extent and type of existing monitoring activities, including, but not limited to, existing watershed-based, compliance, and effectiveness monitoring efforts; the size of the project area; and other relevant factors. Monitoring results shall be made available to the public.

(3) The state board or a regional board may waive the monitoring requirements described in this subdivision for discharges that it determines do not pose a significant threat to water quality.

5. The Central Coast Water Board, in compliance with CWC Section 13269, reviewed the previously issued categorical waiver for timber harvest activities (Central Coast Water Board Resolution No. 89-04, Water Quality Control Plan (Basin Plan) Appendix A-23) and determined that it should not be renewed.
6. In accordance with CWC Section 13269, the Central Coast Water Board shall regulate discharge of waste associated with timber harvest activities through the requirements of this general conditional waiver, or, for timber operations that are not eligible for this waiver, through individual waste discharge requirements or individual conditional waivers.
7. The Central Coast Water Board has adopted the Basin Plan for the Central Coast Region, that establishes beneficial uses, water quality objectives, waste discharge prohibitions, and implementation policies that apply to waters of the State and discharges to waters of the State within the Central Coast Region.
8. Pursuant to the Basin Plan and State Board Plans and Policies, including State Water Board Resolution No. 88-63, the existing and potential beneficial uses of waters potentially affected by the proposed activity include:
 - a. Agricultural Supply (AGR)
 - b. Aquaculture (AQUA)
 - c. Preservation of Biological Habitats of Special Significance (BIOL)
 - d. Cold Freshwater Habitat (COLD)
 - e. Commercial and Sportfishing (COMM)
 - f. Estuarine Habitat (EST)
 - g. Freshwater Replenishment (FRSH)
 - h. Ground Water Recharge (GWR)
 - i. Industrial Service Supply (IND)
 - j. Migration of Aquatic Organisms (MIGR)
 - k. Municipal and Domestic Supply (MUN)
 - l. Navigation (NAV)
 - m. Hydropower Generation (POW)
 - n. Industrial Process Supply (PRO)
 - o. Rare, Threatened, or Endangered Species (RARE)
 - p. Water Contact Recreation (REC-1)
 - q. Non-contact Water Recreation (REC-2)
 - r. Shellfish Harvesting (SHELL)
 - s. Spawning, Reproduction, and Development (SPWN)
 - t. Warm Freshwater Habitat (WARM)
 - u. Wildlife Habitat (WILD)
 - v. Inland Saline Water Habitat (SAL)
9. The Basin Plan contains water quality objectives developed to protect the above-listed beneficial uses of water. The factors in CWC Section 13241, including economic considerations, were considered as required by law during the development of these objectives. Prohibitions, provisions, and specifications contained in this Order implement these previously developed water quality objectives. Compliance with water quality objectives will protect the beneficial uses listed in the above paragraph.

**General Conditional Waiver Requirements
Timber Harvest Activities**

10. The California Department of Forestry and Fire Protection (CDF) and the California Board of Forestry (BOF) regulate timber harvest activities on nonfederal lands in accordance with the Z'berg-Nejedly Forest Practice Act (Public Resources Code, Section 4511 et seq.) and the California Forest Practice Rules (Title 14, California Code of Regulations, Section 895 et seq.). CDF is the state agency with primary jurisdiction over timber activities. The Central Coast Water Board cannot issue permits to allow timber harvesting, but only regulates water quality impacts of harvesting operations that have received a permit from CDF. CDF issues such permits by approving timber harvest plans or non-industrial timber management plans. The Central Coast Water Board does not have legal authority to require an alternative project.
11. In 1988, the State Water Board:
 - (a) Conditionally certified the "Water Quality Management Plan for Timber Operations on Nonfederal Lands" which included those California Forest Practice Rules selected as best management practices and the process by which those rules are administered
 - (b) Designated CDF and the BOF as joint Water Quality Management Agencies (WQMA)
 - (c) Executed a Management Agency Agreement with CDF and BOF for the purpose of implementing the certified plan and WQMA designations
12. The Management Agency Agreement between the State Water Board and CDF/BOF required a formal review of the California Forest Practice Rules and administering processes no later than six years from the date of certification. To date, the State Water Board and CDF/BOF have not completed that review.
13. The USEPA has not approved the State Water Board's certification of the California Forest Practice Rules and administering processes for regulation of timber harvest activities on nonfederal lands in California.
14. The Central Coast Water Board, in accordance with the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) (CEQA), has conducted an Initial Study in accordance with Title 14, California Code of Regulations, Section 15063.
15. The Secretary of the Resources Agency has certified that the CDF's timber harvest plan regulatory program can function as a substitute for an Environmental Impact Report or a negative declaration (CEQA Guidelines § 15251.) Registered Professional Foresters submit either a timber harvest plan (THP) or Non-Industrial Timber Management Plan (NTMP) and only CDF has the authority to grant discretionary approval for projects. CDF considers all the significant environmental effects of the project and makes a finding under CEQA Guidelines section 15091 for each significant effect. If CDF finds that the timber operations will not have a significant effect on the environment, a THP or NTMP serves as a substitute negative declaration. If CDF finds that the timber operations may have a significant effect on the environment, the THP or NTMP serves as a substitute environmental impact report, and includes mitigation of potential impacts. CDF consults with the Central Coast Water Board when a THP or NTMP is developed. This waiver requires each enrolled Discharger to comply with all requirements of the respective THP or NTMP.
16. Relevant factors in determining whether a project covered by a general conditional waiver is in the public interest include the following:
 - Whether the discharge is already regulated by another governmental entity;
 - Whether the discharger will observe reasonable practices to minimize the deleterious effects of the discharge;
 - Whether a feasible treatment method exists to control the pollutants in the discharge;
 - Whether a resource agency (California Department of Fish and Game, County of San Mateo, Santa Cruz, Santa Clara, Monterey, San Benito, San Luis Obispo, Santa Barbara, or Ventura) has filed a water quality related non-concurrence with CDF regarding the proposed harvest and that non-

- concurrency has not been resolved; and
- Whether conditionally waiving ROWDs and/or waste discharge requirements will adequately protect beneficial uses while allowing the Central Coast Water Board to utilize more of its scarce resources to conduct field oversight, public outreach and, where necessary, enforcement.
17. The timber harvest plan regulatory program is regulated by the California Department of Forestry, and requires the Discharger to implement practices to control water quality impacts, including erosion and sedimentation. Local ordinances also require various controls. The conditions of this Order protect beneficial uses by:
- (i) Prohibiting pollution, contamination or nuisance;
 - (ii) Requiring monitoring and compliance with applicable water quality control plans;
 - (iii) Requiring the Discharger to grant access to Central Coast Water Board staff to perform inspections; and
 - (iv) Requiring approval of the THP or NTMP by the California Department of Forestry and Fire Protection.
18. The Central Coast Water Board finds that the adoption of the "General Conditional Waiver of Waste Discharge Requirements - Timber Harvest Activities" will not have a significant impact on the environment and will be in the public interest provided that dischargers:
- (a) Comply with the conditions of this Order; and
 - (b) File with the Central Coast Water Board the applicable eligibility documents as described herein, to demonstrate that compliance with the waiver conditions will be achieved; and
 - (c) Comply with applicable State Water Board and Central Coast Water Board plans and policies and as those plans and policies may be amended from time to time through the amendment process;
19. Pursuant to CWC Section 13269, this action waiving the issuance of waste discharge requirements for certain specific types of discharges: (a) is conditional, (b) may be terminated at any time, (c) does not permit an illegal activity, (d) does not preclude the need for permits which may be required by other local or governmental agencies, and (e) does not preclude the Central Coast Water Board from administering enforcement remedies (including civil liability) pursuant to the CWC.
20. A waiver of waste discharge requirements for a type of discharge may be superseded by the adoption by the State Water Board or Central Coast Water Board of specific waste discharge requirements or general waste discharge requirements for that type of discharge.
21. Management practices are the most feasible treatment method to control the discharges. If a proposed timber harvest is conducted in the manner prescribed in the THP or NTMP and the conditions of this Order, a waiver of waste discharge requirements is in the public interest and is consistent with applicable water quality control plans, including the Water Quality Control Plan, Central Coast Region.
22. The winter period for the Central Coast Region shall be October 15 through April 15.
23. The rain year for the Central Coast Region shall be July 1 through June 30.
24. The results from the Eligibility Criteria for a specific THP or NTMP will function as a minimum level for establishing monitoring requirements for that THP or NTMP.

**General Conditional Waiver Requirements
Timber Harvest Activities**

25. Tier III monitoring is required if ground based equipment is used off of an all weather road during the period October 15 to May 1. Tier III monitoring is required for the next 24 months (until July 31, 2007) for all THPs or NTMPs that fall into Tier II or III.
26. The Central Coast Water Board has adopted a Negative Declaration in accordance with CEQA and the CEQA Guidelines (Title 14, California Code of Regulations, Section 15000 et seq.). The Negative Declaration concludes that the waiver of waste discharge requirements for specific types of timber harvest operations pursuant to this Order will not have a significant impact on the environment.
27. Copies of the proposed Order and monitoring and reporting plan were transmitted to all agencies and persons known to be interested in this matter according to the applicable provisions of CEQA.
28. The Central Coast Water Board conducted a public hearing on July 8, 2005 in San Luis Obispo, California, and considered all testimony and evidence concerning this matter;

THEREFORE IT IS HEREBY ORDERED:

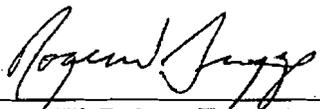
1. In accordance with CWC Section 13269, the waste discharges related to timber harvest activities in the Central Coast Region, that are not subject to individual conditional waivers or waste discharge requirements, shall be regulated by general conditional timber harvest waiver requirements, and waste discharge requirements and the requirement to submit a report of waste discharge are hereby waived subject to the following conditions:
 - a. "Discharger" means the landowner and anyone working on behalf of the landowner in the conduct of timber harvest activities.
 - b. The Discharger shall submit a Notice of Intent (NOI) on the attached form (Attachment A) or on such other form that the Executive Officer requires. This waiver shall not take effect as to a particular timber operation until the Executive Officer approves the NOI in writing.
 - c. The Discharger shall comply with all requirements of applicable water quality control plans (examples shown in Attachment B) as these may be modified from time to time pursuant to amendments to water quality control plans adopted by the Central Coast Water Board and approved by the State Water Resources Control Board (State Water Board) and water quality control plans and policies adopted by the State Water Board.
 - d. The Discharger shall obtain CDF approval of a THP and/or NTMP for the timber harvest activities before enrollment in this waiver takes effect. The Discharger shall conduct timber harvest activities in accordance with the approved THP or NTMP and with all applicable sections for the Forest Practice Rules.
 - e. Discharger shall notify the Central Coast Water Board concurrently when submitting a request to CDF for a minor or major amendment.
 - f. The Discharger shall obtain and comply with all local, state and federal permits required by law. The Discharger shall comply with all applicable county ordinances related to timber operations, including zoning ordinances.
 - g. The Discharger shall not create a condition of pollution, contamination, or nuisance, as defined by CWC Section 13050.
 - h. The Discharger shall not discharge any waste not specifically regulated by this Order, except in compliance with CWC Section 13264. Waste specifically regulated by this Order includes: earthen

materials including soil, silt, sand, clay, rock; organic materials such as slash, sawdust, or bark. Examples of waste not specifically regulated by this Order include petroleum products, hazardous materials, or human wastes.

- i. The Discharger shall not cause alteration in stream temperature that exceeds Basin Plan requirements.
 - j. The Discharger shall allow Central Coast Water Board staff reasonable access, in accordance with Public Resources Code section 4604(b) and California Water Code section 13267, onto the affected property for the purpose of performing inspections to determine compliance with the conditional waiver requirements.
 - k. Pursuant to California Water Code Section 13267, the discharger shall comply with Monitoring and Reporting Program No. R3-2005-0066. The Central Coast Water Board needs this information to verify that a general conditional waiver of waste discharge requirements is the appropriate regulatory tool for Timber Harvest activities in San Mateo, Santa Cruz, Santa Clara, Monterey, San Benito, San Luis Obispo, Santa Barbara, and Ventura counties. Evidence that supports the need for this information was presented at the July 8, 2005 meeting of the Central Coast Water Board, the staff report for Item 26 at that meeting, and Monitoring and Reporting Plan No. R3-2005-0066.
 - l. This Order does not regulate point-source discharges that require an NPDES permit under the Clean Water Act, including but not limited to silvicultural point-source discharges as defined in 40 CFR Chapter 1 Part 122.27.
 - m. The Discharger shall take immediate action to repair failed crossings, culverts, roads and other sources of sediment.
 - n. All erosion and sediment control devices, management measures and mitigations prescribed in a THP or NTMP shall be maintained in good working order for the term of the general waiver requirements.
 - o. The Discharger shall comply with all requirements of the Executive Officer pursuant to MRP R3-2005-0066.
2. The Central Coast Water Board, based on the above-noted facts and findings, determines that it is not necessary at this time to adopt individual or general waste discharge requirements for waste discharges related to timber harvest activities that meet the conditions specified in this waiver and which are conducted in accordance with the requirements specified in this waiver.
 3. This Waiver shall not create a vested right and all such discharges shall be considered a privilege, as provided for in CWC Section 13263.
 4. The Executive Officer shall not approve the NOI or shall terminate the applicability of a waiver to specific timber harvest activities (as applicable) if the Executive Officer makes any of the following determinations:
 - a. The timber harvest activity is not in compliance with any applicable condition of this waiver.
 - b. The timber harvest activity has varied in whole or in any part from the approved THP or NTMP, unless these changes result in better protection of water quality.
 - c. The timber harvest activity is likely to adversely affect the quality or beneficial uses of waters of the State. In making this determination, the Executive Officer shall consider, at a minimum, the THP or NTMP, information from the pre-harvest inspection or other site inspections, the Notice of Intent, the Eligibility Criteria (Exhibit 1 to MRP R3-2005-0066), and all available monitoring reports.

5. Upon receipt of notice of termination of applicability of the waiver, the discharger shall immediately cease all timber harvest activities that may result in discharges to waters of the State, other than activities necessary to control erosion. Upon notice of termination, the discharger must file a report of waste discharge and applicable filing fee. Timber harvest activities that may result in discharges that could affect the quality of waters of the State may commence only upon enrollment by the Executive Officer under general waste discharge requirements, the adoption by the Central Coast Water Board of an individual waiver of waste discharge requirements or individual waste discharge requirements, or in accordance with CWC Section 13264(a).
6. This general conditional waiver shall become effective on July 8, 2005, and shall expire on July 8, 2010, unless terminated or renewed by the Central Coast Water Board. The Central Coast Water Board may terminate this waiver at any time, either as to a particular timber harvest or in its entirety.
7. As provided by CWC Section 13350(a), any person who, in violation of any waiver condition, discharges waste, or causes or permits waste to be deposited where it is discharged, into the waters of the state, is subject to administrative or civil liability for the violation.
8. Any person affected by this action of the Central Coast Water Board may petition the State Water Board to review the action in accordance with section 13320 of the California Water Code and Title 23, California Code of Regulations, Section 2050. The petition must be received by the State Water Board within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request.

I, Roger W. Briggs, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Order adopted by the California Regional Water Quality Control Board, Central Coast Region, on July 8, 2005.



Roger W. Briggs, Executive Officer

7-29-05

Date

Summary of Recommended Modifications to the Central Coast Regional Water Quality Control Board's Regulation of Timber Harvest Activities

	Step in the Process	Current Water Board Action	Proposed Revision
1a	Discharger files THP or NTMP with Cal Fire.	Review 100% of plans submitted.	Prioritize plans as they come in. (Rely on review team and public for additional input.)
1b	Program Management	<ul style="list-style-type: none"> • Timber tracker • E-mail • Lyrlist List • Speaking with stakeholders • Round tables • CIWQS • Paperless Office 	<p>Water Board staff will continue to manage information and communications.</p> <ul style="list-style-type: none"> • E-mail • Lyrlist List • Speaking with stakeholders • Round tables <p>Have a student assist with data management and paperless office inflow:</p> <ul style="list-style-type: none"> • Timber Tracker • CIWQS • Paperless Office
2	Cal Fire holds first review.	Participation as appropriate.	Continue to participate as appropriate.
3	Cal Fire holds preharvest inspection.	Attend inspection. (Note: Staff expectation to attend 100% of inspections.)	Conduct inspections on high priority plans. Approximately three to five inspections per year.
4	Cal Fire holds second review.	Participation as appropriate.	Continue to participate as appropriate.
5	Cal Fire approves the plan.	N/A	N/A

Summary of Recommended Modifications to the Central Coast Regional Water Quality Control Board's Regulation of Timber Harvest Activities

6	Discharger submits detailed NOI.	NOI: Detailed description of harvest.	NOI: Two page application.
		Tiers I – III: Water Board staff reviews with eligibility criteria and prepare waiver packet.	Tiers I – III: Automatically enrolled with submission of complete NOI.
		Tier IV: Present to the Board as Individual Conditional Waivers with site specific recommendations.	Tier IV: Continue to Present to the Board as Individual Conditional Waivers with site specific recommendations.
7	Plan enrolled under MRP.	Blanket requirements for photo, storm event-based turbidity, summer temperature, visual, road inventory program, and forensic monitoring. Requirement to notify staff within 48 hours of finding a problem.	Strength of MRP with visual and forensic monitoring with requirement to notify staff within 72 hours of finding a problem. Road inventory program is built into visual inspection requirements. Require photo, storm event based turbidity, or summer temperature monitoring requirements as appropriate for specific site conditions.
7a	Applicant submits annual report on November 15.	Track and review annual reports. Reporting period November 15 of the previous year to November 14 of current year.	Continue to track and review annual reports. Modify reporting period to September 30 of previous year to October 1 of current year. Allows Dischargers 45 days lead time to prepare the report.
7b	Applicant reaches end of "Year One"	Conduct inspection of property. Issue letter signed by the Executive Officer to keep them in "Year One" or graduate them to "Year Two."	Automatic to "Year Two". Water Board may require Discharger to repeat "Year One" monitoring if appropriate.

Summary of Recommended Modifications to the Central Coast Regional Water Quality Control Board's Regulation of Timber Harvest Activities

7c	Discharger reaches end of "Year Five"	Conduct inspection of property and write a letter rescinding their MRP.	Automatic termination of MRP with receipt of a complete Notice of Termination (NOT) signed by landowner at the end of "Year Five" monitoring.
8	Discharger notifies Water Board of major or minor amendments.	Water Board staff reviews amendments for potential impact to water quality and record in timber tracker. Modify MRP as appropriate.	No change.
	Enforcement as needed and appropriate.	Continue to take enforcement as needed and appropriate.	

Notice of Intent for
 General Conditional Waiver of Waste Discharger Requirements –
 Timber Harvest Activities in the Central Coast Region
 Order No. R3-2005-0066

Attachment 3

1. Plan or Notice Name: Plan Number and NTO (if applicable):

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2. Landowner's Contact Information:

Name:		
Address:		
City:	State:	Zip Code:
Phone: ()	E-mail address (optional):	

3. Name and Phone Number of Contact Person(s):

Name:	Phone: ()
Name:	Phone: ()

4. Registered Professional Forester :

RPF Name/Signature:	RPF Number:	
Address:		
City:	State:	Zip Code:
Phone: ()	E-mail address (optional):	

5. Timber Owner if different from the Landowner (if same leave blank):

Address:		
City:	State:	Zip Code:
Phone: ()	E-mail address (optional):	

Notice of Intent for
General Conditional Waiver of Waste Discharger Requirements –
Timber Harvest Activities in the Central Coast Region
Order No. R3-2005-0066

6. Certification:

I, the Landowner named above, hereby certify under penalty of perjury that the CDF-approved plan or CDF-accepted notice and the accompanying Notice of Intent and site map accurately represent site conditions on the property.

I will report any significant change in site conditions to the Water Board (i.e. fire, landslide, etc.)

I understand that, as the Landowner, I am ultimately responsible for all activities that occur on my property.

I also understand that I am ultimately responsible for compliance with all conditions of any Waste Discharge Requirements or Waiver of Waste Discharge Requirements (including Order No. R3-2005-066) and associated Monitoring and Reporting Requirements issued for the above-referenced activity.

Landowner: _____	Date: _____
Print Name	Signature*

*Must receive landowner's original signature (name listed in block #2 above), blue ink preferred.

Notice of Intent for
General Conditional Waiver of Waste Discharger Requirements –
Timber Harvest Activities in the Central Coast Region
Order No. R3-2005-0066

Attachments:

- ❖ Site map with all proposed monitoring points (visual, turbidity, temperature, and photo), proposed monitoring route, creeks, landings, skid trails, roads, and mitigation points clearly identified and labeled. The site map must include:
 - In color (if possible).
 - Title stating: "Water Quality Monitoring Locations for [THP OR NTMP Name and Number as it appears in the THP or NTMP and No.]"
 - All monitoring locations and routes clearly marked with unique site identification tags.
 - A Key or Legend identifying all monitoring locations and routes.
 - North Arrow.
 - Scale
 - Author
 - Date
- ❖ Proof of CDF approval of the THP/NTMP (copy of the "green sheet").

Notice of Intent for
 General Conditional Waiver of Waste Discharger Requirements –
 Timber Harvest Activities in the Central Coast Region
 Order No. R3-2005-0066

7. Timber Harvest Summary

a) Date of California Department of Forestry's (CDF) approval of plan:

This THP / NTMP was approved by CDF on: [Day, Month, Year]

b) THP or NTMP size and Watershed size:

Size of THP / NTMP: [parcel size in acres]
Amount to be harvested (during this conditional waiver enrollment period): [harvest size in acres]
Greater Watershed Name (e.g. Pajaro): [name]
Subwatershed Name (e.g. Corralitos Creek): [name]
Calwater ID v2.2 for subwatershed (e.g. 3305.100102): [ID number]
Subwatershed Size: [size of subwatershed in acres]
Amount harvested in subwatershed over the last 15 years: [amount in acres]
Amount currently proposed for harvest in subwatershed (not including this project): [size in acres]

c) Logging Technique (Yarding) (check all applicable):

Ground based (skidding, long line):	Cable Yarding:	Helicopter:
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d) Roads (list all lengths in feet):

	Seasonal / Temporary	All weather / Permanent
Existing:	[length in feet]	[length in feet]
Proposed:	[length in feet]	[length in feet]
In-lieu / Alternative Rule in WLPZ:		[length in feet]
Road in: High EHR:	[length in feet]	Extreme EHR: [length in feet]

e) Road crossings (amount):

Class I:	[number]	Class II:	[number]	Class III:	[number]
Does the project contain any newly constructed or reconstructed Class I or Class II crossings? If yes please describe:					

f) Skid Trails (list all lengths in feet). For areas with unmarked skidtrails, add 100 feet per acre.

Existing:	[length in feet]	
Proposed:	[length in feet]	
In-lieu / Alternative Rule in WLPZ:	[Reported by number, not length]	
Skidtrail in: High EHR:	[length in feet]	Extreme EHR: [length in feet]

g) Skidtrail crossings (amount):

Class I:	[number]	Class II:	[number]	Class III:	[number]
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h) Landings (amount):

	Existing	Proposed
Ground-based:	[number]	[number]
Helicopter:	[number]	[number]

Notice of Intent for
 General Conditional Waiver of Waste Discharger Requirements –
 Timber Harvest Activities in the Central Coast Region
 Order No. R3-2005-0066

In-lieu / Alternate Rule	[number]	[number]
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i) Winter operations (YES/NO)?

If yes, please provide the page number in the THP or NTMP where the description of winter operations start:

j) Stream Classes (length in feet):

Linear feet of stream:	
Class I:	[length]in[feet]
Class II:	[length]in[feet]
Class III:	[length]in[feet]

k) Cumulative Impact Analysis

Threatened and Impaired for Steelhead/Coho? (YES/NO) If yes please explain:

Is the harvest area in 303(d) listed watershed (YES/NO)?
 If yes, what is the impairment (sediment, temperature, etc.)?:

l) Proposed Monitoring Points and Data

Describe all monitoring points shown on site map and include latitude / longitude (in decimal degrees) for each location:

m) Rainfall measurement procedures and locations

Please provide a detailed description of rainfall measurement procedures and locations or a reference to the page number in the THP / NTMP where this is described:

n) Central Coast Regional Water Quality Control Board Staff Site Inspection

Describe the most recent inspection of the property by Water Board staff:	
Name of Staff Person	Date of Inspection

S:\NPS\Timber_Harvest\Board Meetings\2009\A3_NOIOriginal.doc



California Regional Water Quality Control Board Central Coast Region

Water Boards STATE WATER RESOURCES CONTROL BOARD REGIONAL WATER QUALITY CONTROL BOARDS

Notice of Intent

(Application for enrollment under Order No. R3-2005-0066 General Conditional Waiver of Waste Discharge Requirements – Timber Harvest Activities in the Central Coast Region)

Fill out entire document (two pages) including signature. All fields are required.

Please type or print clearly in ink. Electronic submittal is acceptable.

1. Plan or Notice Name: Plan Number and NTO (if applicable):

Form fields for Plan or Notice Name and Plan Number and NTO (if applicable)

2. Date plan was approved by CA Department of Forestry and Fire Protection (Cal Fire):

Form field for Date plan was approved by CA Department of Forestry and Fire Protection (Cal Fire), with note: Applications will only be considered complete and accepted for plans approved by Cal Fire.

3. Landowner's Contact Information:

Form fields for Landowner's Contact Information: Address, City, State, Zip Code, Phone, and E-mail address (optional)

4. Name and Phone Number of Contact Person(s):

Form fields for Name and Phone Number of Contact Person(s)

5. Tier Level¹:

Enrollment under the General Waiver

Monitoring Tiers I – III: As determined by the Eligibility Criteria. You must comply with Monitoring and Reporting Program (MRP) R3-2005-0066 revised on [Date]. The MRP includes visual monitoring, Cal Fire forest practice rules compliance monitoring, and forensic monitoring.

Individual Waiver of Waste Discharge Requirements

Monitoring Tier IV: As determined by the Eligibility Criteria. The MRP will include site specific monitoring types and locations proposed by Water Board staff and approved by the Central Coast Regional Water Quality Control Board at a regularly scheduled board meeting.

¹ You must attach the eligibility criteria with worksheets to verify tier level.

6. Certification:

I, the Landowner named above, hereby certify under penalty of perjury that the Cal Fire-approved plan or Cal Fire-accepted notice and this Notice of Intent accurately represent site conditions on the property.

I will report any significant change in site conditions to the Water Board (i.e. fire, landslide, etc.) as required by forensic monitoring.

I understand that, as the Landowner, I am ultimately responsible for all activities that occur on my property.

I also understand that I am ultimately responsible for compliance with all conditions of any Waste Discharge Requirements or Waiver of Waste Discharge Requirements (including Order No. R3-2005-0066) and associated Monitoring and Reporting Requirements issued for the above-referenced activity.

Landowner: _____	Date: _____
<i>Print Name</i>	<i>Signature*</i>

*Must receive landowner's original signature (name listed in block #2 above), blue ink preferred.

Attachments:

Eligibility Criteria and Worksheets

**REVISED MONITORING AND REPORTING PROGRAM
ORDER NO. R3-2005-0066**

**GENERAL CONDITIONAL WAIVER OF
WASTE DISCHARGE REQUIREMENTS –
TIMBER HARVEST ACTIVITIES IN THE CENTRAL COAST REGION**

**TIERS I - III MONITORING FOR
TIMBER HARVEST AND NONINDUSTRIAL TIMBER MANAGEMENT PLANS**

July 10, 2009

Timber Harvest Plan (THP) or Nonindustrial Timber Management Plan (NTMP) is enrolled under the Tiers I - III Monitoring and Reporting Program (MRP). The monitoring tier for the THP or NTMP is based on the Eligibility Criteria (attached in Exhibit 1).

This revised Monitoring and Reporting Program Order No. R3-2005-0066 (MRP) is issued pursuant to Water Code sections 13267 and 13269. Failure to comply with this MRP may subject the Discharger¹ to monetary civil liability in accordance with Water Code section 13268 and 13350. Monitoring shall begin at the onset of timber harvest operations and must comply with this MRP and any subsequent revisions. Monitoring shall continue until the Discharger submits a complete Notice of Termination the end of the fifth year after timber harvest activities are complete, unless the Executive Officer extends or otherwise revises the MRP.

The Executive Officer may add additional monitoring requirements based on site specific conditions.

MONITORING LOCATIONS FOR TIERS I - III MONITORING

The Discharger is required to perform monitoring at the locations described below; in Section I – Implementation and Effectiveness Monitoring and Monitoring Frequency; Section II – Data Logging and Reporting; and Section III – Standard Provisions.

VISUAL MONITORING POINTS: The Discharger is required to conduct visual monitoring for all existing and newly constructed infrastructure. This includes but is not limited to the full length of roads, watercourse crossings, landings, skid trails, water diversions, watercourse confluences, known landslides, and all mitigation sites in the THP or NTMP area (as documented the California Department of Forestry and Fire Protection (CAL FIRE) approved THP or NTMP).

¹ Throughout this document "Discharger" means the landowner and anyone working on behalf of the landowner in the conduct of timber harvest activities including monitoring.

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COUNTY;
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- Deleted: THPs that are categorized by the eligibility criteria as Tiers II or III cannot be downgraded to a lower category based on other criteria. The Water Board's Executive Officer may not change the monitoring requirements so they are less stringent than the requirements in the designated tier from the eligibility criteria
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SITE
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Visual monitoring points shall include
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CAL FIRE FOREST PRACTICE RULES COMPLIANCE MONITORING: The Discharger is responsible for and is required to ensure timber harvest activities are conducted in accordance with the approved THP or NTMP and with all applicable sections of the Forest Practice Rules. This includes allowing site access for compliance inspections by Cal Fire and Central Coast Regional Water Quality Control Board (Water Board) pursuant to 40 CFR Article 8, Section 4604.

FORENSIC MONITORING: The Discharger is required to conduct forensic monitoring as described in Section I below.

**SECTION I – IMPLEMENTATION AND EFFECTIVENESS
MONITORING AND MONITORING FREQUENCY**

VISUAL MONITORING

VISUAL MONITORING POINTS: Visual monitoring points must include all existing and newly constructed infrastructure. This includes but is not limited to the full length of roads, watercourse crossings, landings, skid trails, water diversions, watercourse confluences, known landslides, and all mitigation sites (as documented in the Cal Fire approved THP OR NTMP) in the plan area.

VISUAL MONITORING FREQUENCY: The Discharger is required to monitor all visual monitoring points for existing or potential sources of erosion according to the schedule as defined below. This schedule represents the minimum amount of inspections for the harvest plan area to comply with the waiver. The Discharger is still responsible for conducting inspections above the minimum, as appropriate, taking into account site specific conditions, problem areas, and periods of above average rainfall. The schedule outlined below are minimum requirements, the Discharger is responsible for taking all reasonable measures to ensure the site is maintained for the protection water quality.

Active Harvest Period plus One Year – The Discharger is required to monitor a minimum of three times over each 12 months during active harvest and for one full year after the year after harvest is complete. This monitoring period begins with the onset of timber harvest operations and continues during the entire length of time active timber harvest operations occur plus one full year after timber harvest activities are complete.

Monitoring Event One:

The Discharger is required to perform the first monitoring event within 12 to 24 hours of the first storm event that yields two inches of rain or greater within a 24-hour period.

Monitoring Events Two and Three:

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Deleted: ROAD INVENTORY PROGRAM: The Discharger is required to develop and implement a Roads Management Program (example attached in Exhibit 2, Big Creek Road Inventory Program) within the THP area. The road management program must be approved by the Water Board's Executive Officer prior to implementation.

Deleted: Visual monitoring points must be at locations within the timber harvest plan area where timber harvest activities have the greatest impact.

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The Discharger is required to perform the next two monitoring events within 12 to 24 hours of the next two storm-events (one monitoring event each storm) that yield two inches of rain or greater within a 24-hour period after the start of the winter period on October 15 or four inches of cumulative rainfall, whichever occurs first.

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Years Two and Three – In years two and three, following completion of timber harvest operations, visual monitoring shall be implemented at least twice, once during the dry season and once during the wet season.

Dry season monitoring:

During monitoring years two and three the Discharger is required to perform visual monitoring and prepare the site for the winter at least once between April 15th and October 14th.

Wet season monitoring:

During monitoring years two and three, the Discharger is required to perform visual monitoring at least once between October 15th and April 14th. Within 72 hours of the first storm that produces 3 inches of rain within a 24 hour period. If no storm-events of that intensity occur during the wet season, the Discharger conduct at least one inspection during the wet season.

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Years Four and Five – In years four and five, following completion of timber harvest operations, visual monitoring shall be implemented a minimum of one time during the dry season, and additionally as triggered by storm-events in the wet season.

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Dry season monitoring:

During monitoring years four and five the Discharger is required to perform visual monitoring and prepare the site for the winter at least once between April 15th and October 14th.

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Wet season monitoring:

During monitoring years four and five, the Discharger is required to perform visual monitoring between October 15th and April 14th within 72 hours of the first storm that produces 4 inches of rain or greater within a 24 hour period. If no storm-events at that intensity occur during the wet season, the Discharger is not required to conduct an inspection during the wet season.

Deleted: Important Note: You may not begin Year Two monitoring until you are directed to do so in writing by the Water Board's Executive Officer

Deleted: If implemented management practices are not adequately protecting water quality and beneficial uses, as determined by the Water Board's Executive Officer, the Discharger is required to repeat "Year One"

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Summary of Visual Monitoring Frequency:

"Year One": minimum of three events
Years Two and Three: minimum of two events
Years Four and Five: minimum of one event

PHOTO MONITORING

The Discharger is required to conduct photo monitoring at location(s) and frequencies to be established by the Water Board's Executive Officer during or after the pre-harvest inspection. The Discharger must conduct photo monitoring consistent with the "Standard Operation Procedure 5.2.3 – Photo Documentation Procedure" included in Exhibit 1. If the Water Board's Executive Officer does not establish photo monitoring locations, the Discharger is not required to conduct photo monitoring except as required by forensic monitoring or violation reporting.

TEMPERATURE MONITORING

The Discharger is required to conduct temperature monitoring at location(s) and frequencies to be established by the Water Board's Executive Officer during or after the pre-harvest inspection. The Discharger must conduct temperature monitoring consistent with the "Standard Operating Procedures Continuous Temperature Monitoring" included in Exhibit 1. If the Water Board's Executive Officer does not establish temperature monitoring locations, the Discharger is not required to conduct temperature monitoring.

TURBIDITY MONITORING

TURBIDITY MONITORING POINTS: The Discharger is required to conduct storm-event based turbidity monitoring at location(s) and frequencies to be established by the Water Board's Executive Officer during or after the pre-harvest inspection. The Discharger is required to conduct forensic monitoring at location(s) and frequencies as described below. All turbidity monitoring must be consistent with the requirements in the document Central Coast Regional Water Quality Control Board, Timber Harvest Program, Standard Operating Procedures for In-stream Turbidity Monitoring (October 2006) (attached in Exhibit 1). If the Water Board's Executive Officer does not establish storm-event based monitoring locations, the Discharger is not required to conduct storm-event based monitoring.

FORENSIC MONITORING

When the discharger observes any site conditions described below, the Discharger is required to notify Water Board staff within 72 hours and submit to a written report within ten working days. The Discharger is also required to implement management practices immediately to prevent discharge and impacts to water quality. The written report shall include photo documentation, in-stream

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PHOTO-MONITORING POINTS: Photo-monitoring points shall be at locations within the timber harvest plan area where timber harvest activities have the greatest risk of potential discharge (sites may be established by the Water Board's Executive Officer during or after the pre-harvest inspection). Photo-monitoring points must include sites up and down stream of each newly constructed or reconstructed Class I and Class II watercourse crossings and landings within a Class I or II Watercourse or Lake Protection Zone (WLPZ). Monitoring photos need to be of sufficient quality to record the effectiveness of the implemented management practice. ¶

¶ The Discharger must ¶

¶ Utilize the attached document titled "Standard Operation Procedure 5.2.3 - Photo Documentation Procedure" (including any subsequent revisions to SOP 5.2.3) as the protocol for all photo-monitoring (attached in E ... [3]

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turbidity data², and a description of implemented management practices and corrective actions. If the discharger does not implement management practices or corrective action they must explain why. Upon review of the report, the Water Board's Executive Officer will determine completeness of the report and the need for additional actions necessary for the protection of water quality and beneficial uses.

1. If at any time during implementation or effectiveness monitoring, the Discharger observes failed management measures and/or source of discharge, the Discharger is required to conduct forensic monitoring to identify the source. Management measure failure is defined as: 1) whenever an implemented management measure creates a condition of pollution, contamination, or condition of nuisance, as defined by California Water Code (CWC) Section 13050, or 2) when lack of implementation of a necessary management measure creates a condition of pollution, contamination, or condition of nuisance, as defined by CWC Section 13050.
2. If management measures fail (this includes failure to implement appropriate management measures as determined by Cal Fire and documented by Cal Fire as a violation of the Forest Practice Rules).
3. If timber activities cause a discharge (sediment, soil, other organic material, etc.) into waters of the State.
4. If at any time during implementation or effectiveness monitoring, the Discharger observes a discharge (sediment, soil, other organic material, herbicides, pesticides, fluids from timber equipment (oil, hydraulic fluid, etc), etc.).
5. If at any time during implementation or effectiveness monitoring, the Discharger observes a significant change in site conditions (i.e. fire, landslide, etc.).

Deleted:) the Discharger is required to photo³ document them and is required to implement management practices immediately to prevent discharge and impacts to water quality.

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FORENSIC MONITORING AREAS OF CONCERN: The following areas must be addressed during forensic monitoring if water diversion, feral pig activity, or trespass activity are causing or threatening to cause impacts to water quality.

Water Diversion: The Discharger is required to monitor the water diversion point(s) for total daily water usage when water is being diverted. The Discharger is required to monitor the creek to ensure no more than 10% of the creek flow is diverted.

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² The Discharger is required to monitor turbidity consistent with the requirements in the document Central Coast Regional Water Quality Control Board, Timber Harvest Program, Standard Operating Procedures for In-stream Turbidity Monitoring (October 2006) (attached in Exhibit 1).

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County Code Harvest Plan Name

Feral Pig Activity: During any inspection, the Discharger is required to document all evidence of feral pig activity near watercourses that may be contributing discharges to waters of the state. The Discharger must address the feral pig activity according to forensic monitoring requirements described in 1 – 5 above.

Trespass Activity: During any inspection, the Discharger is required to document all evidence of trespass activity near watercourses that may be contributing discharges to waters of the state. The Discharger must address the trespass activity according to forensic monitoring requirements described in 1 – 5 above.

FORENSIC MONITORING FREQUENCY: The frequency of Forensic Monitoring is coincident with implementation and effectiveness monitoring, or at any time a failed management measure and/or discharge is reported or observed.

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SECTION II - DATA LOGGING AND REPORTING

LOGBOOKS: The Discharger is required to maintain logbooks for recording all visual and water analysis data. Logbooks are required to include documentation of maintenance and repair of management practices. These logbooks must be available for inspection to the Water Board staff.

HEALTH AND SAFETY: The Discharger is responsible for ensuring that all monitoring is done in a safe manner. If any monitoring point is too dangerous to sample, then the Discharger is required to report this circumstance to the Water Board within 48 hours.

SEDIMENT RELEASE REPORTING: The Discharger is required to report to the Water Board within 72 hours whenever at least one cubic yard of soil is released to a waterway due to anthropogenic causes or at least five cubic yards of soil is released to a waterway due to natural causes, or when turbidity is noticeably greater downstream compared to upstream (of a crossing or the Plan area). The Discharger is required to submit a written report to the Water Board within 10 days of detection. The Discharger is required to investigate source areas of sediment. If sources are found, the Discharger will locate and document the source and size of the release. If sources related to timber harvest activities are found, the Discharger is required to immediately correct the source if possible, or schedule corrective action at an appropriate time given the site conditions.

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VIOLATION REPORTING: The Discharger is required to report any violation of the Forest Practice Rules, to the Water Board within 72 hours. The Discharger is required to provide the report in writing to the Water Board within 10 working days of the violation. The written report must include photo documentation and water quality data (if discharge enters waters of the state) before and after remedial action. Upon review of the report, the Water Board's Executive Officer will determine completeness of the report and the need for additional actions necessary for the protection of water quality and beneficial uses. The Discharger is required to complete any additional monitoring the Water Board's Executive Officer determines is necessary.

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ANNUAL REPORTING: By November 15 of each year, the Discharger is required to submit an Annual Report to the Water Board. The reporting period is from October 1 of the previous year to September 30 of the current year. Annual report templates are available upon request or may be downloaded from the Central Coast Water Board's website.

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Annual Reporting Requirements

General

- ❖ The name and address of the person submitting the report, as well as the day, month, and year in which the report is being submitted, at the top of the first page.
- ❖ The subject line of the annual report must state the THP or NTMP number, three-letter county code, plan name as it appears in the approved THP or NTMP, NTO number, and specific units within the THP or NTMP that have been enrolled under the General Waiver.
- ❖ Time period during which the data was collected.
- ❖ List Tier level and summarize the monitoring requirements.
- ❖ A status of active timber harvest operations including:
 - Day, month, and year the harvest opened and closed for the season.
 - Previous year activities (types of activities, locations, percent harvested, area of harvest, and extent of overall plan completion)
 - Planned activities including estimated month and year harvests activities must resume.
 - Estimated month and year harvesting will be completed.
 - Wet weather problems observed.
 - Any other critical information.
- ❖ A summary of all violations. If there were no violations, please state it as such.
- ❖ Detailed documentation of rainfall measurement procedures and locations or a reference to the page number in the THP or NTMP where this is described. Describe the type of rain gauge(s) used. If applicable include the link to the Web site where data for the rain gauge may be viewed.
- ❖ Recommendations for improving the monitoring and reporting program.

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Deleted: ¶ Under "Monitoring and Reporting" click on "Annual Report Template." In addition to the reporting requirements already set forth in the MRP, the annual report must include each of the following⁴.¶

Visual Monitoring

- ❖ A summary of all visual monitoring activities performed during the previous year.
 - Summary must include dates and times visual monitoring occurred and any corrective actions taken during inspections.
 - Attach inspection forms or copies of logbook pages detailing inspections.

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Photo-monitoring (if required)

- ❖ Submittal of all data and photos in electronic format.
 - Photo files must be named using the following format with information separated by underscores:

MonitoringReportYear PlanNumberandCountyCode Location DateofPhoto

Turbidity Monitoring (if required)

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- ❖ A detailed map with the following specifications:
 - In color (if possible).
 - Title stating: "Water Quality Monitoring Locations for THP OR NTMP No. XXXX"
 - All monitoring locations and routes clearly marked with unique site identification tags.
 - A Key or Legend identifying all monitoring locations and routes.
 - North Arrow.
 - Scale
- ❖ A summary of the water quality monitoring performed during the previous year. Any monitoring described in the summary must also include an electronic submittal of the data in a format compatible with Microsoft Excel.
- ❖ Completed Field Data Sheet with data from all monitoring events. (if more than four events, there is no need to complete top section on additional pages).
- ❖ Make and model of turbidimeter being used.
 - Copy of the manufacture's protocol / recommendation for proper use of the turbidimeter.
- ❖ A summary of all turbidity monitoring activities performed during the previous year.
- ❖ Completed Field Data Sheet with data from all monitoring events. (if more than four events, there is no need to complete top section on additional pages)

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 <#>Title stating: "Water Quality Monitoring Locations for THP No. XXXX"
 <#>All monitoring locations and routes clearly marked with unique site identification tags.
 <#>A Key or Legend identifying all monitoring locations and routes.
 <#>North Arrow.
 <#>Scale

Visual Monitoring

<#>A summary of all visual monitoring activities performed during the previous year.
 <#>Summary must include dates and times visual monitoring occurred and any corrective actions taken during inspections.
 <#>Attach inspection forms or copies of logbook pages detailing inspections.

Photo-monitoring (if required)

<#>Submittal of all data and photos in electronic format.

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Turbidity Monitoring (if required)

<#>All data submitted in an electronic format compatible with Microsoft Excel.

Continuous Temperature Monitoring (if required)

- ❖ All data submitted in an electronic format compatible with Microsoft Excel.
- ❖ Make and model of the data loggers being used at each monitoring location.
 - Copy of the manufacture's protocol / recommendation for proper use of the loggers.
- ❖ Calibration check form for each data logger.
- ❖ Description of any modifications or adjustments made based on the calibration checks and field observations.

SECTION III - STANDARD PROVISIONS

1. The Water Board shall be allowed:
 - a. Entry upon premises where timber harvest activities occur;
 - b. Access to copy any records that must be kept under the conditions of these requirements;
 - c. To inspect any timber harvest activity, equipment (including monitoring and control equipment), practices, or operations regulated or required under these requirements; and,
 - d. To photograph, sample, and monitor for the purpose of showing timber harvest requirements compliance.

2. The Discharger is required to maintain records of all monitoring information and results. Records must be maintained for a minimum of three years after the MRP is rescinded. This period may be extended during the course of any unresolved litigation or when requested by the Water Board.

3. Any person signing a report makes the following certification whether written or implied:

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

The Water Board's Executive Officer may modify or rescind this Monitoring and Reporting Program at any time, or may modify or rescind the monitoring and reporting program as to a specific Discharger. Any such modification or rescission must comply with California Water Code section 13269 or 13267.

Roger W. Briggs, Executive Officer

Date

Exhibits:

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County Code Harvest Plan Name

Exhibit 1

Eligibility Criteria

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Copy of the Timber Harvest Plan
Information Form and Fact Sheet

Standard Operating Procedure 5.2.3 Photo Documentation Procedure

Standard Operating Procedures Continuous Temperature Monitoring

Standard Operating Procedures In-stream Turbidity Monitoring

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Monitoring Locations
Exhibit 3 -
Big Creek Road Inventory Program

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Visual monitoring points must be at locations within the timber harvest plan area where timber harvest activities have the greatest risk of potential discharge (sites may be established by the Water Board's Executive Officer during or after the pre-harvest inspection).

The Discharger is required to perform visual monitoring within 12 to 24 hours of storm events of two inches of rain or greater within a 24-hour period.

PHOTO-MONITORING

PHOTO-MONITORING POINTS: Photo-monitoring points shall be at locations within the timber harvest plan area where timber harvest activities have the greatest risk of potential discharge (sites may be established by the Water Board's Executive Officer during or after the pre-harvest inspection). Photo-monitoring points must include **sites** up and down stream of each newly constructed or reconstructed Class I and Class II watercourse crossings and landings within a Class I or II Watercourse or Lake Protection Zone (WLPZ). Monitoring photos need to be of sufficient quality to record the effectiveness of the implemented management practice.

The Discharger must:

Utilize the attached document titled "Standard Operation Procedure 5.2.3 - Photo Documentation Procedure" (including any subsequent revisions to SOP 5.2.3) as the protocol for all photo-monitoring (attached in Exhibit 3).

Utilize flagging, rebar, or another method of establishing the photo-monitoring point site locations.

Utilize all photo-monitoring point locations until this Monitoring and Reporting Program is revised or rescinded.

PHOTO-MONITORING FREQUENCY: The Discharger is required to monitor all photo-monitoring points established by the Water Board's Executive Officer during or after the pre-harvest inspection.

"Year One" - You are required to photo-monitor according to the following four conditions during "Year One" monitoring.

Prior to the onset of timber harvest operations as baseline monitoring. (One Photo Set)

Following the first significant storm event (First Storm) (One Photo Set).

Following completion of timber harvest activities (One Photo Set).

Following a significant storm event during the month of April (April Storm) (One Photo Set). A significant storm event means any storm with two inches of rain or greater within a 24-hour period and soil saturation (i.e., soil saturation typically

occurs after a minimum of four inches of precipitation after the start of the winter period on October 15).

Additionally, the Discharger shall photograph new or reconstructed Class I and Class II water crossings:

Before construction begins, after construction is completed, and after the crossing structure is removed (if crossing is temporary).

The Discharger is required to conduct photo-monitoring within seven days of all of the following:

The first storm.

Completion of timber harvest activities.

April storm events. If no significant storm event occurs in the month of April, the Discharger must complete photo-monitoring by April 30 of the same year.

Years Two and Five - In years two and five, following completion of timber harvest operations and a determination by the Water Board's Executive Officer that implemented management practices are functioning to protect water quality and beneficial uses (as documented by information contained in the annual report and a post-harvest inspection conducted by Water Board staff), the Discharger must conduct the April storm photo-monitoring.

It is your responsibility to schedule a post-harvest inspection with Water Board staff. You may call to schedule an inspection no sooner than 10 months after the timber harvest plan is complete.

Important Note: The Discharger may not begin Year Two monitoring until directed to do so in writing by the Water Board's Executive Officer.

If implemented management practices are not adequately protecting water quality and beneficial uses, as determined by the Water Board's Executive Officer, the Discharger must repeat "Year One" monitoring. In addition to supplementary monitoring, the Water Board's Executive Officer will determine additional management measure implementation required.

Summary of Photo-monitoring Frequency:

"Year One": 2 photo sets (minimum)

Year Two: 1 photo set

Year Five: 1 photo set

Procedures for Continuous Temperature Monitoring (April 2006) (attached in Exhibit 3) during the months of May 1 through October 15. Monitoring sites will be established by the Water Board's Executive Officer during or after the pre-harvest inspection. Continuous water temperature monitoring is required.

If no Class I watercourse exists on the parcel where timber harvest activities occur, and there is water in the Class II during the months of May 1 through October 15, the Discharger is required to conduct temperature monitoring in the Class II watercourse.

TEMPERATURE MONITORING FREQUENCY: The Discharger is required to monitor all temperature monitoring points.

"Year One" - The Discharger is required to program data loggers to record point measurements every hour during the months of May 1 through October 15 at all established temperature monitoring points.

Years Two and Five - In years two and five, following completion of timber harvest operations and a determination by the Water Board's Executive Officer (as documented by information contained in the annual report and a post-harvest inspection conducted by Water Board staff) that implemented management practices are functioning to protect water quality and beneficial uses, the Discharger is required to program data loggers to record point measurements every hour during the months of May 1 through October 15 at all established temperature monitoring points.

It is your responsibility to schedule a post-harvest inspection with Water Board staff. You may call to schedule an inspection no sooner than 10 months after the timber harvest plan is complete.

Important Note: The Discharger may not begin Year Two monitoring until directed to do so in writing by the Water Board's Executive Officer.

If implemented management practices are not adequately protecting water quality and beneficial uses, as determined by the Water Board's Executive Officer, the Discharger shall **repeat "Year One" monitoring**. In addition to supplementary monitoring, the Water Board's Executive Officer will specify any additional required management measures.

Summary of Temperature Data Sets:

Year One: 1 data set
Year Two: 1 data set
Year Five: 1 data set

The Discharger is required to monitor all newly constructed or reconstructed Class I and II crossings within the timber harvest plan area in place after October 15 for turbidity (a hand held turbidimeter is acceptable for this purpose). The Discharger is required to measure turbidity approximately 25 feet upstream and downstream of all newly constructed or reconstructed Class I and II road crossings or combination of sites if there is close site proximity (sites may be established by the Water Board's Executive Officer during or after the pre-harvest inspection). The Water Board's Executive Officer may require turbidity monitoring if no newly constructed or reconstructed crossings exist within a proposed timber harvest plan and the plan has activity within a Class I or II WLPZ.

TURBIDITY MONITORING FREQUENCY: The Discharger is required to monitor turbidity within 12 hours of a storm event which yields two inches or more of rain within a 24-hour period. If a qualifying storm terminates or two inches is reached between the hours of 3:00 pm (1500 hour) and 9:00 pm (2100 hour) you are required to conduct turbidity monitoring within 18 hours.

Year One You are required to monitor a minimum of three times over each 12 months during Year One monitoring.

Monitoring Event One:

The Discharger is required to perform the first monitoring event within 12 hours of the first storm event that yields two inches of rain or greater within a 24 hour period.

Monitoring Events Two and Three:

The Discharger is required to perform the next two monitoring events within 12 hours of the next two storm events (one monitoring event each storm) that include two inches of rain or greater within a 24 hour period and soil saturation after the start of the winter period on October 15.

Years Two through Five - In years two through five, following completion of timber harvest operations and a determination by the Water Board's Executive Officer (as documented by information contained in the annual report and a post-harvest inspection conducted by Water Board staff) that implemented management practices are functioning to protect water quality and beneficial uses, the Discharger is required to conduct turbidity monitoring based on need as determined by forensic monitoring.

It is the Discharger's responsibility to schedule a post-harvest inspection with Water Board staff. You may call to schedule an inspection no sooner than 10 months after the timber harvest plan is complete.

Important Note: The Discharger may not begin Year Two monitoring until directed to in writing by the Water Board's Executive Officer.

If implemented management practices are not adequately protecting water quality and beneficial uses, as determined by the Water Board's Executive Officer, the Discharger will be required to **repeat "Year One" monitoring**. In addition to supplementary monitoring, the Water Board's Executive Officer will specify additional required management measures.

Summary of Turbidity Data Sets:

Year One: 1 data set (minimum of three events)
Years Two through Five: as needed based on forensic monitoring.

Exhibit 1

Eligibility Criteria

**Standard Operating Procedure 5.2.3
Photo Documentation Procedure**

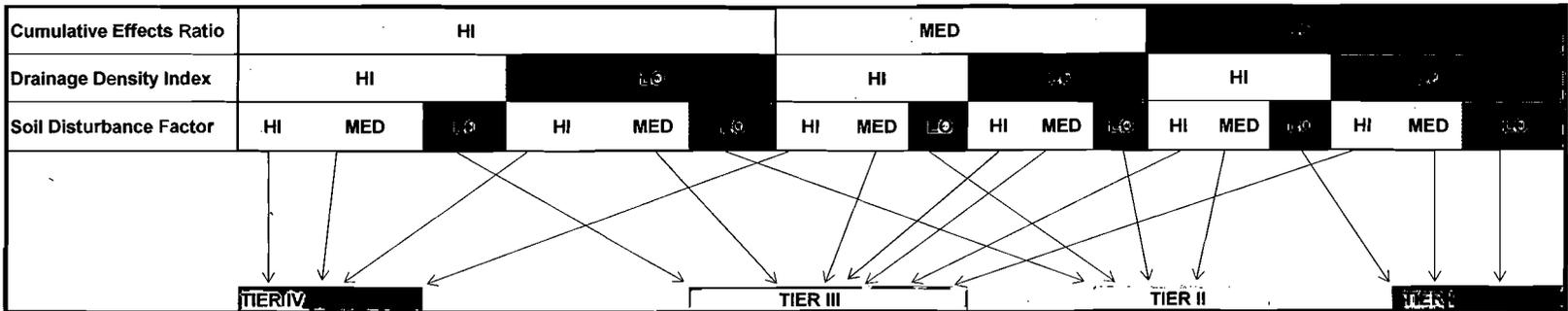
**Standard Operating Procedures
Continuous Temperature Monitoring**

**Standard Operating Procedures
Instream Turbidity Monitoring**

Eligibility Criteria

Plan No.:	
Plan Name:	

Regulatory and Monitoring Requirement Decision Tool



Regulatory Option	Individual WDR or Waiver	General Conditional Waiver for Timber Operations
Monitoring Requirements	Individual Monitoring	<p>Tier III Monitoring Requirements include water column monitoring for temperature and turbidity, visual and photo monitoring of timber harvest area infrastructure, CDF Forest Practice Rules compliance monitoring, road inventory program, and forensic monitoring as necessary. Tier III monitoring is automatically required if ground based equipment is used off of an all-weather road during the period October 15 - May 1.</p> <p>Tier II Monitoring Requirements include visual and photo monitoring of timber harvest area infrastructure, CDF Forest Practice Rules compliance monitoring, road inventory program, and forensic monitoring as necessary.</p> <p>Tier I Monitoring Requirements include CDF Forest Practice Rules compliance monitoring, road inventory program, and forensic monitoring as necessary.</p>

	High	Med	Low
Cumulative Effects Ratio	>15%	15% to 10%	≤10%
Drainage Density Index	>100		≤100
Soil Disturbance Factor	>2500	2500 to 1000	≤1000

Final		Winter Operations Not Proposed

Plan No.:	
Plan Name:	

Cumulative Effects Ratio

Is the proposed harvest in a 303(d) listed watershed? **	Acres Proposed for Harvest or Harvested in Planning Watershed (CalWater) in last fifteen years*		Acres to be harvested as part of proposed THP/NTMP		Total Acres in Planning Watershed		CER
				Sum			
			0	0			#DIV/0!

* Include all acreage in proposed and approved THPs/NTMPs

** Watershed 303d listed as impaired from sediment or temperature?

If yes type "yes" or leave blank.

Plan No.:	
Plan Name:	

Drainage Density Index					
ft. of Class I	ft. of Class II	ft. of Class III	Corrected Sum	Plan Area (ac)	DDI
			0	0	

Standard Operating Procedure 5.2.3

Photo Documentation Procedure

Introduction:

Photographs provide a qualitative, and potentially semi-quantitative, record of conditions in a watershed or on a water body. Photographs can be used to document general conditions on a reach of a stream during a stream walk, pollution events or other impacts, assess resource conditions over time, or can be used to document temporal progress for restoration efforts or other projects designed to benefit water quality. Photographic technology is available to anyone and it does not require a large degree of training or expensive equipment. Photos can be used in reports, presentations, or uploaded onto a computer website or GIS program. This approach is useful in providing a visual portrait of water resources to those who may never have the opportunity to actually visit a monitoring site.

Equipment:

Use the same camera to the extent possible for each photo throughout the duration of the project. Either 35 mm color or digital color cameras are recommended, accompanied by a telephoto lens. If you must change cameras during the program, replace the original camera with a similar one comparable in terms of media (digital vs. 35 mm) and other characteristics. A complete equipment list is suggested as follows:

Required:

- Camera and backup camera
- Folder with copies of previous photos (do not carry original photos in the field)
- Topographic and/or road map
- Aerial photos if available
- Compass
- Timepiece
- Extra film or digital disk capacity (whichever is applicable)
- Extra batteries for camera (if applicable)
- Photo-log data sheets or, alternatively, a bound notebook dedicated to the project.
- Yellow photo sign form and black marker, or, alternatively, a small black board and chalk

Optional:

- GPS unit
- Stadia rod (for scale on landscape shots)
- Ruler (for scale on close up views of streams and vegetation)

Some safety concerns that may be encountered during the survey include, but are not limited to:

- Inclement weather
- Flood conditions, fast flowing water, or very cold water
- Poisonous plants (e.g.: poison oak)
- Dangerous insects and animals (e.g.: bees, rattlesnakes, range animals such as cattle, etc.)
- Harmful or hazardous trash (e.g.: broken glass, hypodermic needles, human feces)

We recommend that the volunteer coordinator or leader discuss the potential hazards with all volunteers prior to any fieldwork.

General Instructions:

From the inception of any photo documentation project until it is completed, always take each photo from the same position (photo point), and at the same bearing and vertical angle at that photo point. Photo point positions should be thoroughly documented, including photographs taken of the photo point. Refer to copies of previous photos when arriving at the photo point. Try to maintain a level (horizontal) camera view unless the terrain is sloped. (If the photo can not be horizontal due to the slope, then record the angle for that photo.) When photo points are first being selected, consider the type of project (meadow or stream restoration, vegetation management for fire control, ambient or event monitoring as part of a stream walk, etc.) and refer to the guidance listed on *Suggestions for Photo Points by Type of Project*.

When taking photographs, try to include landscape features that are unlikely to change over several years (buildings, other structures, and landscape features such as peaks, rock outcrops, large trees, etc.) so that repeat photos will be easy to position. Lighting is, of course, a key ingredient so give consideration to the angle of light, cloud cover, background, shadows, and contrasts. Close view photographs taken from the north (i.e., facing south) will minimize shadows. Medium and long view photos are best shot with the sun at the photographer's back. Some artistic expression is encouraged as some photos may be used on websites and in slide shows (early morning and late evening shots may be useful for this purpose). Seasonal changes can be used to advantage as foliage, stream flow, cloud cover, and site access fluctuate. It is often important to include a ruler, stadia rod, person, farm animal, or automobile in photos to convey the scale of the image. Of particular concern is the angle from which the photo is taken. Oftentimes an overhead or elevated shot from a bridge, cliff, peak, tree, etc. will be instrumental in conveying the full dimensions of the project. Of most importance overall, however, is being aware of the goal(s) of the project and capturing images that clearly demonstrate progress towards achieving those goal(s). Again, reference to *Suggestions for Photo Points by Type of Project* may be helpful.

If possible, try to include a black board or yellow photo sign in the view, marked at a minimum with the location, subject, time and date of the photograph. A blank photo sign form is included in this document.

marker post) then have an alternate method (map, aerial photo, copy of an original photograph of the photo-point, etc).

2. Select an existing structure or landmark (mailbox, telephone pole, benchmark, large rock, etc.), identify its latitude and longitude, and choose (and record for future use) the permanent position of the photographer relative to that landmark. Alternatively, choose the procedure described in *Monitoring California's Annual Rangeland Vegetation* (UC/DANR Leaflet 21486, Dec. 1990). This procedure involves placing a permanently marked steel fence post to establish the position of the photographer.
3. For restoration, fuel reduction, and BMP projects, photograph the photo-points and carry copies of those photographs on subsequent field visits.

Determining the Compass Bearing:

1. Select and record the permanent magnetic bearing of the photo center view. You can also record the true compass bearing (corrected for declination) but do not substitute this for the magnetic bearing. Include a prominent landmark in a set position within the view. If possible, have an assistant stand at a fixed distance from both the photographer and the center of the view, holding a stadia rod if available, within the view of the camera; preferably position the stadia rod on one established, consistent side of the view for each photo (right or left side).
2. Alternatively, use the procedure described in *Monitoring California's Annual Rangeland Vegetation* (UC/DANR Leaflet 21486, Dec. 1990). This procedure involves placing a permanently marked steel fence post to establish the position of the focal point (photo center).
3. When performing ambient or event photo monitoring, and when a compass is not available, then refer to a map and record the approximate bearing as north, south, east or west.

Suggestions for Photo Points by Type of Project:

Ambient or Event Monitoring, Including Photography Associated with Narrative Visual Assessments:

1. When first beginning an ambient monitoring program take representative long and/or medium view photos of stream reaches and segments of shoreline being monitored. Show the positions of these photos on a map, preferably on the stream/shore walk form. Subjects to be photographed include a representative view of the stream or shore condition at the beginning and ending positions of the segment being monitored, storm drain outfalls, confluence of tributaries, structures (e.g., bridges, dams, pipelines, etc.).
2. If possible, take a close view photograph of the substrate (streambed), algae, or submerged aquatic vegetation.

4. Long view and medium view of streambed changes (thalweg, gravel, meanders, etc.)
5. Medium and close views of structures, plantings, etc. intended to induce these changes.
6. Optional: Use a tape set perpendicular across the stream channel at fixed points and include this tape in your photos described in 3 and 4 above. For specific procedures refer to Harrelson, Cheryl C., C.L. Rawlins, and John P. Potyondy, *Stream Channel Reference Sites: An Illustrated Guide to Field Techniques*, United States Department of Agriculture, Forest Service, Rocky Mountain Forest and Range Experiment Station, General Technical Report RM-245.

Vegetation Management for Fire Prevention ("fuel reduction"):

1. Aerial view (satellite or airplane photography) if available.
2. In the absence of an aerial view, a landscape, long view showing all or representative sections of the project (bluff, bridge, etc.)
3. Long view (wide angle if possible) showing the project area or areas. Preferably these long views should be from an elevated vantage point.
4. Medium view photos showing examples of vegetation changes, and plantings if included in the project. It is recommended that a person (preferably holding a stadia rod) be included in the view for scale
5. To the extent possible include medium and long view photos that include adjacent stream channels.

Stream-Sediment Load or Erosion Monitoring:

1. Long views from bridge or other elevated position.
2. Medium views of bars and banks, with a person (preferably holding a stadia rod) in view for scale.
3. Close views of streambed with ruler or other common object in the view for scale.
4. Time series: Photograph during the dry season (low flow) once per year or after a significant flood event when streambed is visible. The flood events may be episodic in the south and seasonal in the north.



Timber Harvest Program
Standard Operating Procedures
Continuous Temperature Monitoring

April 2006

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Purpose

This document provides standard operating procedures for continuous temperature monitoring on forest streams pursuant to the General Conditional Waiver of Waste Discharge Requirements – Timber Harvest Activities in the Central Coast Region (General Waiver). These procedures, when followed correctly, will support the collection of continuous temperature data. The data will be used for trend analysis and to determine compliance with Monitoring and Reporting Program R3-2005-0066.

Monitoring Season

Monitoring shall begin at the onset of timber harvest operations (i.e. tree falling, yarding, and / or roadwork, etc.) and shall be consistent with the Monitoring and Reporting Program (MRP), any conditions set forth within the waiver or waste discharge requirements, and the procedures outlined in this document. Monitoring shall continue as specified in the MRP until it is revised or rescinded.

Continuous Temperature Monitoring occurs for the five and a half month period starting May 1 and ending October 15, at all temperature monitoring locations established in the MRP. If a site becomes dry at any point during the monitoring season, the logger shall be relocated further downstream where monitoring can continue. Relocation of the logger must be documented.

If timber harvest operations commence during the period of October 16 through April 30, temperature monitoring shall begin the subsequent May 1. If timber harvest operations commence during the period of May 1 through October 15, temperature monitoring shall begin and continue the day operations begin until October 15 of that same year. Temperature monitoring shall then continue in the subsequent years as prescribed in the MRP.

Calibration Checks

Calibration checks shall be conducted on the data loggers at three separate times during the monitoring season: 1) prior to logger deployment 2) at mid-season data collection 3) at the end of the monitoring season. Calibration check One shall be conducted as described for the two bath tests (below). Calibration checks Two and Three will be conducted against a stream temperature thermometer¹ reading in the field, as described in the mid-season data collection and logger calibration section. Calibration checks are used to document logger performance and accuracy. This provides assurance of the quality of data being collected and reported. Calibration events Two and Three shall occur shortly after sampling results have been downloaded and backed up. Always download data according to the manufacture's instructions. Results of the calibrations must be documented on the calibration check form,² the form must be kept with your logbook.

The following bath tests shall be conducted at least once per year, prior to deployment of your logger for the monitoring season, to determine its accuracy. Each logger shall be assigned a unique temperature logger ID number. The calibration check form shall include fields to record the calibration check results for each data logger. The loggers, utilized for continuous temperature monitoring must be specified for full submersion, outdoor freshwater stream temperature monitoring. The logger must also be designed to withstand the environmental conditions it will be subjected to over the full duration of the monitoring season.

¹ All references to a thermometer in this document call for the use of a Certified Reference Thermometer or one certified by the National Institute of Standards and Technology that is designed for total immersion.

² Available at the Water Board's website or upon request to Water Board staff.

Data Logger Ice Bath

This test will allow you to determine the accuracy of your data logger at its lower range.

Place crushed ice in an insulated container that is large enough to hold the loggers that you are testing. It is important to crush the ice to maintain as consistent and uniform a temperature as possible. Fill the container with water to just below the level of the ice and stir the mixture around. Submerge the loggers that you are testing. Place the entire container in a refrigerator to minimize temperature gradients. Allow enough time for the logger to acclimate; at least ten minutes. The ice will melt slowly, so the actual temperature should settle around 0°C if the ice bath was prepared correctly. Place a thermometer in the bath to confirm the temperature against your logger's reading. Allow the logger to collect at least five readings before removing it from the bath. Check the reading of your logger to confirm that the five readings are within the acceptable accuracy range reported by the manufacturer at 0°C. Record the calibration check on your calibration check form.

Room Temperature Bath

This test will allow you to determine the accuracy of your data logger at its higher range.

Fill an insulated container that is large enough to hold the loggers that you are testing with water. Place the open container in a room overnight that has constant air temperature at the higher end of the loggers temperature range. Submerge the loggers that you are testing. Allow enough time for the logger to acclimate; at least ten minutes. Place a thermometer in the bath to confirm the temperature against your logger's reading. Allow the logger to collect at least five readings before removing it from the bath. Check the reading of your logger to confirm that the five readings are within the acceptable accuracy range reported by the manufacturer at the upper end of the loggers temperature range. Record the calibration check on your calibration check form.

Note: Water used to make the ice and fill the containers for the bath tests may be tap water or bottled water. Salt water may not be used.

Deployment Procedure

All loggers must be deployed at the temperature monitoring locations identified in your MRP. Only those loggers that pass the calibration check requirements may be programmed for deployment. Prior to deployment, follow the manufacture's instructions for programming the logger for a delayed start and set the logger to record point measurements every hour. All loggers and other monitoring equipment should be kept clean, stored in protective cases during transportation, and protected from extreme temperatures. Prior to programming the temperature logger, both the computer clock and the watch used to record deployment times shall be synchronized. You must also confirm that the date and time modes of the logger are functioning properly.

During the deployment process, all field data including station number, station name, temperature logger ID numbers, and calibration results must be recorded. All monitoring stations must have a unique site identification number and / or name. A sketch and description of the logger locations that notes a landmark reference point, such as a unique rock, log, root, or tree should also be recorded. In addition, a picture of the water temperature logger location including a landmark should be taken to help relocate the logger in the future.

The most important aspect of logger deployment is to find a location in the stream that is safe to get to and where representative stream temperature data may be obtained during lower flows. The logger should be placed to avoid direct sunlight. In small streams, loggers should be installed as close to the thalweg³ as possible and six inches off the stream bottom. In large streams, areas of potential temperature stratification (resulting from eddies, groundwater, and tributaries) need to be avoided. In addition, placing the logger in a 2 –2 ½ foot deep location downstream or alongside a landmark rock or streambed feature improves the chance of it staying submerged during its deployment period and being located for retrieval.

When placing the logger at the sampling point, you must find a method to secure the logger in place for the duration of the monitoring season. Secure a waterproof business card to the logger in a manner that will not inhibit the collection of data. This provides an opportunity for the logger (and the data) to be returned in the event the logger is lost. If the logger will be placed in an area subject to vandalism, you must make accommodations to prevent vandalism. Most manufacturers sell products that can camouflage the logger without disrupting its data collection.

Mid-season Data Collection and Logger Calibration

For the safety of the data, data logger manufacturers recommend that a logger never be deployed for longer than a three-month period. Mid-season data collection and logger calibration will decrease the chances of losing a full season of temperature data for any one monitoring point. Mid-season data collection and logger calibration shall occur within the last two weeks in July or first two weeks in August. This mid-season check can either be conducted in the field or the loggers may be taken back to the lab for data collection and analysis. Loggers removed from the field to perform the mid-season calibration check must be returned to their monitoring station within four days.

Upon inspection of the site, look for signs of physical disruption of channel conditions; inspect the logger for fouling, corrosion, or damage; perform a battery or power check; clean or service the sensor as needed; and calibrate the logger as described below.⁴

To conduct the mid-season data collection and logger calibration you must begin by checking the stream temperature with a thermometer. Place the thermometer next to the

³ The line defining the lowest points along the length of a riverbed or valley.

⁴ This inspection regime must be repeated when the logger is removed from the field at the end of the monitoring season.

data loggers long enough for it to acclimate and then take the temperature reading. Record the thermometer's temperature reading on the calibration check form. After recording the temperature readings from the thermometer in the stream, remove the data loggers from the stream and download the data either onto a laptop in the field or on your computer in the lab. Check the reading of your logger to confirm that the reading is within the acceptable accuracy range presented by the manufacturer. Any loggers not reading within an acceptable range, found to be damaged, missing, or destroyed, must be replaced immediately with a logger that meets the specifications per these procedures. Spare loggers should be kept on hand for this purpose. Document all findings from the mid-season data collection and logger calibration on the calibration check form.

Reporting Requirements

By November 15 of each year, you must submit an Annual Report to the Central Coast Water Board per the requirements in your MRP. When reporting the temperature data you must include:

- ❖ A summary of the water quality monitoring performed during the previous year.
- ❖ A detailed map with all monitoring locations clearly marked with unique site identification tags.⁵
- ❖ All data submitted electronically in excel format.
- ❖ Make and model of the data loggers being used at each monitoring location.
 - Copy of the manufacture's protocol / recommendation for proper use of the loggers.
- ❖ Calibration check form for each data logger.
- ❖ Description of any modifications or adjustments made based on the calibration checks and field observations.

⁵ The map needs to be submitted once unless monitoring station locations are modified. In the future a map with unique monitoring site tags shall be submitted with the Timber Harvest Information Form and Fact Sheet.

Literature Consulted

Quick Accuracy Check Copyright © 1996-2004 Onset Computer Corporation
<http://www.onsetcomp.com/Support/HS_Support/5317_acc_test.html>

Schuett-Hames D., A.E. Pleus, E. Rashin, and J. Matthews. 1999. *TFW Monitoring Program method manual for the Stream Temperature Survey*. Prepared for the Washington State Department of Natural Resources under the Timber Fish and Wildlife Agreement, Olympia, WA. TFW-AM9-999005. DNR # 107. June

Wagner Richard J., Harold C. Mattraw, George F. Ritz, and Brett A. Smith. 2000. *Guidelines and Standard Procedures for Continuous Water-Quality Monitors: Site Selection, Field Operation, Calibration, Record Computation, and Reporting*. U.S. Geological Survey, Water-Resources Investigations Report 00-4252. Reston, Virginia.

Ward, William J. *Continuous Temperature Sampling Protocols for the Environmental Monitoring and Trends Section*. 2003. Washington State Department of Ecology. Olympia, WA. Publication No. 03-03-052. December.



Timber Harvest Program

Standard Operating Procedures for Instream Turbidity Monitoring

October 2006

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Purpose

This document provides standard operating procedures for instream turbidity monitoring on forest streams pursuant to the General Conditional Waiver of Waste Discharge Requirements – Timber Harvest Activities in the Central Coast Region (General Waiver). These procedures, when followed correctly, will support the collection of turbidity grab samples or insitu probe measurement data. The data will be used for trend analysis and to determine compliance with Monitoring and Reporting Program R3-2005-0066.

Throughout this document "the discharger" means the landowner and anyone working on behalf of the landowner in the conduct of timber harvest activities including monitoring.

Timing: Monitoring Season

Monitoring shall begin at the onset of timber harvest operations (i.e. tree falling, yarding, and / or roadwork, etc.) and shall be consistent with the Monitoring and Reporting Program (MRP), any conditions set forth within the General Waiver or Waste Discharge Requirements, and the procedures outlined in this document. The turbidity monitoring season begins on or after October 15 as specified in the MRP. You are required to conduct forensic monitoring throughout the entire year as necessary. Monitoring shall continue as specified in the MRP until it is revised or rescinded.

Monitoring Triggers: Rainfall Information

Monitoring events¹ are triggered by rainfall events as prescribed in the MRP and as necessary according to forensic monitoring requirements.

The discharger shall document when and where rainfall data was obtained for each monitoring event on the Timber Harvest Turbidity Monitoring Field Data Sheet (Data Sheet). The Data Sheet may be downloaded from the website at: http://www.waterboards.ca.gov/centralcoast/Facilities/Timber_Harvest/index.htm and then click on "turbidity." Hard copies of the data sheet are available upon request.

Rain gauges used shall represent precipitation at the harvest site as closely as possible. Compare rain gauge readings at the site to published gauges whenever possible.

Locations: Monitoring Sites

Turbidity sampling shall occur at monitoring locations specified in the MRP or identified during forensic monitoring. Identify the monitoring locations for each harvest at the top of the Data Sheet and include the latitude and longitude of the location in North American Datum of 1983 (NAD83) (i.e. decimal degree format dd.ddddd). Latitude and longitude are available at the www.topozone.com website.

Equipment: Turbidimeter / Turbidity Probe

The MRP specifies that a handheld turbidimeter is acceptable for the purposes of measuring instream turbidity. A handheld turbidimeter is either field equipment, equipped with a probe that takes direct turbidity readings from the watercourse, or bench top laboratory equipment that takes a turbidity reading from a sample

¹ A monitoring event is defined as all the turbidity samples or readings taken during the same storm event.

already collected from the monitoring location. Some models of the bench top style turbidimeter are designed to be taken into the field.

Whether a bench top turbidimeter or probe is used, the equipment must report turbidity levels in Nephelometric Turbidity Units (NTUs) and be able to read within a scale of at least 0 – 1,000. Each piece of equipment must be assigned a unique equipment identification number.

Calibration and Accuracy Checks

Turbidity equipment (probe or bench top turbidimeter) must be calibrated within twenty-four hours prior to each sampling event using standard reference materials and following the manufactures instructions. Calibration must include at least two calibration points that are intended to bracket the expected conditions in the field. Calibration data must be recorded on the data sheet and include the equipment identification number, date and time, result prior to calibration, value of calibration standard, and result following calibration.

An accuracy check must be preformed on the turbidity equipment within 24 hours following each sampling event. Accuracy check must include the same calibration points and certified reference materials as were used in the pre sampling calibration. If the readings are not within 5% of the standard value for any of the ranges, the probe or bench top turbidimeter must be recalibrated. Accuracy check data must be recorded on the data sheet and include equipment identification number, date and time, accuracy check result, and value of calibration standard.

Field Collection Procedures

Take turbidity reading with the probe or collect the grab sample away from the stream bank in the main current in a location that best represents the water column. An optimal location would be in a relatively straight reach that is well mixed, with uniform hydraulics, and away from turbulence. Never sample stagnant water.

When wading² to the site try not to disturb bottom sediment. Be careful not to take a turbidity reading or collect water that has sediment from bottom disturbance. Mark the site with flagging, photo-documentation, or other method to ensure that subsequent sampling occurs at the same location.

Probe

The discharger must take a turbidity reading using a probe that has been cleaned according to the manufacture's specifications or collect the sample using a clean sample container.

² A small clean container, such as a bucket, attached to a long handle may be used to collect a sample from a stream if direct access to the bank is difficult or dangerous.

If using a probe, identify a sampling location and place the probe in the stream at least 2.0 cm below the water surface but not more than 4.0 cm below the surface. Allow the probe measurement to stabilize (see manufacturer's instructions) and record the result on the field data sheet.

Grab samples

The sample container must be a plastic, wide mouthed, bottle with a screw top lid. Analyze the samples immediately. If samples will be placed in storage prior to analysis, they must be stored in amber laboratory bottles at 4° C for a time period not to exceed twenty four hours.

All bottles must be cleaned prior to each use according to the following specifications, 1) Wash each sample container with a brush and phosphate-free detergent, 2) Rinse three times with cold tap water.

Prior to sample collection label the bottle with the name of the sampler, location, and the date/time the sample was taken. Identify the sampling location and stand facing upstream. Rinse sample container three times with ambient water before filling with sample. To collect the sample, lower the lip of the bottle **below the surface of the water** and towards the current. Collect the sample with a "scooping" motion to sample the full water column instead of just one spot. (see Attachment 1, Collecting a Turbidity Grab Sample) Promptly³, pour out excess water to leave at least a 1-inch air space so the sample can be re-suspended (by inverting the sample container several times) prior to analysis.

Stage Measurements

At each monitoring location establish a staging location where the substrate is relatively stable. During each sampling event measure stream stage with a yard stick, staff gauge, or staff plate for comparison to future measurements.

Sample Analysis

Perform the sample analysis per the manufacturer's recommendation for the turbidimeter. If performing analysis with a bench top turbidimeter, conduct analysis on three separate sub-samples⁴ from the same bottle and record the median⁵ on the Data Sheet. Always re-suspend the sample by gently inverting the sample bottle several times (do not shake as air bubbles can interfere with your readings) before transferring to sub sample vials to prevent a misrepresentative reading due to settling.

³ This must be done immediately after collecting the sample. Waiting to pour out excess water can create an unrepresentative sample as some material may have already settled.

⁴ If using bench top turbidimeter, all vials for subsamples must be cleaned to manufacturer's recommendations.

⁵ Constituting the middle value in the distribution.

Data Sheet

All sections of the field data sheet must be completed for each monitoring event.

Identify the Timber Harvest Plan (THP) or Nonindustrial Timber Management Plan (NTMP) number, Plan Name, and monitoring year. For NTMPs identify the unit or notice of timber operations (NTO) number.

Identify the monitoring sites with a unique site identification (ID). This ID needs to correlate to the monitoring maps in the MRP. Provide the latitude and longitude of each site in decimal degree format (e.g. 35.345600N 122.678900W).

Identify the type of turbidimeter or probe.

Provide data from pre sampling calibration prior to each monitoring event, including the equipment identification number, date and time, result prior to calibration, value of calibration standard, and result following calibration. Record the name of the person who conducted the calibration.

Provide data from accuracy checks following each monitoring event, including the equipment identification number, date and time, accuracy check result, and value of the standard. Record the name of the person who conducted the accuracy check.

Provide the date and time each sample was taken and the date and time the sample was analyzed. Record the stage height and note any additional information such as problems at the site or any other observations.

Note the rain gauge location reading and time; amount and duration of rainfall; and current weather.

Estimate whether the stream is on the rising or falling limb of the hydrograph.

Reporting Requirements

By November 15 of each year, the discharger must submit an Annual Report to the Central Coast Water Board per the requirements in the MRP and the following:

- ❖ A summary of the water quality monitoring performed during the previous year. Any monitoring described in the summary must also include the data submitted in an electronic format compatible with Excel.
- ❖ A detailed map⁶ meeting the following specifications:
 - In color (if possible).
 - Title stating: "Water Quality Monitoring Locations for THP No. XXXX"
 - All monitoring locations and routes clearly marked with unique site identification tags.
 - A Key or Legend identifying all monitoring locations and routes.
 - North Arrow.
 - Scale
- ❖ Completed Field Data Sheets with data from all monitoring events.

⁶ The map needs to be submitted only once unless monitoring station locations are modified. In the future a map with unique monitoring site tags shall be submitted with the Timber Harvest Information Form and Fact Sheet.

Literature Consulted

Anderson, Chauncey W. "Chapter A6 Field Measurements Version 2.1 – 6.7 Turbidity" National Field Manual for the Collection of Water-Quality Data United States Geological Survey. September 2005.

Eaton, Andrew D. Clesceri, Lenore S. Greenberg, Arnold E. eds. "2130 Turbidity" Standard Methods for the Examination of Water and Wastewater Washington D.C., 1995 p. 2-8 – 2-11

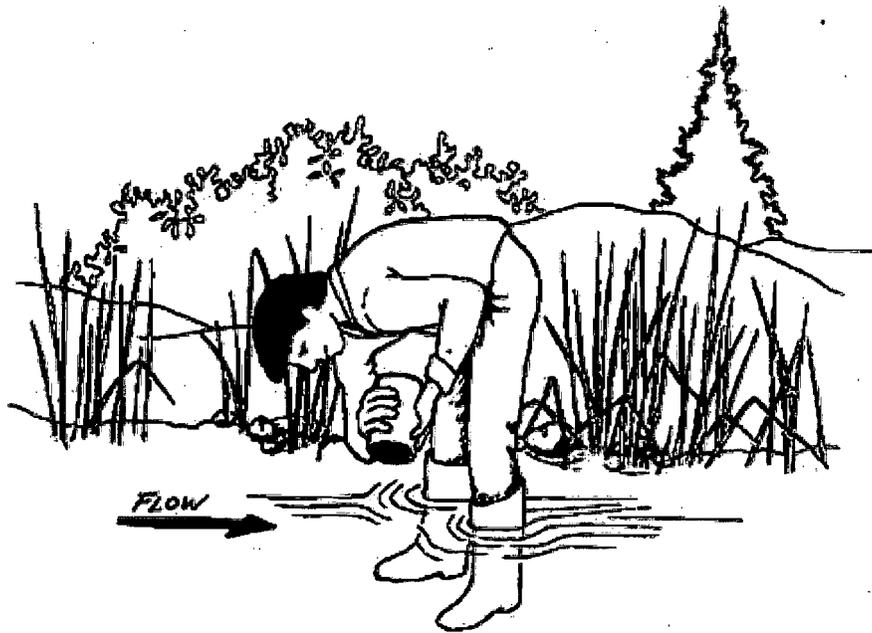
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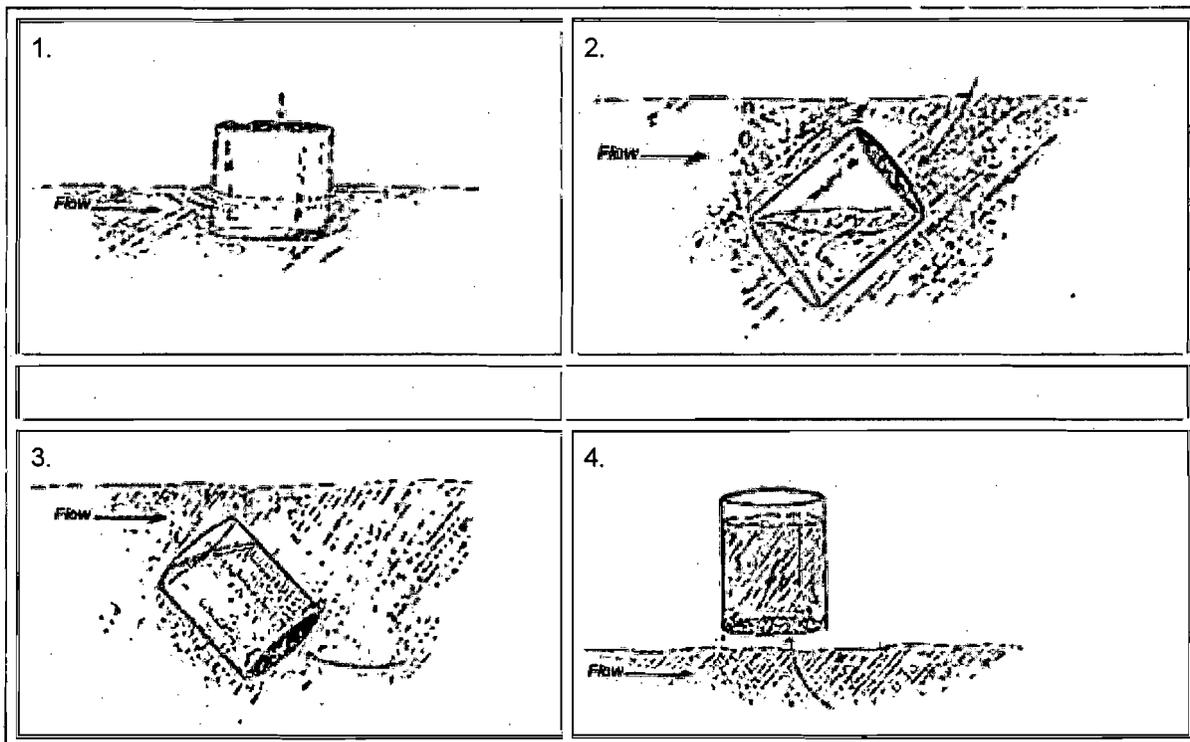
United States Environmental Protection Agency Office of Water. "Chapter 5.5 Water Quality Conditions – Turbidity" Volunteer Stream Monitoring: A Methods Manual EPA 841-B-97-003. November 1997

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Document1



Getting into position to take a turbidity grab sample.



Taking a water sample.
Turn the bottle into the current and scoop in an upstream direction.

Sketches taken from USEPA "Quality Assurance, Quality Control, and Quality Assessment Measures. Figures 5.2 and 5.3" Volunteer Stream Monitoring: A Methods Manual <http://www.epa.gov/volunteer/stream/vms50.html>