Attachment C

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

MONITORING AND REPORTING PROGRAM NO. R6T-2010-(TENTATIVE)
WDID NO. 6A09_____

FOR

UNITED STATES FOREST SERVICE
LAKE TAHOE BASIN MANAGEMENT UNIT

SOUTH SHORE FUEL REDUCTION
AND HEALTHY FOREST RESTORATION PROJECT

_____El Dorado County_____

I. Overview including Purpose and Authority

Monitoring will be conducted by the Discharger for the South Shore Fuel Reduction and Healthy Forest Restoration Project (Project). The Discharger shall conduct a variety of monitoring for this Project through a combination of its *Best Management Practices Evaluation Program* (BMPEP), the Project-specific monitoring plan described in the Project Final Environmental Impact Statement/Environmental Impact Report (FEIS/EIR), and by complying with the monitoring and reporting requirements of the Waste Discharge Requirements (WDRs), contained here.

The Monitoring and Reporting Program (MRP) is designed to ensure that the Project management measures are installed and functioning prior to precipitation events (implementation monitoring), that the measures were effective in controlling sediment discharge sources (effectiveness monitoring), and that any new sediment sources occurring as a result of Project implementation are tracked down and corrected (forensic monitoring). The Water Board may require that any person who proposes to discharge waste within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires (Water Code section 13267). All monitoring must be conducted by qualified professionals (i.e., a person with a bachelor's degree or higher in a biological, ecological, or other relevant science such as engineering, geology, soils, hydrology, botany, or fisheries and with the appropriate training and/or licensing to conduct site inspections and prepare technical reports associated with preventing or minimizing the discharge of waste to waters).

II. Implementation Monitoring

Implementation monitoring consists of visual, and in some instances photo-point monitoring, of Project treatment areas, roads, stream crossings, landings, skid trails, burn piles and prescribed burn areas, etc., wherever Project Best Management Practices (BMPs) have been employed. Visual inspections shall occur on 100% of the Project area to ensure that all management practices necessary to protect water quality (e.g., erosion control measures, riparian and watercourse buffers, waterbars, rolling dips or swales, etc.) are in place and effective. An implementation monitoring checklist has been developed for this Project and is included as MRP Attachment 2. The Discharger may use an alternate checklist appropriate for each unit provided that all the information required in this MRP is included.

Professional Discretion on Use of Specified BMPs:

The Discharger originally proposed BMPs and design features allowing wide discretion on the part of field personnel for Project activities. While Water Board staff understands the need to be able to apply professional judgment in the field in certain situations, based on site conditions, there need to be sideboards set in order to ensure that adverse effects to the environment are avoided and/or mitigated.

Where any part of the specific BMPs listed in BMP No. 3 in Attachment F is either not practicable due to the specified field conditions or is left to the Discharger's discretion, the Discharger's qualified staff (as specified in the BMP) shall implement alternate BMPs and mitigation measures that provide equal or better protection to these original BMPs. The specified BMPs are as follows:

- No. 10 (endlining on slopes above 10%),
- No. 17 (retaining Large Woody Debris (LWD) in perennial or intermittent watercourse channels),
- No. 20 (felling of trees/placement of LWD into channels),
- No. 21 (end-lining trees out of SEZs),
- No. 24 (use of dry crossings outside of normal operating periods),
- No. 39 (ripping of decommissioned roads),
- No. 50 (locations of landings, fuel storage, and refueling outside of RCAs), and
- No. 52b (decommissioning of landings).

There are only three situations in which, based upon site-specific conditions, the specified staff can propose a substantial variation on these specific BMPs:

1. The standard BMP will not adequately achieve the intended performance goal.
2. The standard BMP cannot feasibly be implemented.

3. The proposed alternative practice will meet or exceed the intended performance goal of the standard BMP, or will achieve that goal more effectively.

Where such alternate practices have been implemented, the Discharger **must** document the alternative measure taken in the BMP Implementation Checklist (or as a separate attachment), including the following:

1. Explanation and justification (by clear and convincing evidence), including:
   a. Identification of:
      1) the standard BMP being supplanted by the alternative practice, and
      2) the potential risk to beneficial uses and soil and water resources from application of the standard BMP and the alternative practice.
   b. A detailed description of:
      1) the proposed alternative practice,
      2) how it differs from the standard BMP,
      3) how it provides a result(s) at least equal to that of the BMP(s) to be supplanted,
      4) the specific location(s) it will be applied, and
      5) a detailed explanation of any additional mitigation measures which were added to protect beneficial uses and soil and water quality.
2. Clear instructions and specifications for the timber operator.
3. Provide, where appropriate, an expert shall be retained to aid in interpreting the alternative practice to the timber operator on a continuing basis to help to assure compliance with the alternative.
4. Provide a plan for evaluating the results of the proposed alternative practice, including the criteria, procedures, and responsible parties.

Project Fire Prescription Plan Requirements:

The Discharger's Fire Prescription Plan, as required in these WDRs for burn piles, underburning, and other controlled burns, includes sufficient detail to ensure that fire intensity and duration do not result in severely burned soils (see also BMPs No. 25 through 31 in WDR Attachment F). Additionally, the Plan must describe how, when, and where water drafting will be allowed, and provide details on required measures for protecting riparian vegetation, soils on access routes, stream beds, and stream banks during drafting operations. Implementation of these fire prescriptions require the same visual monitoring as described above for all Project BMPs, and shall be recorded on the Implementation Monitoring Checklist. Pile burning in SEZs is considered a "high-risk" activity, and shall receive the additional effectiveness monitoring described below.

Photo-Point Monitoring Requirements:

Photo-point monitoring is required at the following locations within the Project:

- USFS Road 12NO1A Saxon Creek tributary permanent crossing
- USFS Road 12N20 tributary to Osgood Creek permanent crossing
- USFS Road 12NO8 Powerline Road permanent crossing
- Temporary crossing on intermittent tributary to Saxon Creek (to be in place longer than one year)
- Ten temporary crossing locations on ephemeral streams per year (crossings that will be removed before each winter). Prior to commencement of operations, Water Board and Discharger staff will jointly identify the highest risk crossings for this photo-point monitoring, based on the pre-operations layout of skid trails. If fewer than ten are installed and removed in a given year, then all shall be monitored. If the Discharger adds additional temporary crossings during the course of the active timber harvest, pre-construction photos must be taken of each new crossing. The Discharger and Water Board staff shall collaborate as soon as possible following installation, to determine which of these additional crossings shall receive further photo-point monitoring, based on assessment of risk.
- Water drafting locations, when used at waterbodies to obtain water to control prescribed fires.

Photo-point monitoring shall be included with the subsequent monitoring report submitted for the Project. Photo-point monitoring must be conducted before and after installation/implementation of the structure or BMP. For temporary crossings where photo-point monitoring has been identified, photos shall be taken of the crossing area following removal of the temporary crossing. Photo points shall be depicted on a Project area map that has a scale equivalent to a USGS 7.5 minute topographic map. Photo points shall be identified in the field by use of rebar, flagging, or other method that will last throughout the (potential) active discharge period of the Project activity at any given site (i.e., until the site has stabilized following operations at that site). Photo-Point Monitoring sites will be numbered for easy identification; numbers shall include a designation for the treatment unit name. The Photo-Point Monitoring form (MRP Attachment 7) or an equivalent form is required to be completed for all photographs submitted.

Implementation monitoring shall be conducted as follows:

- *Prior to Project Commencement* – Conduct pre-project photo-point monitoring.

- *In active treatment units, for a minimum of one year throughout the normal spring to fall flow cycle* - Conduct temperature and shade monitoring from

May to November, as described in the In-stream Temperature and Shade Monitoring section, below.

- *Where Vegetation Management Activities have commenced in treatment units where no winter operations are planned* – A Fall Implementation Monitoring Inspection shall be conducted after operations are completed in the treatment unit. This monitoring shall be conducted **after August 15 but no later than October 15 of each year** to assure that management measures are in place and secure prior to the winter period.

- *Where Vegetation Management Activities which include winter operations, have commenced* - Fall Implementation Monitoring Inspection shall be conducted **by October 15** to assure that management measures for areas not subject to winter operations are in place and secure prior to the winter period and that any appropriate/relevant management measures including watercourse crossings or buffer zone flagging for those areas with planned winter operations are in place.

- *Where Winter Operations occur,* Daily Winter Monitoring and Winter Implementation Monitoring must be conducted.

    - The Daily Winter Monitoring checklist (MRP Attachment 3) shall be filled out every day that equipment operations are conducted during the winter period (October 15 to May 1). In the interest of reducing monitoring during dry periods, daily monitoring is only required beginning with the first National Weather Service forecast of 30% chance or greater of precipitation (http://www.nws.noaa.gov/). If seven days of no precipitation occurs and soils are dry, monitoring may cease until the next time National Weather Service forecasts a 30% chance of precipitation. Daily Winter Monitoring checklists shall be submitted to the Water Board by **July 15** of each previous winter season that winter operations occur.
    - A Winter Implementation Monitoring Inspection that uses parts of the implementation monitoring checklist to assess any relevant Project activities (MRP Attachment 4) shall be completed **immediately following cessation of winter period operations (and prior to May 1)**, in areas where winter operations have occurred, to assure that management measures are in place and secure. Winter Implementation Monitoring checklists shall also be submitted to the Water Board by **July 15** of each previous winter season that winter operations occur.

If Implementation monitoring reveals that management measures were not implemented as required, the monitoring report must describe any corrective action that was taken or explain why no corrective action was needed. If no corrective action was taken, but was identified as necessary, the Discharger shall

specify a schedule for corrective action(s) to be completed. Future monitoring reports must state when and how corrective actions were accomplished.

In-stream Temperature and Shade Monitoring

The Discharger shall conduct in-stream temperature and shade monitoring at locations above, within, and below six treatment area types from May to November each year of Project activities in the given treatment unit.

The objective of fuel treatments in SEZs (along or adjacent to perennial flowing tributaries) is to have no measurable increase in stream temperature as a by-product of conifer removal. Therefore, the critical monitoring question is, will the decrease in density of live conifers result in a decrease in stream shade and a measurable increase in stream temperature?

Monitoring parameters would include: a) selection of a minimum of six SEZ treatments (two whole tree units, two cut-to-length units, and two hand thinning units), b) installation of three temperature loggers associated with each unit type, c) temperature monitoring locations above, within and below each selected unit and d) measurement of stream shade at each temperature monitoring location.

Stream data loggers record water temperatures during a normal spring to fall flow cycle (May – November) which would encapsulate pre- and post-fuels treatment conditions. Stream temperature would be recorded for up to two years while the units are treated. The following table summarizes the stream temperature monitoring parameters:

WHOLE TREE			**CUT TO LENGTH**			**HAND THIN**		
Unit No.	**No. of SEZ Acres**	**No. of Data Loggers**	**Unit No.**	**No. of SEZ Acres**	**No. of Data Loggers**	**Unit No.**	**No. of SEZ Acres**	**No. of Data Loggers**
9	21.63	UU – 1 IU – 1 DU - 1	133/135	1.06	UU – 1 IU – 1 DU - 1	99/56	1.24	UU – 1 IU – 1 DU - 1
192	3.90	UU – 1 IU – 1 DU – 1	343	9.72	UU – 1 IU – 1 DU - 1	82/84	0.10	UU – 1 IU – 1 DU - 1
Unit 22 (alternate)	0.03	UU – 1 IU – 1 DU - 1	186/187 (alternate)	0.20	UU – 1 IU – 1 DU - 1	95 (alternate)	0.11	UU – 1 IU – 1 DU - 1

UU = Upstream of unit
IU = Inside the unit
DU = Downstream of the unit

TOTAL NO. OF DATA LOGGERS = 18
TOTAL NO. OF SITES = 6

II. Effectiveness Monitoring Requirements

Effectiveness monitoring shall include visual assessments, photo-point documentation, and instream monitoring as detailed in this section. Effectiveness monitoring inspections shall be conducted at a randomly selected 10% of **all** BMPs installed at high risk sites (i.e., those sites with potential hydrological connectivity to waterbodies, and as described below) as soon as conditions allow following the winter period. The inspections shall be conducted to evaluate the effectiveness of management measures in controlling discharges of sediment and in protecting water quality. The Water Board or Discharger staff may identify additional high risk sites for effectiveness monitoring each year based on inspections or results of the Fall or Winter Implementation Monitoring. The Executive Officer may require additional monitoring that is deemed appropriate and in accordance with Water Code Section 13267. Effectiveness monitoring may be conducted using the USFS BMPEP protocols along with photo point monitoring at the locations described above.

Effectiveness monitoring inspections shall take place after March 15 and before June 15 every year until these sites are stabilized, infiltration capacity is restored and/or vegetation recovery has commenced, and until a Final Certification (described below) report has been submitted to the Water Board. For those locations where snow cover or saturated soils prevent access to the monitoring sites by June 15, the inspections shall be conducted as soon as site conditions allow.

If the Effectiveness monitoring reveals sediment transport and/or other BMP failure(s), a visual inspection of in-stream components (bank composition and apparent bank stability, water clarity, and sediment deposition) shall also be conducted and the conditions shall be documented.

List of High Risk Activities and Sites

The Discharger's watershed staff shall evaluate the effectiveness of implemented BMPs at a randomly selected 10% of each of the following "high risk" sites:

- Treatment units with burn piles in SEZs (pre- and post- burn evaluations required) (BMPs No. 27, and 29),
- Permanent crossings (see locations identified in photo-point monitoring section, above) (BMPs No. 56, 57, and 58),
- Location of temporary crossings of ephemeral and/or intermittent watercourses (either in place or sites where crossings were removed prior to winter) (BMP No. 54),
- Road construction and decommissioning within 50 feet of SEZs, or within 50 feet of any watercourse or its 100-year floodplain,
- Waterbars or critical dips or other road drainage control measures where hydrologic connectivity to watercourses is likely to occur (e.g., where road

is less than 50 feet from an SEZ, 100-year flood plain, or waterbody, other than at crossings),
- Temporary spot rocking repairs on rutted road (BMP No. 43),
- Locations where a tree was accidently felled across watercourses, and
- Any activity where discretion on the part of the Discharger's staff was used pursuant to BMP No. 3 as listed above under the "Professional Discretion on Use of Specified BMPs" section.

The Discharger shall develop and submit to the Water Board a list of the randomly-selected sites to be monitored using the BMPEP protocols. Alternatively, the Discharger may use relevant elements from the implementation monitoring checklist to conduct effectiveness monitoring of the randomly selected sites. The proposed list of sites and the proposed focused effectiveness monitoring checklist shall be submitted to and accepted by the Water Board at least two weeks before operations may commence for each year.

The monitoring report shall be submitted to the Water Board by **July 15** following each year of Project activities. Results from this effectiveness monitoring will either support current design features or be used to modify them to provide additional protection. If the Effectiveness monitoring identifies failed or ineffective BMPs, Discharger staff shall, with the July 15 report, submit a schedule and narrative that addresses when corrective action will be implemented. For the burn piles, this evaluation shall also include the following:

(a) The corrective actions taken at any burn pile location where the burn has impacted the soils or the site in some manner; the discussion of a "corrective" action may indicate that impacts were minor, not requiring immediate corrective actions, but include details on further monitoring and evaluations;
(b) What corrective actions will be undertaken on the existing burn piles not yet burned to avoid similar impacts; and
(c) A description of the measures to be undertaken in future hand-pile areas in the Project to avoid these impacts.

The list of corrections, including a description of the action and date completed, shall be sent with the January 15 report.

The BMPEP user's guide is in Chapter 15 of the USDA Forest Service Region 5 Water Quality for Forest System Lands in California Best Management Practices Handbook. The Handbook can be found at the following link: http://www.fs.fed.us/r5/publications/water_resources/waterquality/water-best-mgmt.pdf

Bioassessment Monitoring

The Discharger shall conduct annual in-stream bioassessment sampling at the following three locations (Note: coordinates provided here are in NAD 83, and mark the downstream end of each sampling reach):

Saxon Creek above Oneidas Street
Latitude: 38.87111 Longitude: 119.98144

Taylor Creek above Highway 89
Latitude: 38.93213 Longitude: 120.05663

Un-named tributary to Upper Truckee River
Latitude: 38.85347 Longitude: 120.03588

The bioassessment monitoring must be conducted in accordance with MRP Attachment 1.

III. Forensic Monitoring Requirements

Forensic monitoring inspections shall be conducted whenever visual observations from the Discharger's or Water Board staff identify a soil or water quality resource concern. Notifications of potential impacts by the public or other regulatory agency staff shall trigger Discharger evaluations of whether follow-up forensic monitoring is deemed necessary. Forensic monitoring shall also be conducted within 36 hours following storm events greater than two inches of rain in 24 hours or rain-on-snow events that result in over bank flows, or as soon as worker safety and access allows. All watercourses immediately below and within active treatment units during a given operating period shall be inspected, and photographs shall be taken at locations where forensic monitoring reveals a discharge or potential for discharge. The Executive Officer may require additional inspections be conducted if a soil or water quality resource concern requires further investigation and assessment. The goal of forensic monitoring is to locate sources (or potential sources) of sediment delivery in a timely manner so that rapid corrective action(s) may be taken where feasible and appropriate. Forensic monitoring may also assist in determining cause and effect relationships between hillslope activities, hydrologic triggers, and in-stream conditions. Forensic monitoring involves evaluation by a watershed specialist, identification of the source of the impact, identification and application of corrective actions where needed, and repeated monitoring until the concern has been resolved. Adaptive management measures shall be employed as necessary to correct the problem.

Photo point monitoring shall be required at locations when a visual discharge of sediment to a watercourse is detected or reported, or when failed management measures cause or may cause a visible release of sediment to watercourses. If corrective action is proposed for sites that are determined to be sediment sources during forensic monitoring, photographs shall be taken before and after a corrective action is implemented at the site.

Photographs shall include photos of the sediment plume, evidence of sediment discharge including the point of discharge (prior or ongoing) into the waterbody,

and streambed conditions immediately downstream of areas where sediment discharge occurred. Include a series of photographs starting with one of the subject matter with a definable landmark in the background, and zooming in to the details of the issue at hand. The latter photograph/s must include a readily recognizable object in it to provide scale. Submitted photos must include the time and date of the photo, location (name of closest surface water and description of proximity to the surface water), and a brief description of the issue. Forensic monitoring photo points shall be depicted on a Project area map that has a scale equivalent to a USGS 7.5 minute topographic map. The Photo-Point Monitoring form (MRP Attachment 7) or an equivalent form is required to be completed for all photographs submitted.

IV. Reporting

Monitoring reports shall be submitted on **January 15 and July 15** of every year. The January Report must contain the results of Bioassessment conducted and all Fall Implementation Monitoring. If forensic monitoring was triggered by Project activities or a weather event during the summer/fall operating season those monitoring results shall be submitted with the January 15 Report. The July Report must contain the results of all Daily Winter Monitoring, Winter Implementation Monitoring, Forensic and Effectiveness Monitoring. All Monitoring Reports shall, at a minimum, include the date and type of each inspection, the inspector's name and title, the location and treatment unit of each inspection point, the title and name of the person submitting the report, the inspection findings (including a description of the weather, rainfall to date, any photographs taken with date and time clearly delineated) a written description and certification of how Discharger has complied with the WDRs criteria and conditions, and a description of corrective actions that were, or will be, undertaken to maintain Project compliance. All monitoring reports must be signed by a qualified representative who can certify under penalty of perjury that all information contained in the Monitoring Report is true, accurate, and complete.

Violation Reporting – The Discharger shall report by telephoning (530) 542-5400 as soon as possible, but no later than 24 hours after detection, any discharges of wastes, including earthen materials to surface waters, violation of an applicable water quality control plan requirement, or WDRs condition. A written report regarding such violation(s) shall be submitted within **14 days following detection** and shall include the following:

- Date of detection of violation(s)
- Name and title of person(s) discovering violation(s)
- Map indicating location of violation(s)
- Nature and extent of violation(s)
- Photos of site characterizing violation(s)

- Corrective measures implemented to date, or if to be implemented, then expected date of correction.

Final Certification (WDRs compliance reporting) – The Discharger must sign and submit a "final certification" stating whether:

- The Project was conducted in conformance with the approved plan and with all applicable provisions of the WDRs.
- Discharges resulting from the Project were in compliance or expected to be in compliance with all requirements of applicable water quality control plans.

The Executive Officer may modify or rescind this Monitoring and Reporting Program at any time.

Ordered by: _____ Dated: _____
HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments:
1. Bioassessment Requirements
2. Implementation Monitoring Checklist
3. Daily Winter Monitoring Checklist
4. Winter Implementation Checklist
5. Effectiveness Monitoring Form
6. Forensic Monitoring Form
7. Photo-point Monitoring Form