STORMWATER POLLUTION PREVENTION PLAN

FOR

LOWER PERAZZO MEADOW RESTORATION PROJECT

Prepared for:

foriver
TRUCKEE RIVER WATERSHED COUNCIL

PO Box 8568

Truckee, California 96162

Prepared by:

Balance Hydrologics, Inc.®

March 2019

STORMWATER POLLUTION PREVENTION PLAN

for

Lower Perazzo Meadow Restoration Project

Risk Level II

March 2019

Legally Responsible Person (LRP):
Truckee River Watershed Council
104018 Donner Pass Road, #B
Truckee, California
Lisa Wallace
530.550.8760

Prepared for:
Beth Christman
Truckee River Watershed Council,
PO Box 8568
Truckee, California 96162

Project Location:
Lat: 39°29' 44" N, Long: 120° 19' 37" W
Off Henness Pass Road, 4.5 miles from Highway 89 North.

SWPPP Prepared by:
Balance Hydrologics, Inc
PO Box 1077
Truckee, California 96161
Teresa Garrison

Estimated Project Dates:
Start of Construction – August 2019
End of Construction – October 2019

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QUALIFIED SWPPP DEVELOPER

Project Name: Lower Perazzo Meadow Restoration Project

"This Stormwater Pollution Prevention Plan and Appendices were prepared under my direction to meet the requirements of the California Construction General Permit (SWRCB Orders No. 2009-009-DWQ as amended by Order 2010-0014-DWQ and Order 2012-0006-DWQ). I certify that I am a Qualified SWPPP Developer in good standing as of the date signed below."

Qualified SWPPP Developer/Practitioner (QSD/QSP)

Teresa Garrison, PE, QSD/QSP
Balance Hydrologics, Inc.
800 Bancroft Way, Suite 101
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Locally,
PO Box 1077 (mail)
12020 Donner Pass Road, Unit B1
Truckee, California, 96161

Signature: _____
Date: _____
QSD Certification #: 26493

LEGALLY RESPONSIBLE PERSON

Project Name: Lower Perazzo Meadow Restoration Project

"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, to the best of my knowledge and belief, the information submitted is, 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."

Legally Responsible Person (LRP)

Lisa Wallace
Truckee River Watershed Council
PO Box 8568
Truckee, California 96162

Signature: _____
Date: _____

AMENDMENTS

Amendment and Revision Instructions

All amendments to the SWPPP shall be prepared and certified by the QSD, uploaded to SMARTS and distributed to SWPPP recipients within 30 calendar days.

SWPPP recipients shall insert new or amended SWPPP content and the updated SWPPP Amendment Log of the SWPPP. Additionally, the recipient shall insert the Amendment Notification Card (below) into the appropriate section of the SWPPP to identify that it has been amended, to notify to the reader that the section has been amended.

Amendment Notification
This section of the SWPPP has been amended.   ***Please refer to Attachment A for amended SWPPP content.***
Section Amended:
Amendment Date:
Amendment Number:
Approved by (QSD):
Description:

Amendment Log

Project Name: Lower Perazzo Meadow Restoration Project
WDID:

Amendment Number	Date	SWPPP Section Amended	Amendment Description	Prepared By:

ACRONYMS

BMP	Best Management Practice
COC	Chain of Custody
CSMP	Construction Site Monitoring Program
DSA	Disturbed Soil Area
Engr	Engineering
NOI	Notice of Intent
NONC	Notice of Noncompliance
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
PRD	Permit Registration Documents
QA/QC	Quality Assurance / Quality Control
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
RWQCB	Regional Water Quality Control Board
SMARTS	Stormwater Multiple Application and Report Tracking System
SR	State Route
SWRCB	California State Water Resources Control Board
SWAMP	Surface Water Ambient Monitoring Program
SWPPP	Stormwater Pollution Prevention Plan
TNF	Tahoe National Forest
WDID	Waste Discharge Identification

1 SWPPP REQUIREMENTS

1.1 Introduction

The Lower Perazzo Meadow Restoration Project (Project) is a roughly 50-acre meadow restoration project. The project will restore 5,100 linear feet of the Little Truckee River located on property owned by the Truckee Donner Land Trust, an unincorporated area of Sierra County, California. The project reach is located roughly 4.5 miles west along Henness Pass Road from State Route 89, 15 miles north of Truckee, California. The project will redistribute flows into abandoned secondary relict channels and allow high flows to more frequently spread across a greater floodplain area, restoring and enhancing approximately 50 acres of meadow.

In addition to the restoration along Little Truckee River, approximately 8 acres of upland areas will be disturbed to generate the needed fill for the project. The borrow sites are located around the restoration site in five areas.

The property owner is the Truckee Donner Land Trust and the Project developer is the Truckee River Watershed Council (TRWC). The Project work areas are shown on the Site Map in **Appendix A**.

This Stormwater Pollution Prevention Plan (SWPPP) is designed to comply with California's General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (General Permit) Order No. 2009-0009-DWQ as amended in 2010 and 2012 (NPDES No. CAS000002) issued by the State Water Resources Control Board (State Water Board). This SWPPP has been prepared following the SWPPP Template provided on the California Stormwater Quality Association Stormwater *Best Management Practice Handbook Portal: Construction* (CASQA, 2012). In accordance with the General Permit, Section XIV, this SWPPP is designed to:

- Address pollutants and their sources, including sources of sediment associated with construction, construction site erosion, and other activities associated with construction activity;
- Eliminate, control, or treat all stormwater discharges, where not otherwise required under a Regional Water Quality Control Board (Regional Water Board) permit;

- Establish site BMPs that are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best Control Technology (BAT/BCT) standard;
- Provide accurate calculations and complete design details, as well as BMP controls for site run-on;
- Describe stabilization BMPs to reduce or eliminate pollutants after construction is completed; and
- Identify all effluent discharge locations, a sampling and analysis strategy and protocols, and a sampling schedule for discharges from the identified discharge locations.

1.2 Permit Registration Documents

Required Permit Registration Documents (PRDs) shall be submitted to the State Water Board via the Stormwater Multi Application and Report Tracking System (SMARTS) by the Legally Responsible Person (LRP), or authorized personnel (i.e., Approved Signatory) under the direction of the LRP. The project-specific PRDs include:

- Notice of Intent (NOI);
- Risk Assessment (Construction Site Sediment and Receiving Water Risk Determination);
- Site Map;
- Annual Fee;
- Signed Certification Statement (LRP Certification is provided electronically with SMARTS PRD submittal); and
- SWPPP.

Site Maps can be found in **Appendix A** and Engineering Plans in **Appendix B**. A copy of the submitted PRDs shall also be kept in **Appendix C** along with the Waste Discharge Identification (WDID) confirmation.

1.3 SWPPP Availability and Implementation

The discharger shall make the SWPPP available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Municipal Inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew, and the original SWPPP shall be made available via a request by radio/telephone. (CGP Section XIV.C)

The SWPPP shall be implemented concurrently with the start of ground disturbing activities.

1.4 Reporting

1.4.1 SWPPP Amendments

This SWPPP will be amended whenever there is a change in construction site conditions or SWPPP implementation protocols that may affect the discharge of pollutants to surface waters, groundwater, or a municipal storm drain system. This SWPPP will be maintained such that it reflects the actual site conditions for the duration of the Project, including keeping disturbed soil area (DSA) maps current as the Project progresses, changes to Project schedule or risk level, or when deemed necessary by the QSD.

Changes in BMP implementation features or activities shall be documented and included as amendments to the SWPPP. An amendment log will be maintained in **Appendix D** that summarizes all changes to the SWPPP for the duration of the Project.

The following items shall be included in each amendment:

- Who requested the amendment;
- The location of the proposed change;
- The reason for the change;
- The original BMP proposed if any; and
- The new BMP proposed.

The QSD has determined that the changes listed in **Table 1-1** can be field determined by the QSP. All other changes shall be made by the QSD as formal amendments to the SWPPP.

Table 1-1 List of Changes to be Field Determined

Candidate changes for field location or determination by QSP(1)
Increase the quantity of an Erosion or Sediment Control Measure
Relocate/Add stockpiles or stored materials
Relocate the water storage and/or water transfer location
Changes to access points (entrance/exits)
Change the type of Erosion or Sediment Control Measures
Changes to the location of erosion or sediment controls
Minor changes to the schedule or phases
Changes in construction materials
(1) Any field changes not identified for field location or field determination by QSP must be approved by QSD

1.4.2 Retention of Records

This SWPPP and any amendments will be kept on site during construction and made available upon request of a representative of the Regional Water Board or any local stormwater management agency which receives the stormwater discharge. This SWPPP will also be posted on SMARTS for access by the general public. This SWPPP and supporting documents shall be retained for a minimum of three years.

1.4.3 Required Non-Compliance Reporting

If a General Permit discharge violation occurs the QSP shall immediately notify the LRP. The LRP shall include information on the violation with the Annual Report. Corrective measures will be implemented immediately following identification of the discharge or written notice of non-compliance from the Regional Water Board. Discharges and corrective actions must be documented and include the following items:

- The date, time, location, nature of operation and type of unauthorized discharge.
- The cause or nature of the notice or order.
- The control measures (BMPs) deployed before the discharge event, or prior to receiving notice or order.
- The date of deployment and type of control measures (BMPs) deployed after the discharge event, or after receiving the notice or order, including additional measures installed or planned to reduce or prevent re-occurrence.

Reporting requirements for Numeric Action Levels (NALs) exceedances are discussed in **Section 7.7.2**.

1.4.4 Annual Report

The General Permit requires that permittees prepare, certify, and electronically submit an Annual Report no later than September 1st of each year. Reporting requirements are identified in Section XVI of the General Permit. Annual reports will be filed in SMARTS and in accordance with information required by the on-line forms.

1.4.5 Changes to Permit Coverage

The General Permit allows for the reduction or increase of the total acreage covered under the General Permit when: a portion of the project is complete and/or conditions for termination of coverage have been met; when ownership of a portion of the project is purchased by a different entity; or when new acreage is added to the project.

Modified PRDs shall be filed electronically within 30 days of a reduction or increase in total disturbed area if a change in permit covered acreage is to be sought. The SWPPP shall be modified appropriately, shall be logged at the front of the SWPPP and cetrification of SWPPP amendments are to be kept in **Appendix D**. Updated PRDs submitted electronically via SMARTS can be found in **Appendix C**.

1.4.6 Notice of Termination

A Notice of Termination (NOT) must be submitted electronically by the LRP via SMARTS to terminate coverage under the General Permit. The NOT must include a final Site Map and representative photographs of the Project that demonstrate final stabilization has been achieved. The NOT shall be submitted within 90 days of completion of

construction. The RWQCB will consider a construction site complete when the conditions of the General Permit, Section II.D have been met.

2 PROJECT INFORMATION

2.1 Project and Site Description

2.1.1 Site Description

The Project is located within the Little Truckee River watershed, tributary to the Truckee River in Sierra County, California. The Little Truckee River drains the eastern crest of the Sierra Nevada Mountains at elevations above 9,000 feet and is a major tributary to the Truckee River. The Truckee River is a 303(d)-listed impaired water body for suspended sediment with an established TMDL. The Project work is located roughly 9 miles upstream from Stampede Reservoir, which flows into Boca Reservoir and then to the Truckee River. The Project will have limited to no impacts to the Truckee River.

2.1.2 Existing Conditions

Historical land uses included extensive logging and ranching. Timber harvest and transport methods used livestock, narrow-gauge railroads, flumes, and instream diversion dams. These methods dissected the meadow in many locations and changed drainage patterns. Several road grades are present in the slopes adjacent to the meadow surface. These features remain on the landscape and contribute to alteration of flow pathways and sediment supply.

The Project is surrounded by the Tahoe National Forest, and as such, the area is mostly undeveloped. The vegetation within the Project generally corresponds to the following three broad community types: 1) wetland herbaceous, 2) riparian woody, and 3) upland.

Current and historical land-uses have likely contributed to the degradation of stream-meadow functions. The Little Truckee River has experienced multiple episodes of channel incision and widening, and impaired channel-floodplain processes. Current channel conditions provide sources of excess sediment from bank and channel erosion. The incised channels reduce wet-meadow flooding and contribute to losses in meadow habitat and function.

There are no known historical sources of contamination at the site.

2.1.3 Existing Drainage

The Project is in a low-gradient montane valley at roughly 6,000 feet elevation. The watershed area of the project is approximately 34.2 square miles. Mean annual precipitation ranges between 30 and 45 inches, with most precipitation falling as snow and rain during winter storms (WRCC, 2018). Summers are generally dry with intermittent thunderstorms.

Surface drainage at the site flows overland in forested or meadow vegetation towards the Little Truckee River which drains to the east. Stormwater discharges from the site are considered direct discharges into the Little Truckee River, as defined by the State Water Board. General drainage patterns can be seen from the existing site topography as shown on the Engineering Plans in **Appendix B**.

Streamflow in the Little Truckee River has been gaged by the USGS and Balance Hydrologics at multiple locations and with varying periods of record between 1947 and the present. Design flows for the Project have been estimated, such that the 2-year flow is approximately 692 cfs, and 100-year flow is on the order of 5,000 cfs.

2.1.4 Geology, Soils, and Groundwater

The Project area is located in the transition between the Sierra Nevada and Basin and Range Geomorphic Provinces. The study area is dominantly underlain by Tertiary volcanic rocks that are found in much of the Central Sierra Nevada- predominately andesitic breccias and associated mudflows. Glaciation and subsequent fluvial erosion formed much of the steeper terrain surrounding the meadow and provides fine and coarse sediment to the Little Truckee River by erosion of moraines, outwash, and glacial till. After the disappearance of the glaciers, streamflow in the Little Truckee River declined significantly, resulting in the formation of meandering channels within a broad glacially derived alluvial valley.

Lower Perazzo Meadow soils are mapped as Aquolls and Borolls, 0 to 5 percent slopes, and adjacent hillsides are mapped as the Celio-Gefo-Aquolls complex, 2 to 30 percent slopes. Aquolls and Borolls are wetland soils found along the stream corridor and at distal toes of alluvial fans. They are poorly drained (Hydrologic Soil Group D) soils and are noted as having a high-water table during much of the year. These soils also support wetland vegetation such as alder, willow, rush, and sedge.

Groundwater levels in Lower Perazzo Meadow have been shown to be 3 to 6 feet below the ground surface during the summer months. Winter and spring groundwater conditions are rarely shown to reach the ground surface. The groundwater gradient is toward the east, following the general slope of the land.

2.1.5 Project Description

Disturbance (including the extents of access, staging and restoration sites) will occur on approximately 12 acres of the Project, which comprises approximately 90 percent of the greater Project area. The limits of grading are shown on Site Map Figures 1 and 2 in **Appendix A**. The restoration work has been separated into four channel areas separated by sections of the channel where no work will be done. Grading will include both cut and fill activities, with the total cut estimated to be 48,000 cubic yards. The material will be sourced locally from the identified borrow areas shown on the Site Map in **Appendix A**. Material will be prepped and stockpiled at the borrow sites and taken along the shortest identified access route to the associated restoration site.

Appendix A includes Site Maps for each of the restoration areas within the Project. Specific information for each site is provided in the Engineering Plans (**Appendix B**). The Project will be restored through various channel treatment methods as outlined in the engineering plans and summarized below:

A. **Preserve Amphibian Habitat**. No work will occur in these areas to preserve aquatic and amphibian habitat.

B. **Channel Fill.** Where the existing channel does not intersect relict or secondary channels, fill material will be placed to aggrade the channel to an elevation approximately 0.5- to 1-foot higher than the adjacent meadow surface. Prior to filling, the channel will be over-excavated to clear the bed and banks of vegetation, which will be salvaged and stored for transplanting. The excavated surface will be scarified, and channel fill will be placed in lifts and nominally compacted to fill voids.

C. **Channel Fill at Relict Channel or Swale Crossing**. Where the existing channel crosses a small relict channel or swale, fill material will be placed to aggrade the channel to an elevation matching the relict channel elevation. Prior to fill placement, the sub-grade will be prepared as described above.

D. **Coarse Channel Fill at Relict Channel Crossing.** Where the existing channel crosses a major relict channel, fill material will be placed to aggrade the channel

to an elevation matching the relict channel elevation. The sub-grade will be prepared as described above, and the upper 1- to 2-feet of fill will consist of coarse channel fill material harvested from the existing channel.

In addition to the channel treatments, the lower portion (eastern) of the Project will include a Riffle Grade Control intended to prevent the lower meadow fill treatments from unraveling (i.e., reach-scale erosion). The Riffle Grade Control is designed to increase the water surface elevation throughout the lower meadow and prevent reach-scale incision of the channel fill treatments.

2.1.6 Developed Condition

Post-project surface drainage will not be altered by the Project. The Project will improve more natural drainage patterns reducing erosion. The Project will not increase impervious surfaces. All temporary access road and staging areas will be restored to their pre-project condition.

2.2 Permits and Governing Documents

In addition to the General Permit, the following documents have been accounted for while preparing this SWPPP;

- Lahontan Regional Water Board requirements
- National Historic Preservation Act/Requirements of the State Historic Preservation Office
- Clean Water Act Section 401 Water Quality Certifications
- U.S. Army Corps of Engineers 404 Permits
- CA Department of Fish and Game 1600 Streambed Alteration Agreement
- Sierra County Grading Permit
- California Environmental Quality Act Documents

2.3 Stormwater Run-On from Offsite Areas

The origin of run-on includes perennial surface waters within the Project areas. Because the Project has restoration elements that are within the active channel, construction will occur at times of low flow and include temporary BMPs to minimize impacts to the

waterway. Diversion and dewatering BMPs used in this Project are described in the Engineering Plans (**Appendix B**).

2.4 Risk Level Determination

The Project was determined to be a Risk Level II using the Risk Determination Worksheet (SWRCB, 2011). The risk level was determined using the matrix of Sediment Risk and Receiving Water Risk, where the Sediment Risk was categorized as 'low,' and the Receiving Water Risk was categorized as 'high.' The watershed erosion estimated for the Project used the individual method or RUSLE and was estimated to be less than 0.1 tons/acre, well within the 'low' site Sediment Risk category. The Receiving Water Risk was determined to be 'high' as the Little Truckee River is identified in the Lahontan Basin Plan as a stream with Spawn, Cold, and Migratory beneficial uses (LRWQCB, 1995), additionally, the Little Truckee River drains into the Truckee River, a 303(d)-listed impaired water body with a TMDL for suspended sediment concentration. Based on the risk parameters presented above, according to the Risk Level Matrix the Project is classified as a Risk Level II. A copy of the Project Risk Determination Worksheet submitted to SMARTS with the PRDs is included in **Appendix E**.

Risk Level II sites are subject to both the narrative effluent limitations and numeric effluent standards. The narrative effluent limitations require stormwater discharges associated with construction activity to minimize or prevent pollutants in stormwater and authorized non-stormwater through the use of controls, structures, and best management practices. Discharges from Risk Level II site are subject to NALs for pH and turbidity shown in **Table 2-1**. This SWPPP has been prepared to address Risk Level II requirements (General Permit Attachment D).

Table 2-1 Numeric Action Levels

Parameter	**Unit**	**Numeric Action Level Daily Average**
pH	pH units	Lower NAL = 6.5 Upper NAL = 8.5
Turbidity	NTU	250 NTU

2.5 Construction Schedule

Construction is planned between August and October 2019. Modification or extension of the schedule (start and end dates) may affect risk determination and permit requirements. The LRP shall contact the QSD if the schedule changes during construction to address potential impact to the SWPPP. The estimated schedule for planned work can be found in **Appendix F**.

Construction of channel fill treatments requires work within the stream. A channel diversion is anticipated to occur, diverting the low flows around the project site as shown in the Engineering Plans (**Appendix B**). Construction shall minimize land disturbance, and, as much as possible, shall complete the restoration of one channel fill treatment before generating land disturbance in the next treatment area.

2.6 Potential Construction Activity and Pollutant Sources

Construction activities that have the potential to contribute sediment to stormwater runoff include:

- Clearing and grubbing
- Stream diversion, dewatering, and rewatering
- Excavation and grading in and near wet meadows, channels, and secondary channels
- Soil storage, import, and export
- Onsite material handling, sorting, and staging
- Inappropriate application of water for dust control or irrigation

Construction activities that have the potential to contribute pollutants other than sediment to stormwater runoff include:

- Equipment and vehicle malfunctions and/or leaks have the potential to contribute oil, grease, fuel, hydraulic fluid, and coolants
- Inappropriate application of water for dust control or irrigation has the potential to contribute excess nutrients to stormwater runoff

- Inappropriate storage of general litter/trash could contribute pollutants to stormwater runoff

The anticipated activities and associated pollutants were used to select the Best Management Practices for the project. Location of anticipated pollutants and associated BMPs are shown on the Site Map in **Appendix A**.

For sampling requirements for non-visible pollutants associated with construction activity please refer to **Section 7.7.1**. For a complete list of onsite pollutants, refer to the Material Safety Data Sheets (MSDS), which are retained onsite at the construction trailer.

Table 2-2 contains a list of construction-related water quality threats and corresponding BMPs which should be used to protect water quality during construction. This is not a complete list of all potential water quality threats or BMPs. Technical notes for installation, monitoring and maintenance each BMP are listed in **Appendix H**.

Table 2-2. Construction activities that pose water quality threats and applicable BMPS.

Construction Activity	BMP Name	BMP#
Clear and Grub Operations	Scheduling Preservation of Existing Vegetation Water Conservation Practices	EC-1 EC-2 NS-1
Dewatering and Diversion	Scheduling Sediment Trap Gravel Bag Berms Coffer Dam	EC-1 SC-3 SC-6 -
General Litter and Waste	Solid Waste Management Hazardous Waste Management Sanitary/ Septic Waste Management	WM-5 WM-6 WM-9
Grading Operations	Scheduling Preservation of Existing Vegetation Soil Preparation / Roughening Fiber Rolls Wind Erosion Control Water Conservation Practices	EC-1 EC-2 EC-15 SC-5 WE-1 NS-1
Revegetation Materials and Operations	Scheduling Hydroseeding Straw Mulch Wood Mulching Water Conservation Practices	EC-1 EC-4 EC-6 EC-8 NS-1

Construction Activity	BMP Name	BMP#
	Potable Water/Irrigation	NS-7
	Stockpile Management	WM-3
Soil Import/Export Operations	Scheduling	EC-1
	Fiber Rolls	SC-5
	Wind Erosion Control	WE-1
	Material Delivery and Storage	WM-1
Stockpiling	Fiber Rolls	SC-5
	Wind Erosion Control	WE-1
	Material Use	WM-2
	Stockpile Management	WM-3
Vehicle Maintenance, Fueling, and Spills	Scheduling	EC-1
	Water Conservation Practices	NS-1
	Vehicle and Equipment Cleaning	NS-8
	Vehicle and Equipment Fueling	NS-9
	Vehicle and Equipment Maintenance	NS-10
	Material Use	WM-2
	Spill Prevention and Control	WM-4

2.7 Identification of Non-Stormwater Discharges

Non-stormwater discharges consist of discharges which do not originate from precipitation events. The General Permit provides allowances for specified non-stormwater discharges that do not cause erosion or carry other pollutants.

Non-stormwater discharges into storm drainage systems or waterways, which are not authorized under the General Permit and listed in the SWPPP, or authorized under a separate NPDES permit, are prohibited.

Non-stormwater discharges that are authorized from this project site include rerouting of existing stream flows around the project site through the designated stream bypass system.

Non-stormwater discharges will be managed with the stormwater and non-stormwater BMPs described in **Section 3** of this SWPPP and will be minimized by the QSP.

Activities at this site that may result in unauthorized non-stormwater discharges include:

- Vehicle and equipment cleaning, fueling and maintenance operations;
- Vehicle and equipment wash water, including concrete washout water;

- Runoff from dust control applications or dust palliatives;
- Sanitary and septic wastes; and
- Chemical leaks and/or spills of any kind including but not limited to petroleum, oil, etc.

Steps will be taken, including the implementation of appropriate BMPs, to ensure that unauthorized discharges are eliminated, controlled, disposed, or treated on-site.

Discharges of construction materials and wastes, such as fuel or paint, resulting from dumping, spills, or direct contact with rainwater or stormwater runoff, are also prohibited.

2.8 Required Site Map Information

The Project's Site Map(s) showing the Project location, surface water boundaries, geographic features, construction site perimeter, and general topography and other requirements identified in Attachment B of the General Permit is included in **Appendix A**.

3 BEST MANAGEMENT PRACTICES

3.1 Schedule for BMP Implementation

BMPs shall be implemented before work on a project site begins and shall remain in place for the duration of the work.

Work in or adjacent to the water ways shall be scheduled during periods of low flow to minimize impact and sediment supply to the waterway.

3.2 Site Management BMPs

3.2.1 Site Planning

Site planning integrates a range of specific BMPs to effectively anticipate, map and manage the flow of construction activities and materials on the construction site to maximize water quality protection. Thoughtful site planning is required throughout the entire construction process to create and maintain a safe, efficient, and low-impact construction site. See Factsheet EC-1 Scheduling for guidance on how to help organize the site and maximize means to prevent pollution.

3.2.2 Preservation of Vegetation

Protecting existing vegetation minimizes the potential of damaging existing trees, shrubs, and grasses that are intended to remain onsite after construction. Small trees and shrubs are being removed in some of the restoration areas of this Project. Refer to EC-2 under Site Management BMPs in **Appendix H** for specific details and guidance on protecting vegetation during construction.

3.2.3 Weed Prevention and Management

The Contractor shall be responsible for preventing introduction and spread of weeds. At a minimum, the following shall be implemented.

- On-site materials for BMP's shall be used whenever possible.
- Imported BMP straw or pine needle materials shall be certified weed-free (California noxious and agricultural), if applicable for the County. For example, use weed-free straw certified by a county agriculture department, coconut fiber, rice straw and/or native grass straw.

- Any sand, gravel, or fill material brought on-site shall be clean, debris-free, and devoid of invasive plant parts or seeds (certified or some sort of verification from source required). Do not borrow fill from weed-infested stockpiles, road shoulders or ditch lines.
- The Engineer's Representative shall inspect aggregate material sources (including but not limited to surrounding topsoil piles, gravel/sand piles or borrow pits). If it is determined the materials are contaminated with weed materials, the material shall be rejected and removed from the site at the Contractor's expense.
- All equipment entering the project area shall be cleaned and free of weed materials (i.e. stems, flowers, seeds, etc.) before and after entering the project area or loading and project materials.
- Staging and storage areas shall be maintained weed-free during the entire construction period.
- Prior to entering and leaving the project site, soil and plant materials shall be removed from tools, vehicles, equipment, clothing, boots and gear at a designated and approved cleaning area (Refer to inspection Checklist E in Cal-IPC Prevention of the Spread of Weeds: Best Management Practices for Land Managers, 3rd Edition.)
- A cleaning area for tools, equipment, and vehicles shall be designated that is easily accessible for monitoring and control, located away from waterways, areas of sensitive habitats or species, near areas already infested with invasive plants, contained with silt fences or soil berms, and be paved or have sealed surfaces to avoid re-accumulation of soil and plant material on cleaned vehicles and equipment.

As part of maintenance, the Engineer's Representative shall perform follow-up inspections at sites where erosion control materials have been used so that any invasive plant introductions are identified early and treated.

3.3 Erosion and Sediment Control BMPs

Erosion and sediment control are a source control measure designed to prevent soil particles from being detached and transported in stormwater runoff. Erosion and Sediment Control BMPs protect the soil surface from erosion by covering and/or binding soil particles. Erosion and Sediment control BMPs will be used as the first line of defense

to protect against sediment discharges.

3.3.1 Erosion Control

Erosion control, also referred to as soil stabilization, consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Erosion control BMPs protect the soil surface by covering and/or binding soil particles.

The Truckee River Watershed Council will use native vegetation as erosion control and revegetation of the Project Site. Vegetation provides protective cover for disturbed soil and the propagated material can be used as a BMP measure for soil stabilization and erosion control.

The following measures will be implemented on this project to achieve effective temporary and permanent soil stabilization:

- Soil disturbance and compaction will be minimized to the greatest extent possible.
- Existing vegetation will be protected and preserved to the greatest extent possible.
- Construction activities will be scheduled such that existing vegetation is left undisturbed until immediately prior to grading or excavation.
- Soil stabilization BMPs will be deployed as soon as operationally feasible following soil disturbance.
- All disturbed soil areas (DSAs) outside of the channel will be stabilized with propagated materials, durable mulch materials (such as wood chips or pine needles), erosion control fabric or Bonded Fiber Matrix within 14 days of cessation of soil disturbing activities. Soil stabilization measures will be re-applied as necessary to maintain effectiveness.
- Disturbed areas within the channel shall be stabilized based on the specified channel treatments identified in the Engineering Plans (**Appendix B**).
- Sufficient soil stabilization materials (such as wood chips or pine needles) will be maintained on-site to enable rapid implementation in conformance with

requirements described in this SWPPP. Application areas include active and non-active areas that require winterization before October 15th.

- If a temporary irrigation system is installed (Contractor's option), the configuration and operation of the temporary irrigation system used for plant establishment will be closely monitored and adjusted such that irrigation water does not cause runoff, excessive ponding or erosion anywhere onsite.
- Stockpiles of erodible materials (such as soil or sand) will be watered and/or covered during windy conditions to prevent wind erosion.
- The entire site shall be winterized each season prior to the October 15th grading deadline.
- All grading and soil disturbance shall be stopped once the site has been winterized.
- At the completion of construction, all DSAs will be permanently stabilized using treatments described in the project plans.

Selected erosion control BMPs for this project include:

- EC-1 Scheduling
- EC-2 Preservation of Existing Vegetation,
- EC-3 Hydraulic Mulch
- EC-4 Hydroseeding
- EC-6 Straw Mulch
- EC-8 Wood Mulching
- EC-10 Velocity Dissipation Devices
- EC-15 Soil Preparation/Roughening
- EC-16 Non-Vegetative Stabilization

Refer to the BMP technical notes in **Appendix H** and the Engineering Plans in **Appendix B** for specific details and guidance.

3.3.1.1 Wood Chip Mulch

Wood chip mulch will be the primary method of temporary soil stabilization on this project. Wood chips will be applied to DSAs and shallow slopes at a depth of 1-inch or 85% coverage to provide adequate protection.

3.3.1.2 Pine Needle Mulch

Pine needles are particularly effective at stabilizing moderate to steep slopes since their interlocking structure helps them resist movement by water and gravity. However, they are not as durable as wood chips and should not be used in areas expected to be re-disturbed by vehicles or heavy equipment.

3.3.1.3 Hydraulically-Applied Mulch

If necessary, hydraulically-applied mulch may be used to provide temporary stabilization of DSAs, steep slopes, and stockpiles. Hydraulically-applied mulch used on this project shall consist only of wood fiber mulch applied with a water-resistant bonding agent.

3.3.2 Sediment Control

Sediment controls are structural measures that are intended to complement and enhance erosion control measures to prevent sediment discharges from construction areas. Sediment controls are designed to intercept, filter and/or settle out soil particles that have been mobilized by the force of water. Sediment Control measures shall be inspected at a minimum daily basis and prior to any rain event.

The following measures will be implemented on this Project to achieve sediment control objectives:

- Prior to the commencement of any soil disturbing activities, temporary sediment controls will be implemented along the down-gradient perimeter of disturbed soil areas.
- Linear sediment controls will be installed along the toe of slopes, face of slopes, and at grade breaks on disturbed slopes as necessary to prevent the downslope

transport of sediment. Placement and spacing of linear sediment controls will be specified in the field based on site-specific conditions and construction operations but shall meet the following minimum requirements.

Critical Slope/Sheet flow Length Combinations
(General Permit 2009-0009-DWQ, Attachment D, Section E.4)

Slope Percentage	Sheet flow length not to exceed
0-25%	20 feet
25-50%	15 feet
Over 50%	10 feet

- Fiber rolls, such as pine needles wattles (or equivalent linear sediment controls), will be placed along temporary construction access roads wherever surface runoff can discharge from the road prism and when the access road is within 10 feet of the river channel. Sediment controls shall be placed perpendicular to the direction of flow and weighted or staked such that 100% contact between the fiber roll and ground surface can be maintained during runoff events.
- Throughout the active construction season, sediment control BMPs will be inspected, maintained and replaced such that they function in accordance with technical specifications.
- A 20% overage of wattles, gravel bags, silt fence, and plastic sheeting will be maintained onsite for the duration of the project to enable implementation of temporary sediment controls in the event of predicted rain, and for rapid response to failures or emergencies.

Locations and suggested sediment control BMPs for this Project are shown on the Site Maps in **Appendix A**.

Selected temporary sediment control BMPs appropriate for this Project are listed below:

- SE-3 Sediment Trap
- SE-5 Fiber Rolls (Pine Needle Wattles)
- SE-6 Gravel Bag Berm

Refer to the BMP technical notes in **Appendix H** and the Engineering Plans in **Appendix B** for specific details and guidance.

3.3.2.1 Sediment Trap

A sediment trap may be used at the outlet of the dewatering and diversion pipe to help sediment settle out before being discharged to the river channel.

3.3.2.2 Fiber Rolls or Pine Needle Wattles

Fiber rolls, such as pine needle wattles, shall be installed between areas of soil disturbance and water way to limit sediment transport. Fiber rolls shall be installed along access roads where the water way is within 10 feet, and there is positive flow direction or gradient towards the waterway. Fiber roll have been limited to these areas due to the natural vegetation will act as a buffer limiting the amount of sediment that can get to the water way. Fiber rolls are a temporary BMP and shall be removed once the grading site has been stabilized and the completion of construction. Refer to SE-5 for fiber roll installation.

3.3.2.3 Gravel Bag Berms

Gravel bags can be placed as a linear control BMPS in areas where fiber rolls cannot provide adequate protection, like along uneven terrain. Refer to SE-6 for additional information. Sandbags shall not be used at this site.

Gravel bags barriers shall also be used to create the coffer dam for dewatering of the Little Truckee River.

3.3.3 Wind Erosion Control

The wind erosion BMP is to control dust generated by construction activities, from grading areas and roadways. Water will be applied to DSAs and unpaved roads to control dust and wind erosion. Water application rates will be regulated as necessary such that no runoff or pooling occurs. Refer to WE-1 for wind erosion control guidance.

3.4 Non-Stormwater Controls and Waste and Materials Management

3.4.1 Non-Stormwater Controls

Non-stormwater discharges into storm drainage systems or waterways, which are not authorized under the General Permit, are prohibited. Non-stormwater discharges for which a separate NPDES permit is required by the local Regional Water Board are prohibited unless coverage under the separate NPDES permit has been obtained for

the discharge. The selection of non-stormwater BMPs is based on the list of construction activities with a potential for non-stormwater discharges identified in **Section 2.7** of this SWPPP.

The following non-stormwater control BMPs that shall be implemented to control sediment on the construction site. Fact Sheets for temporary non-stormwater control BMPs are provided in **Appendix H**.

- NS-1 Water Conservation Practices
- NS-2 Temporary Stream Crossing
- NS-6 Illicit Connection/Discharge
- NS-7 Potable Water/Irrigation
- NS-8 Vehicle and Equipment Cleaning
- NS-9 Vehicle and Equipment Fueling
- NS-10 Vehicle and Equipment Maintenance

3.4.1.1 Vehicle and Equipment Operations

Several types of vehicles and equipment will be used on-site throughout the project, including excavators, loaders, rollers, trucks and trailers, backhoes, generators, and compressors. Vehicle cleaning will not be performed on-site. Self-propelled vehicles will be fueled off-site, if practical. Fuel trucks, each equipped with absorbent spill clean-up materials, can be used for on-site fueling at the borrow areas. All vehicle maintenance and mobile fueling operations will be conducted at least 50 feet away from operational inlets and drainage facilities and on a level graded area. Drip pans will be used for all mobile fueling. Fueling trucks shall be taken off-site for overnight storage, or if a fueling truck is parked and remains onsite overnight, it shall be parked on level grade and protected with berms and dikes to prevent runon, runoff, and to contain spills. Drip pans or absorbent pads will be used for all vehicle and equipment maintenance activities that involve grease, oil, solvents, or other vehicle fluids. Drip pans or absorbent pads will be used for overnight/long-term storage of on-site vehicles and equipment with minor fluid leaks that cannot be repaired the same day.

3.4.2 Diversion and Dewatering

Construction during low flow conditions will limit the amount of diversion and/or dewatering required for the Project. However, the Project includes work in the Little Truckee River channel such that diversion and/or dewatering will be required. Instream pollution by construction sediment can be minimized by installing a full stream diversion.

The Site Maps and the Engineering Plans provide initial direction of installation of the BMP for the stream channel diversion, but field adjustments will be required to confirm the locations are most appropriate locations for both the initial gravel bag cofferdam and for the discharge location. Field adjustments can be made based on the specific site requirements, constructability, and surface water levels. Any changes to the locations or methods shall be done with the approval of the Engineer's Representative and the QSP.

The purpose of the full stream diversion is to redirect all the flow around the work area to allow for work to occur within the stream channel. A temporary diversion cofferdam will be made using gravel bags and plastic sheeting. The cofferdam shall create a pool of water that will then be pumped and piped around the project site. The pump and pipe system shall be sized to accommodate flow ranges from three (3) to nine (9) cubic feet per second. Any remaining ponded water along the Little Truckee River will be screened for fish and dewatered using a sump-pump and discharged onto the floodplain at least 50 feet from the active channel and grading area. All travel along the stream channel for dewatering shall be minimized in areas where no grading will occur (Channel Fill Treatment Type A).

The discharge location of the diversion pipe shall be field verified by the QSP, selecting a location that will minimize erosion. The outlet shall be places in a location of willow or large rocks where flows will be dispersed without increasing erosion and mobilizing sediment to the river channel. Should three-inch-deep rills that extend for a minimum of 25-feet be generated at any point during the diversion, the location and method for flow reintroduction shall be revisited and adjusted as needed, with the approval and input from the project engineer and QSP.

Stream Diversions are a temporary BMP and shall be removed once the grading site has been stabilized and the completion of construction. Refer to the Engineering Plans for additional design and installation details. Water from the diversion shall be reintroduced to the channel over a velocity dissipation area, or other natural dissipation area as

determined in the field by the Engineer's Representative. The objective of reintroducing flows will be to minimize erosion and sediment transport from the diversion.

See Sheet 2.1 Dewatering and Diversion Plan in **Appendix B** for additional information.

3.4.3 Waste Management and Material Pollution Control

All chemicals stored on site will be stored in a designated staging area in a manner that prevents any spillage or leakage and prevents exposure to precipitation or surface run-on. Such methods include storing chemicals in locked storage containers or in covered, water-tight containers on pallets with secondary containment. Sanitary facilities onsite will be located at least 50 feet away from any surface flow paths, placed on drip pans, and regularly serviced per manufacturer's specifications. All dumpsters and other waste disposal containers will be regularly checked for leaks and covered prior to and during all rain events. Specific BMPs applicable to waste management and storage at this site include:

- WM-1 Material Delivery and Storage
- WM-2 Material Use
- WM-3 Stockpile Management
- WM-4 Spill Prevention and Control
- WM-5 Solid Waste Management
- WM-6 Hazardous Waste Management
- WM-9 Sanitary Waste Management

Refer to the Waste Management BMPs in **Appendix H** for specific implementation guidance on proper management and storage of waste materials.

4 BMP INSPECTION, MAINTENANCE, AND RAIN EVENT ACTION PLAN

4.1 BMP Inspection and Maintenance

The General Permit requires routine weekly inspections of BMPs, along with inspections before, during, and after qualifying rain events. A BMP inspection checklist must be filled out for inspections and maintained on-site with the SWPPP. The inspection checklist includes the necessary information covered in **Section 7.6**. A blank inspection Visual Monitoring and BMP Inspection checklist can be found in **Appendix I**. Completed checklists shall be kept in CSMP Records Section.

BMPs shall be maintained regularly to ensure proper and effective functionality. If necessary, corrective actions shall be implemented within 72 hours of identified deficiencies and associated amendments to the SWPPP shall be prepared by the QSD.

Specific details for maintenance, inspection, and repair of Construction Site BMPs can be found in the BMP Factsheets in **Appendix H**.

4.2 Rain Event Action Plans

The Rain Event Action Plans (REAP) is written document designed to be used as a planning tool by the QSP to protect exposed portions of project sites and to ensure that the discharger has adequate materials, staff, and time to implement erosion and sediment control measures. These measures are intended to reduce the amount of sediment and other pollutants that could be generated during the rain event. It is the responsibility of the QSP to be aware of precipitation forecast and to obtain and print copies of forecasted precipitation from NOAA's National Weather Service Forecast Office.

The SWPPP includes REAP templates but the QSP will need to customize them for each rain event. Site-specific REAP templates for each applicable project phase can be found in **Appendix J**. The QSP shall maintain a paper copy of completed REAPs in compliance with the record retention requirements **Section 1.4.2** of this SWPPP. Completed REAPs shall be maintained in CSMP Records Section.

The QSP will develop an event-specific REAP 48 hours in advance of a precipitation event forecast to have a 50% or greater chance of producing precipitation in the Project area. The REAP will be onsite and be implemented 24 hours in advance of any the predicted precipitation event.

At a minimum the REAP will include the following site and phase-specific information:

- Site Address;
- Calculated Risk Level (2 or 3);
- Site Stormwater Manager Information including the name, company and 24-hour emergency telephone number;
- Erosion and Sediment Control Provider information including the name, company and 24-hour emergency telephone number;
- Stormwater Sampling Agent information including the name, company, and 24-hour emergency telephone number;
- Activities associated with each construction phase;
- Trades active on the construction site during each construction phase;
- Trade contractor information; and
- Recommended actions for each project phase.

5 TRAINING

Appendix L identifies the QSPs for the Project. To promote stormwater management awareness specific for this Project, periodic training of job-site personnel shall be included as part of routine Project meetings (e.g., daily/weekly tailgate safety meetings), or task-specific training as needed.

The QSP shall be responsible for providing this information at the meetings, and subsequently completing the training logs shown in **Appendix K**, which identifies the site-specific stormwater topics covered as well as the names of site personnel who attended the meeting. Tasks may be delegated to trained employees by the QSP provided adequate supervision and oversight is provided. Training shall correspond to the specific task delegated including, SWPPP implementation, BMP inspection and maintenance, and record keeping.

Documentation of training activities (formal and informal) is retained in SWPPP **Appendix K**.

6 RESPONSIBLE PARTIES AND OPERATORS

6.1 Responsible Parties

Approved Signatories who are responsible for SWPPP implementation and have authority to sign permit-related documents are listed below. Written authorizations from the LRP for these individuals are provided in **Appendix L**. The Approved Signatories assigned to this Project are:

Name	Title	Phone Number
Lisa Wallace	Executive Director	530.550.8760 x 2#
Beth Christman	Director of Restoration Programs	530.550.8760 x 1#

QSPs identified for the Project are identified in **Appendix L**. The QSP shall have primary responsibility and significant authority for the implementation, maintenance and inspection/monitoring of SWPPP requirements. The QSP will be available at all times throughout the duration of the Project. Duties of the QSP include but are not limited to:

- Implementing all elements of the General Permit and SWPPP, including but not limited to:
    - Ensuring all BMPs are implemented, inspected, and properly maintained;
    - Performing non-stormwater and stormwater visual observations and inspections;
    - Performing non-stormwater and storm sampling and analysis, as required; and
    - Performing routine inspections and observations.
- Implementing non-stormwater management, and materials and waste management activities such as: monitoring discharges; general site clean-up;

vehicle and equipment cleaning, fueling and maintenance; spill control; ensuring that no materials other than stormwater are discharged in quantities which will have an adverse effect on receiving waters; etc.

- The QSP may delegate these inspections and activities to an appropriately trained employee but shall ensure adequacy and adequate deployment.
- Ensuring elimination of unauthorized discharges.
- The QSPs shall be assigned authority by the LRP to mobilize crews in order to make immediate repairs to the control measures.
- Coordinate with the Contractor(s) to assure all of the necessary corrections/repairs are made immediately and that the Project complies with the SWPPP, the General Permit and approved plans at all times.
- Notifying the LRP or Authorized Signatory immediately of off-site discharges or other non-compliance events.

6.2 Contractor List

Contractor [To be filled in when known]

Name:

Title:

Company:

Address:

Phone Number:

Number (24/7):

7 CONSTRUCTION SITE MONITORING PROGRAM

7.1 Purpose

This Construction Site Monitoring Program was developed to address the following objectives:

- To demonstrate that the Project complies with the Discharge Prohibitions and Numeric Action Limits of the Construction General Permit;
- To determine whether non-visible pollutants are present at the construction site and are causing or contributing to exceedances of water quality objectives;
- To determine whether immediate corrective actions, additional Best Management Practices (BMP) implementation, or SWPPP revisions are necessary to reduce pollutants in stormwater discharges and authorized non-stormwater discharges;
- To determine whether BMPs included in the SWPPP and REAP are effective in preventing or reducing pollutants in stormwater discharges and authorized non-stormwater discharges.

7.2 Applicability of Permit Requirements

This Project has been determined to be a Risk Level II Project. The General Permit identifies the following types of monitoring as being applicable for Risk Level II projects:

- Visual inspections of Best Management Practices (BMPs);
- Visual monitoring of the site related to qualifying storm events;
- Visual monitoring of the site for non-stormwater discharges;
- Sampling and analysis of construction site runoff for pH and turbidity;
- Sampling and analysis of construction site runoff for non-visible pollutants when applicable; and
- Sampling and analysis of non-stormwater discharges when applicable.

7.3 Weather and Rain Event Tracking

Visual monitoring, inspections, and sampling requirements of the General Permit are triggered by a qualifying rain event. The General Permit defines a qualifying rain event as any event that produces 0.5-inchs of precipitation. A minimum of 48 hours of dry weather will be used to distinguish between separate qualifying storm events. An equivalent qualifying snow event is assumed to be 5-inches or more of snowfall, based on snow to rain ratio of 10:1.

7.3.1 Weather Tracking

The QSP should daily consult the National Oceanographic and Atmospheric Administration (NOAA) for the weather forecasts. The closest NOAA weather service office if located in Reno, Nevada. These forecasts can be obtained at https://www.weather.gov. Weather reports should be printed and attached to the BMP inspection form or REAP.

7.3.2 Rain Gages

The QSP shall use the NRCS SNOTEL[1] Site for Independence Creek for tracking rainfall for the Project. The SNOTEL Site is roughly 2.5 miles southwest of the Project and at similar elevation. The site for observed rainfall data at the Independence Creek SNOTEL site is https://wcc.sc.egov.usda.gov/nwcc/site?sitenum=540.

7.4 Monitoring Locations

Monitoring locations are shown on the Site Maps in **Appendix A**. Monitoring locations are described in **Section 7.6** and **Section 7.7**.

Whenever changes in the construction site might affect the appropriateness of sampling locations, the sampling locations shall be revised accordingly. All such revisions shall be implemented as soon as feasible and the SWPPP amended. Temporary changes that result in a one-time additional sampling location do not require a SWPPP amendment.

[1] Natural Resources Conservation Service Snow Telemetry Sites

7.5 Safety and Monitoring Exemptions

This Project is not required to collect samples or conduct visual observations (inspections) under the following conditions:

- During dangerous weather conditions such as flooding and electrical storms.
- Outside of scheduled site business hours.
- The site is inaccessible due to snow cover.

Scheduled site business hours are: **Monday – Friday, 7AM – 5PM.**

If monitoring (visual monitoring or sample collection) of the Project is unsafe because of the dangerous conditions noted above, then the QSP shall document the conditions for why an exception to performing the monitoring was necessary.

7.6 Visual Monitoring

Visual monitoring includes observations and inspections. Inspections of BMPs are required to identify and record BMPs that need maintenance to operate effectively, that has failed, or that could fail to operate as intended. Visual observations of the site are required to observe stormwater drainage areas to identify any spills, leaks, or uncontrolled pollutant sources.

Table 7-1 identifies the required frequency of visual observations and inspections.

Table 7-1. Summary of Visual Monitoring and Inspections

Type of Inspection	Frequency
Routine Inspections	
BMP Inspections	Weekly[1]
BMP Inspections – Tracking Control	Daily
BMP Inspections- Sediment Controls	Daily
Non-Stormwater Discharge Observations	Quarterly during business hours
Rain Event Triggered Inspections	

Type of Inspection	Frequency
Site Inspections Prior to a Qualifying Event	Within 48 hours of a qualifying event [2]
BMP Inspections During an Extended Storm Event	Every 24-hour period of a rain event[3]
Site Inspections Following a Qualifying Event	Within 48 hours of a qualifying event[2]

[1] Most BMPs must be inspected weekly; those identified below must be inspected more frequently.
[2] Inspections are required during scheduled site operating hours.
[3] Inspections are required during scheduled site operating hours regardless of the amount of precipitation on any given day.

7.6.1 Routine Observations and Inspections

Routine site inspections and visual monitoring are necessary to ensure that the Project is in compliance with the requirements of the Construction General Permit.

7.6.1.1 Routine BMP Inspections

Inspections of BMPs are conducted to identify and record:

- BMPs that are properly installed;
- BMPs that need maintenance to operate effectively;
- BMPs that have failed; or
- BMPs that could fail to operate as intended.

7.6.1.2 Non-Stormwater Discharge Observations

Each drainage area will be inspected for the presence of or indications of prior unauthorized and authorized non-stormwater discharges. Inspections will record:

- Presence or evidence of any non-stormwater discharge (authorized or unauthorized);
- Pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.); and
- Source of discharge.

7.6.2 Rain-Event Triggered Observations and Inspections

Visual observations of the site and inspections of BMPs are required prior to a qualifying rain event; following a qualifying rain event, and every 24-hour period during a qualifying rain event. Pre-rain inspections will be conducted after consulting NOAA and determining that a precipitation event with a 50% or greater probability of precipitation has been predicted.

7.6.2.1 Visual Observations Prior to a Forecasted Qualifying Rain Event

Within 48-hours prior to a qualifying event, a stormwater visual monitoring site inspection will include observations of the following locations:

- Stormwater drainage areas to identify any spills, leaks, or uncontrolled pollutant sources; and
- BMPs to identify if they have been properly implemented.

Consistent with guidance from the State Water Resources Control Board, pre-rain BMP inspections and visual monitoring will be triggered by a NOAA forecast that indicates a probability of precipitation of 50% or more in the project area.

7.6.2.2 BMP Inspections During an Extended Storm Event

During an extended rain event, storm continuing for multiple days, BMP inspections will be conducted to identify and record:

- BMPs that are properly installed;
- BMPs that need maintenance to operate effectively;
- BMPs that have failed; or
- BMPs that could fail to operate as intended.

If the construction site is not accessible during the precipitation event, the visual inspections shall be performed at all relevant outfalls, discharge points, downstream locations. The reason why the construction site could not be inspected and the location attempted for inspection shall be well documented on the Inspection checklist. The inspections should record any projected maintenance activities.

7.6.2.3 Visual Observations Following a Qualifying Rain Event

Within 48 hours following a qualifying rain event (0.5-inches of rain or 5-inches of snow) a stormwater visual monitoring site inspection is required to observe:

- Stormwater drainage areas to identify any spills, leaks, or uncontrolled pollutant sources;
- BMPs to identify if they have been properly designed, implemented, and effective;
- Need for additional BMPs;
- Any stormwater storage and containment areas to detect leaks and ensure maintenance of adequate freeboard; and
- Discharge of stored or contained rain water.

7.6.3 Visual Monitoring Procedures

Visual monitoring shall be conducted by the QSP or staff trained by and under the supervision of the QSP.

The name(s) and contact number(s) of the site visual monitoring personnel are listed below, and their training qualifications are provided in **Appendix K**.

Assigned inspector: NAME OF INSPECTOR Contact phone: TELEPHONE NUMBER

Alternate inspector: NAME OF INSPECTOR Contact phone: TELEPHONE NUMBER

Stormwater observations shall be documented on the *Visual Monitoring and BMP Inspection Form* (**Appendix I**). Any photographs used to document observations will be referenced on the stormwater site inspection report and maintained with the Monitoring Records.

The QSP shall submit the inspections reports weekly or after the completion of a storm event to the LRP or representative. The QSP shall conduct visual observations (inspections) during business hours only. Should the inspection find that corrective actions are required, the QSP shall submit the inspection report to the LRP or Representative within 24 hours of the inspection.

The completed reports will be kept onsite with the SWPPP.

7.6.4 Visual Monitoring Follow-Up and Reporting

Correction of deficiencies identified by the observations or inspections, including required repairs or maintenance of BMPs, shall be initiated and completed as soon as possible.

If identified deficiencies require design changes, including additional BMPs, the implementation of changes will be initiated within 72 hours of identification and be completed as soon as possible. When design changes to BMPs are required, the SWPPP shall be amended to reflect the changes.

Deficiencies identified in site inspection reports and correction of deficiencies will be tracked on the *Inspection Field Log Sheet* or *BMP Inspection Report* and shall be submitted to the QSP and shall be kept with the SWPPP.

The QSP shall within two (2) days of the inspection submit copies of the completed *Inspection Field Log Sheet* or *BMP Inspection Report* with the corrective actions to the LRP or representative.

Results of visual monitoring must be summarized and reported in the Annual Report.

7.6.5 Visual Monitoring Locations

The inspections and observations identified in **Section 7.6.1** and **Section 7.6.2** will be conducted at the locations identified in this section.

BMP locations are shown on the Site Maps in SWPPP **Appendix A**.

Visual monitoring is required on the four (4) channel fill areas, the five (5) borrow areas and one (1) main staging and storage area. All areas shall be visually monitored when an area is being worked on. There are six (6) access points from the borrow areas to the channel fill areas, that require monitoring during use and for one-week post use to ensure bank stability.

Monitoring shall be done on all active construction sites.

7.7 Water Quality Sampling and Analysis

7.7.1 Sampling and Analysis Plan for Non-Stormwater/Non-Visible Pollutants

7.7.1.1 Potential Non-Visible Pollutants

The following is a list of construction materials that will be used and activities that will be performed which have the potential to contribute pollutants other than sediment to stormwater runoff:

- Vehicle fluids including oil, grease, fuel, hydraulic fluid, and coolants
- Vehicle fuels including gasoline and diesel
- Raw landscaping materials and wastes including topsoil

7.7.1.2 Potential Non-Stormwater Pollutants

Sampling of non-stormwater discharges will be conducted when an authorized or unauthorized non-stormwater discharge is observed discharging from the Project site. In the event that non-stormwater discharges run-on to the Project site from offsite locations, and this run-on has the potential to contribute to a violation of a NAL, the run-on will also be sampled.

The following authorized non-stormwater discharges identified in **Section 2.7**, have the potential to be discharged from the Project site.

- Flows through Little Truckee River; and
- Tributaries or sheet flow to Little Truckee River

In addition to the above authorized stormwater discharges, some construction activities have the potential to result in an unplanned (unauthorized) non-stormwater discharge if BMPs fail. These activities include:

- Runoff from equipment at channel access points (when equipment is driving through water); and
- Runoff from equipment during instream work (when water is still present).

7.7.1.3 Sample Collection Criteria

Sampling for non-stormwater/non-visible pollutants will be conducted if a breach,

malfunction, leakage, or spill is identified that has the potential to result in the discharge of a non-visible pollutant, or the discharge of a non-visible pollutant is already occurring. Sampling will be conducted using the collection and handling methods below and analyzed for the specific non-visible pollutants that may have been transported by stormwater to the discharge point(s) for the applicable drainage area. Additionally, samples will also be collected of stormwater runoff that has not come into contact with the pollutants of concern and analyzed for comparison with the non-visible pollutant discharge sample.

7.7.1.4 Sample Collection Procedures

Discharge samples will be collected at designated sampling locations or other discharge locations (as appropriate) for observed breaches, malfunctions, leakages, spills, or other operations that triggered the sampling event. Grab samples will be collected and preserved in accordance with the methods summarized in **Table 7-2** and **Table 7-3**. Sampling will only be conducted by staff trained in the sampling collection, handling and documentation procedures below.

Samples will be collected by placing a separate sample container directly into a stream of water down-gradient and in close proximity to the potential non-visible pollutant discharge location. This separate sample container will be used to collect the water, which will be transferred to sample bottles for laboratory analysis. The up-gradient and uncontaminated background samples shall be collected first prior to collecting the down-gradient to minimize cross-contamination. In each location, the sampling personnel will collect the water up-gradient of where they are standing. Once the separate sample container is filled, the water sample will be poured directly into sample bottles provided by the laboratory for the analyte(s) being monitored.

Table 7-2 Sample Collection, Preservation, and Typical Analysis for Monitoring Non-Stormwater Discharges

Constituent	Analytical Method	Minimum Sample Volume	Sample Bottle	Sample Preservation	Reporting Limit	Maximum Holding Time
VOCs-Solvents	EPA 8260B	3 x 40 mL	VOA-glass	Store at 4°C, HCl to pH<2	1 µg/L	14 days
SVOCs	EPA 8270C	1 x 1 L	Glass-Amber	Store at 4°C	10 µg/L	7 days
Pesticides/PCBs	EPA 8081A/8082	1 x 1 L	Glass-Amber	Store at 4°C	0.1µg/L	7 days
Herbicides	EPA 8151A	1 x 1 L	Glass-Amber	Store at 4°C	Check Lab	7 days
BOD	EPA 405.1	1 x 500 mL	Polypropylene	Store at 4°C	1 mg/L	48 hours
COD	EPA 410.4	1 x 250 mL	Glass-Amber	Store at 4°C, H_2SO_4 to pH<2	5 mg/L	28 days
DO	SM 4500-0 G	1 x 250 mL	Glass-Amber	Store at 4°C	Check Lab	8 hours
pH	EPA 150.1	1 x 100 mL	Polypropylene	None	Unitless	Immediate
Alkalinity	SM 2320B	1 x 250 mL	Polypropylene	Store at 4°C	1 mg/L	14 days
Metals (Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co Cu, Fe, Pb, Mg, Mn, Mo, Ni, Se, Na, Th, Va, Zn)	EPA 6010B/7470A	1 x 250 mL	Polypropylene	Store at 4°C, HNO_3 to pH<2	0.1 mg/L	6 months
Metals (Chromium VI)	EPA 7199	1 x 500 mL	Polypropylene	Store at 4°C	1µg/L	24 hours

Notes:
°C - Degrees Celsius
BOD - Biological Oxygen Demand
COD - Chemical Oxygen Demand
DO - Dissolved Oxygen
EPA - Environmental Protection Agency
HCl - Hydrogen Chloride
H_2SO_4 - Hydrogen Sulfide
HNO_3 - Nitric Acid
L - Liter
mg/L - Milligrams per Liter
µg/L - Micrograms per Liter
mL - Milliliter
PCB - Polychlorinated Biphenyl
SVOC - Semi-Volatile Organic Compound
SM - Standard Method
TPH - Total Petroleum Hydrocarbons
TRPH - Total Recoverable Petroleum Hydrocarbons
VOA - Volatile Organic Analysis
VOC - Volatile Organic Compound

Table 7-3 Sample Collection Specifications and Typical Analysis for Monitoring Typical Construction-Related Stormwater Discharges

Constituent	Analytical Method	Minimum Sample Volume	Sample Bottle Type	Sample Preservation
Total Dissolved Solids	EPA 160.1	2 x 250 mL	Polypropylene	Store at 4°C
Total Suspended Solids	EPA 160.2	2 x 250 mL	Polypropylene	Store at 4°C
Total Settleable Solids	SM 2540 F	2 x 250 mL	Polypropylene	Store at 4°C
Total Kjeldahl Nitrogen	EPA 351.2	2 x 250 mL	Polypropylene	Store at 4°C
Nitrite	EPA 354.1	2 x 250 mL	Polypropylene	Store at 4°C
Total Phosphorus	EPA 365.3	2 x 250 mL	Polypropylene	Store at 4°C
Total Nitrogen	Calculated	2 x 250 mL	Polypropylene	Store at 4°C
Nitrate/Nitrite	EPA 353.1	2 x 250 mL	Polypropylene	Store at 4°C
Turbidity	EPA 180.1	250 mL	Polypropylene	Store at 4°C
Dissolved Oxygen	SM 4500-0 G	100 mL	Polypropylene	Store at 4°C, 8 hour hold time
Oil and Grease	EPA 1664	500 mL	Glass-Amber	Store at 4°C, H_2SO_4

To maintain sample integrity and prevent cross-contamination, sampling collection personnel will:

- Wear a clean pair of surgical gloves prior to the collection and handling of each sample at each location
- Protect the inside of the sample bottle from contamination by not allowing it to come into contact with any material other than the water sample
- Discard sample bottles or sample lids that have been dropped onto the ground prior to sample collection
- Avoid leaving the cooler lid open for an extended period of time once samples are placed inside
- Avoid sampling near a running vehicle where exhaust fumes may impact the sample
- Avoid touching the exposed end of a sampling tube, if applicable

- Prevent rainwater from dripping from rain gear or other surfaces into sample bottles
- Avoid eating, smoking, or drinking during sample collection
- Avoid sneezing or coughing in the direction of an open sample bottle
- Minimize the exposure of the samples to direct sunlight, as sunlight may cause biochemical transformation of the sample to take place

7.7.1.5 Sample Handling Procedures

Immediately following collection, sample bottles for laboratory analytical testing will be capped, labeled, and documented on a Chain of Custody form provided by the analytical laboratory. Samples will be sealed in a re-sealable storage bag, placed in an ice-chilled cooler, at as near to 4 degrees Celsius as practicable, and delivered to a California state-certified laboratory within the holding times listed above in **Table 7-2** for the constituents sampled.

7.7.1.6 Sample Documentation Procedures

All original data documented on sample bottle identification labels, Chain of Custody forms, Effluent Sampling and Measurement Field Logs, and Visual Inspection Checklists will be recorded using waterproof ink. These will be considered accountable documents. If an error is made on an accountable document, the individual will make corrections by lining through the error and entering the correct information. The erroneous information will not be obliterated. All corrections will be initialed and dated. Sampling and analysis activities will be documented in the following manner:

- **Sample Bottle Identification Labels:** Sampling personnel will attach an identification label to each sample bottle. At a minimum, the following information will be recorded on the label, as appropriate:
    - Project name
    - Unique location and sample identification number
    - Quality assurance/quality control (QA/QC) samples shall be identified similarly using a unique location and sample identification number or designation
    - Collection date/time (no time applied to QA/QC samples)

  - Analysis constituent

- **Chain of Custody (COC) forms:** All samples to be analyzed by a laboratory will be accompanied by a COC form provided by the laboratory. Only the sample collectors will sign the COC form over to the lab. COC procedures will be strictly adhered to for QA/QC purposes.

- **Effluent Sampling and Measurement Field Log (Appendix N):**

  - Names of sampling personnel
  - Sampling date
  - Separate times for collected samples and QA/QC samples recorded to the nearest minute
  - Unique location and sample identification number
  - Analysis constituent(s)
  - Weather conditions (including precipitation amount)
  - Sampling measurements and results
  - Other pertinent data and observations

- **Visual Inspection Checklists:** When sampling is conducted, it will be noted on the Visual Inspection Checklist that samples for non-visible pollutants were collected during a rain event.

7.7.1.7 Data Evaluation and Reporting

The QSP shall complete an evaluation of the water quality sample analytical results.

Runoff/downgradient results shall be compared with the associated upgradient/unaffected results and any associated run-on results. Should the runoff/downgradient sample show an increased level of the tested analyte relative to the unaffected background sample, which cannot be explained by run-on results, the BMPs, site conditions, and surrounding influences shall be assessed to determine the probable cause for the increase.

As determined by the site and data evaluation, appropriate BMPs shall be repaired or modified to mitigate discharges of non-visible pollutant concentrations. Any revisions to the BMPs shall be recorded as an amendment to the SWPPP.

The General Permit prohibits the discharge of stormwater that contains hazardous substances equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4. The results of any non-stormwater discharge results that indicate the presence of a hazardous substance in excess of established reportable quantities shall be immediately reported to the Regional Water Board and other agencies as required by 40 C.F.R. §§ 117.3 and 302.4.

Results of non-visible pollutant monitoring shall be reported in the Annual Report.

7.7.2 Sampling and Analysis Plan for pH and Turbidity in Stormwater Runoff Discharges

Sampling and analysis of runoff for pH and turbidity are required for this Project during qualify storm events. This Plan describes the strategy for monitoring turbidity and pH levels of stormwater runoff discharges from the Project site and run-on that may contribute to an exceedance of a Numeric Action Level (NAL).

Samples for turbidity will be collected from all drainage areas with disturbed soil areas, and samples for pH will be collected from all drainage areas with a high risk of pH altering discharge. Sample will be collected during qualifying events, storms generating 0.5-inches or more of rainfall. An equivalent qualifying snow event is assumed to be 5-inches or more of snowfall, based on snow to rain ratio of 10:1.

7.7.2.1 Sample Collection Criteria

Stormwater runoff samples shall be collected for turbidity from each day of a qualifying rain event, during scheduled site business hours, that results in a discharge from the Project. At a minimum, turbidity samples will be collected from each site discharge location draining a disturbed area. A minimum of three samples will be collected per day of discharge during a qualifying event. Samples should be representative of the total discharge from the Project each day of discharge during the qualifying event.

Stored or collected water from a qualifying storm event when discharged shall be tested for turbidity and pH (when applicable). Stored or collected water from a qualifying event may be sampled at the point it is released from the storage or containment area or at the site discharge location.

Run-on samples shall be collected whenever the QSP identifies that run-on has the potential to contribute to an exceedance of a NAL.

7.7.2.2 Sampling Locations

Sampling locations are based on the Project runoff discharge locations and locations where run-on enters the sites; accessibility for sampling; and personnel safety. Planned pH and turbidity sampling locations are shown on the Site Maps in **Appendix A** and include the locations identified in **Table 7-4**.

Four (4) sampling locations on the Project have been identified for the collection of runoff samples. Table 7-4 also provides an estimate of the total project drainage area that drains through each of the sampling locations. Sampling location HP-01 shall only be sampled while the two upstream borrow pits are in active. The total drainage area at LM-01 is 32.8 square miles upstream of the project, and at LM-03 it is 34.2 square miles downstream of the project. However, the project only affects roughly 10.2 acres of land within Lower Perazzo Meadow.

Table 7-4 Turbidity and pH Runoff Sample Locations

Location No.	Location	Percentage of Project Area
LM-01*	Little Truckee River upstream of diversion and all construction activities – Station 0+0	0%
LM-02	Little Truckee River Channel Down stream of construction area – Station 53+50	98%
LM-03	Little Truckee River downstream of diversion and all construction activities – Station 54+50	100%
HP-01	*Henness Pass Road Culvert (additional monitoring location if upstream borrow pits are in use)*	*20%*

*Site background sample site located upstream from construction.
Stations are approximate based on Engineering Plans.

7.7.2.3 Sample Collection Procedures

Samples of discharge shall be collected at the designated sampling locations shown on the Site Maps in **Appendix A**. Run-on samples shall be collected as needed within close proximity of the point of run-on to the Project.

Only personnel trained in water quality sampling and measurements working under the direction of the QSP shall collect samples.

An adequate stock of monitoring supplies and equipment for monitoring turbidity and pH will be available prior to a sampling event. Monitoring supplies and equipment will be stored in a cool temperature environment that will not come into contact with rain or direct sunlight. Sampling personnel will be available to collect samples in accordance with the sampling schedule. Supplies maintained for the Project will include, but are not limited to, meters, extra batteries; clean powder-free nitrile gloves, sample collection equipment, appropriate sample containers, paper towels, personal rain gear, and *Effluent Sampling Field Log Sheets* and COC forms.

The QSP will obtain and maintain the field testing instruments for analyzing samples by contractor sampling personnel.

Samples shall be analyzed for the constituents indicated in **Table 7-5**.

Table 7-5. Sample Collection and Analysis for Monitoring Turbidity and pH

Parameter	Test Method	Minimum Sample Volume[1]	Sample Collection Container Type	Detection Limit (minimum)
Turbidity	Field meter/probe with calibrated portable instrument	500 mL	Polypropylene or Glass (Do not collect in meter sample cells)	1 NTU
pH	Field meter/probe with calibrated portable instrument or calibrated pH test kit	100 mL	Polypropylene	0.2 pH units

Notes: [1] Minimum sample volume recommended. Specific volume requirements will vary by instrument; check instrument manufacturer instructions.

L – Liter
mL – Milliliter
NTU – Nephelometric Turbidity Unit

Samples collected for field analysis, collection, analysis and equipment calibration shall be in accordance with the instrument manufacturer's specifications.

Immediately following collection, samples shall be tested in accordance with the instrument manufacturer's instructions and results recorded on the *Effluent Sampling Field Log Sheet*.

The instrument(s) listed in **Table 7-6** or equivalent will be used to analyze the following constituents:

Table 7-6 Turbidity and pH Instruments

Instrument (Manufacturer and Model)	Constituent
ExStik PH100, YSI Pro 10, or Hanna pH meters	pH
Hach 2100P portable turbidimeter or Hanna Meter 93703	Turbidity

The pH meter will be calibrated using a three-point calibration with pH 4, 7, and 10 standards at least once per month. A calibration check should be performed prior to each sampling event. Allowable drift is ± 0.2. If the calibration check reveals that pH meter needs calibration, calibration shall be performed before any samples are collected. Meter calibration will be documented on the calibration log which is kept with each meter.

Stormwater pH readings will be collected by either: 1) submerging the electrode end of the meter directly in the flow of the water being sampled, or 2) collecting stormwater in the small plastic container (kept with the pH meter) and submerging the electrode end of the meter directly in the collected water. Allow the meter to equilibrate for at least 30 seconds before recording pH to the nearest 0.1 pH unit. Make sure to replace the cap on the electrode and that the sponge inside the cap is moist (with pH 4 solution).

The turbidimeter will be calibrated at least once every three months (per manufacturer's recommendations), using the standard calibration instructions for the meter. A calibration check will be performed prior to each sampling event. Allowable drift is ± 2 NTUs. If calibration check indicates that meter needs calibration, calibration shall be performed before any samples are collected. Meter calibration will be documented on the calibration log which is kept with each meter.

Stormwater samples for turbidity will be collected using a separate container, and then transferred to the sample cell for reading. The sample cell should be wiped with a clean, lint-free cloth before each use. If settling particles are visible in the sample cell, take one reading before settling and one reading after settling, then average the two readings. If the sample reading is outside of the calibration standard limits, recalibrate with a different standard.

The QSP may authorize alternate equipment provided that the equipment meets the Construction General Permit's requirements.

7.7.2.4 Data Evaluation and Reporting

Immediately upon completing the measurements for the sampling event, the QSP shall evaluate the sampling results.

Numeric Action Levels

This Project is subject to NALs for pH and turbidity (**Table 7-7**). Compliance with the NAL for pH and turbidity is based on a daily average. Upon receiving the field log sheets, the QSP shall immediately calculate the arithmetic average of the turbidity samples, and the logarithmic average of the pH samples[2] to determine if the NALs, shown in the table below, have been exceeded.

Table 7-7 Numeric Action Levels

Parameter	Unit	Daily Average
pH	pH units	Lower NAL = 6.5 Upper NAL = 8.5
Turbidity	NTU	250 NTU

[2] Daily average pH values must be calculated through the logarithmic method. In order to calculate an average, you must: (1) Convert the pH measurements from logarithms to real numbers; (2) Take the average of the real numbers; and (3) Convert the average of the real numbers back to a logarithm.

The QSP shall within 2 days of the sample collection submit copies of the completed *Effluent Sampling Field Log Sheets* to LPR or Representative.

In the event that the pH or turbidity NAL is exceeded, the QSP shall immediately notify LRP, Owner and/or Representative and investigate the cause of the exceedance and identify corrective actions.

Exceedances of NALs shall be electronically reported to the State Water Board by LRP or Representative through the SMARTs system within ten (10) days of the conclusion of the storm event. If requested by the Regional Board, a NAL Exceedance report will be submitted. The NAL Exceedance Report must contain the following information:

- Analytical method(s), method reporting unit(s), and MDL(s) of each parameter;
- Date, place, time of sampling, visual observation, and/or measurements, including precipitation; and
- Description of the current BMPs associated with the sample that exceeded the NAL and the proposed corrective actions taken.

7.7.3 Training of Sampling Personnel

Sampling personnel shall be trained to collect, maintain, and ship samples in accordance with the Surface Water Ambient Monitoring Program (SWAMP) 2008 Quality Assurance Program Plan. Training records of designated contractor sampling personnel are provided in **Appendix K**.

7.7.4 Stormwater Sample Collection and Handling

Sampling, generally field testing, for pH and turbidity will occur daily during qualifying storm events. Sampling for other constituents will occur on an as needed basis to monitor water quality. For potential non-visible pollutants and non-stormwater pollutants, see **Section 7.7.1**.

7.7.4.1 Sample Collection

Stormwater samples shall be collected at the designated sampling locations shown on the Site Maps (**Appendix A**) and listed in the preceding sections. Samples shall be collected, maintained and shipped in accordance with the SWAMP 2008 Quality Assurance Program Plan.

Stormwater grab samples shall be collected and preserved in accordance with the methods identified in preceding sections.

All sampling personnel shall follow the same protocols to maintain sample integrity and prevent cross-contamination sample collection as presented in **Section 7.7.1** for non-stormwater pollutants.

The most important aspect of grab sampling is to collect a sample that represents the entire runoff stream. Typically, samples are collected by dipping the collection container in the runoff flow paths and streams as noted below or the use of a depth integrated sampler (like a DH-48).

- For small streams and flow paths, simply dip the bottle facing upstream until full.
- For larger stream that can be safely accessed, collect a sample in the middle of the flow stream by directly dipping the mouth of the bottle. Once again making sure that the opening of the bottle is facing upstream as to avoid any contamination by the sampler.
- For larger streams that cannot be safely waded, pole-samplers may be needed to safely access the representative flow.
- Avoid collecting samples from ponded, sluggish or stagnant water.
- Avoid collecting samples directly downstream from a bridge as the samples can be affected by the bridge structure or runoff from the road surface.

Note, that depending upon the specific analytical test, some containers may contain preservatives. These containers should **never** be dipped into the stream but filled indirectly from the collection container.

7.7.4.2 Sample Handling

Turbidity and pH measurements must be conducted immediately. Do not store turbidity or pH samples for later measurement.

Samples for laboratory analysis must be handled as follows. Immediately following sample collection:

- Cap sample containers;

- Complete sample container labels;
- Sealed containers in a re-sealable storage bag;
- Place sample containers into an ice-chilled cooler;
- Document sample information on the *Effluent Sampling Field Log Sheet*; and
- Complete the COC.

All samples for laboratory analysis must be maintained between at roughly 4 degrees Celsius during delivery to the laboratory. Samples must be kept on ice, or refrigerated, from sample collection through delivery to the laboratory. Place samples to be shipped inside coolers with ice. Make sure the sample bottles are well packaged to prevent breakage and secure cooler lids with packaging tape.

Ship samples that will be laboratory analyzed to the analytical laboratory right away. Hold times are measured from the time the sample is collected to the time the sample is analyzed. The General Permit requires that samples be received by the analytical laboratory within 48 hours of the physical sampling (unless required sooner by the analytical laboratory).

Laboratory Name:	High Sierra Water Laboratory
Address:	3090 N Lake Boulevard
City, State Zip:	Tahoe City, California 96145
Telephone Number:	530.584.2438
Point of Contact:	Collin Strasenburgh

7.7.4.3 Sample Documentation Procedures

All original data documented on sample bottle identification labels, *Effluent Sampling Field Log Sheet*, and COCs shall be recorded using waterproof ink. These shall be considered accountable documents. If an error is made on an accountable document, the individual shall make corrections by lining through the error and entering the correct information. The erroneous information shall not be obliterated. All corrections shall be initialed and dated.

Duplicate samples shall be identified consistent with the numbering system for other samples to prevent the laboratory from identifying duplicate samples. Duplicate samples shall be identified in the Effluent Sampling Field Log Sheet.

Sample documentation procedures include the following:

Sample Bottle Identification Labels: Sampling personnel shall attach an identification label to each sample bottle. Sample identification shall uniquely identify each sample location.

Field Log Sheets: Sampling personnel shall complete the *Effluent Sampling Field Log Sheet* for each sampling event, as appropriate.

Chain of Custody: Sampling personnel shall complete the COC for each sampling event for which samples are collected for laboratory analysis. The sampler will sign the COC when the sample(s) is turned over to the testing laboratory or courier.

7.8 Active Treatment System Monitoring

An Active Treatment System (ATS) will not be used for this Project. This Project does not require a project specific Sampling and Analysis Plan for an ATS because deployment of an ATS is not planned.

7.9 Bioassessment Monitoring

This Project is not subject to bioassessment monitoring because it is not a Risk Level 3 project.

7.10 Quality Assurance and Quality Control

Basic quality assurance and quality control (QA/QC) requirements

An effective Quality Assurance and Quality Control (QA/QC) plan shall be implemented as part of the CSMP to ensure that analytical data can be used with confidence. QA/QC procedures to be initiated include the following:

- Field logs;
- Clean sampling techniques;

- COCs;
- QA/QC Samples; and
- Data verification.

Each of these procedures is discussed in more detail in the following sections.

7.10.1 Field Logs

The purpose of field logs is to record sampling information and field observations during monitoring that may explain any uncharacteristic analytical results. Sampling information to be included in the field log include the date and time of water quality sample collection, sampling personnel, sample container identification numbers, and types of samples that were collected. Field observations should be noted in the field log for any abnormalities at the sampling location (color, odor, BMPs, etc.). Field measurements for pH and turbidity should also be recorded in the field log. A Visual Monitoring BMP Inspection Log, an Effluent Sampling and Measurement Field Log Sheets are included in **Appendix I** and **Appendix N**.

7.10.2 Clean Sampling Techniques

Clean sampling techniques involve the use of certified clean containers for sample collection and clean powder-free nitrile gloves during sample collection and handling. As discussed in **Section 7.7**, adoption of a clean sampling approach will minimize the chance of field contamination and questionable data results.

7.10.3 Chain of Custody

The sample COC is an important documentation step that tracks samples from collection through analysis to ensure the validity of the sample. Sample COC procedures include the following:

- Proper labeling of samples;
- Use of COC forms for all samples; and
- Prompt sample delivery to the analytical laboratory.

Analytical laboratories usually provide COC forms to be filled out for sample containers. A template COC is included in **Appendix O**.

7.10.4 QA/QC Samples

QA/QC samples provide an indication of the accuracy and precision of the sample collection; sample handling; field measurements; and analytical laboratory methods. The following types of QA/QC will be conducted for this Project:

- Field Duplicates at a frequency of 1 duplicate per storm event.
  (Required for all sampling plans with field measurements or laboratory analysis)
- Equipment Blanks at a frequency of 1 duplicate per sampling event.
  (Only needed if equipment used to collect samples could add the pollutants to sample)

7.10.4.1 Field Duplicates

Field duplicates provide verification of laboratory or field analysis and sample collection. Duplicate samples shall be collected, handled, and analyzed using the same protocols as primary samples. The sample location where field duplicates are collected shall be randomly selected from the discharge locations. Duplicate samples shall be collected immediately after the primary sample has been collected. Duplicate samples must be collected in the same manner and as close in time as possible to the original sample. Duplicate samples shall not influence any evaluations or conclusion.

7.10.4.2 Equipment Blanks

Equipment blanks provide verification that equipment has not introduced a pollutant into the sample. Equipment blanks are typically collected when:

- New equipment is used;
- Equipment that has been cleaned after use at a contaminated site;
- Equipment that is not dedicated for surface water sampling is used; or
- Whenever a new lot of filters is used when sampling metals.

7.10.5 Data Verification

After results are received from the analytical laboratory, the QSP shall verify the data to ensure that it is complete, accurate, and the appropriate QA/QC requirements were met. Data must be verified as soon as the data reports are received. Data verification shall include:

- Check the COC and laboratory reports.
  Make sure all requested analyses were performed, and all samples are accounted for in the reports.

- Check laboratory reports to make sure hold times were met and that the reporting levels meet or are lower than the reporting levels agreed to in the contract.

- Check data for outlier values and follow up with the laboratory.
  Occasionally typographical errors, unit reporting errors, or incomplete results are reported and should be easily detected. These errors need to be identified, clarified, and corrected quickly by the laboratory. The QSP should especially note data that is an order of magnitude or more different than similar locations or is inconsistent with previous data from the same location.

- Check laboratory QA/QC results.
  EPA establishes QA/QC checks and acceptable criteria for laboratory analyses. These data are typically reported along with the sample results. The QSP shall evaluate the reported QA/QC data to check for contamination (method, field, and equipment blanks), precision (laboratory matrix spike duplicates), and accuracy (matrix spikes and laboratory control samples). When QA/QC checks are outside acceptable ranges, the laboratory must flag the data, and usually provides an explanation of the potential impact to the sample results.

- Check the data set for outlier values and, accordingly, confirm results and re-analyze samples where appropriate.
  Sample re-analysis should only be undertaken when it appears that some part of the QA/QC resulted in a value out of the accepted range. Sample results may not be discounted unless the analytical laboratory identifies the required QA/QC criteria were not met and confirms this in writing.

Field data including inspections and observations must be verified as soon as the field logs are received, typically at the end of the sampling event. Field data verification shall include:

- Check field logs to make sure all required measurements were completed and appropriately documented;

- Check reported values that appear out of the typical range or inconsistent; Follow-up immediately to identify potential reporting or equipment problems, if appropriate, recalibrate equipment after sampling;

- Verify equipment calibrations;
- Review observations noted on the field logs; and
- Review notations of any errors and actions taken to correct the equipment or recording errors.

7.11 Records Retention

All records of stormwater monitoring information and copies of reports (including Annual Reports) must be retained for a period of at least three years from date of submittal or longer if required by the Regional Water Board.

Results of visual monitoring, field measurements, and laboratory analyses must be kept in the SWPPP along with COCs, and other documentation related to the monitoring.

Records are to be kept onsite while construction is ongoing. Records to be retained include:

- The date, place, and time of inspections, sampling, visual observations, and/or measurements, including precipitation;
- The individual(s) who performed the inspections, sampling, visual observation, and/or field measurements;
- The date and approximate time of field measurements and laboratory analyses;
- The individual(s) who performed the laboratory analyses;
- A summary of all analytical results, the method detection limits and reporting limits, and the analytical techniques or methods used;
- QA/QC records and results;
- Calibration records;
- Visual observation and sample collection exemption records; and
- The records of any corrective actions and follow-up activities that resulted from analytical results, visual observations, or inspections and NAL Exceedance Reports.

8 REFERENCES

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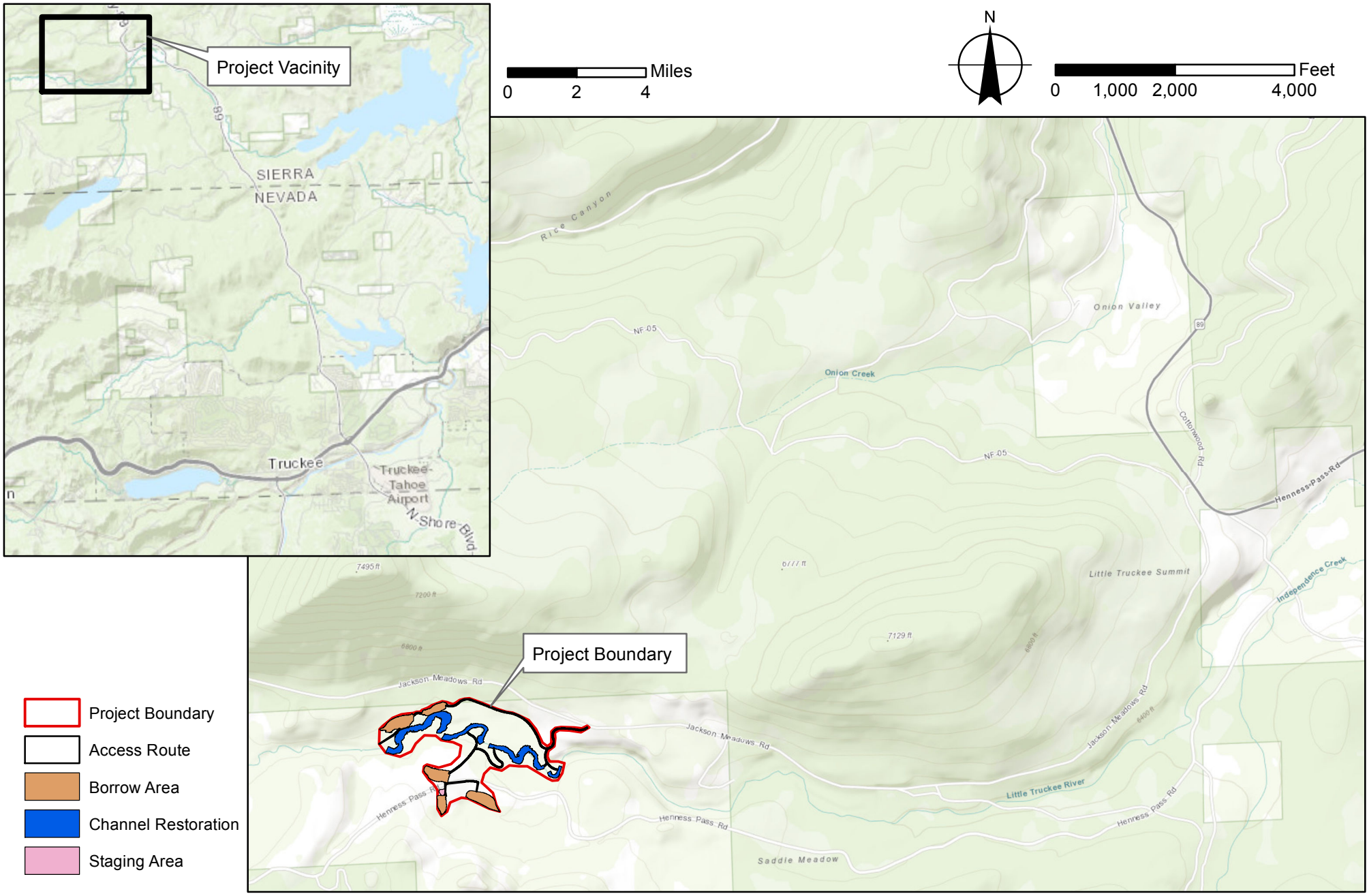
Saucedo, G., 2005 Geologic Map of the Lake Tahoe Basin, California and Nevada. California Geological Survey, Regional Geologic Map Series 1:100,000, Map No. 4.

Western Regional Climate Center (WRCC), 2018, Truckee Ranger Station, station TKE, available on-line at: https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?catruc+nca

CONSTRUCTION SITE MANAGEMENT PROGRAM RECORDS

<Place copies of CSMP recoded here>

APPENDIX A: SITE MAPS



Balance Hydrologics, Inc.

Figure 1. Lower Perazzo Meadow Restoration Project Location Map. Sierra County, California
Basemap source: Esri and GIS user community

Y:\GIS\Projects\218116 Lower Perazzo Meadow\Project Location Map

BMP Notes:
- Fiber rolls shall be installed along access roads where the water way is within 10 feet, and there is positive flow direction or gradient towards the waterway. Fiber roll have been limited to these areas as the natural vegetation will act as a buffer limiting the amount of sediment that can get to the water way.
- A sediment trap may be used at the outlet of the dewatering and diversion pipe to help sediment settle out before being discharged to the river channel. If needed the sediment trap would be located within the velocity dissipation area.

Location of discharge to be field verified by Project Engineer and QSP to disperse flows and minimize erosion.

Diversion Pump

Temporary cofferdam for channel dewatering and diversion

Diversion Pipe

Little Truckee River

LM-01

LM-03

LM-02

HP-01

Henness Pass Road

Culvert Crossing

- Moinitoring Point
- Culvert Outfall
- Velocity Dissipation Area
- Wattle
- 5 ft Contours
- Diversion Pipe
- Dewatering Element
- Channel Restoration
- Borrow Area
- Staging Area
- Access Route
- Channel Flow Arrow

Balance Hydrologics, Inc.

Y:\GIS\Projects\218116 Lower Perazzo Meadow\SWPPP\218116 SWPPP Monitoring LocationsV2.mxd

Figure 2. Monitoring Locations and BMPs for Lower Perazzo Meadow Restoration, Sierra County, California

Source: Orthophotograph 2018 and Esri GIS User Community

N

0 125 250 500 Feet

APPENDIX B: PROJECT ENGINEERING PLANS

See Attachment 1 of Bid Package

APPENDIX C: PERMIT REGISTRATION DOCUMENTS

Permit Registration Documents included in this Appendix

Y/N	Permit Registration Document
	Notice of Intent
	Risk Assessment
	Certification
	Post Construction Water Balance
	Copy of Annual Fee Receipt
N	ATS Design Documents
Y	Site Map, see Appendix A

APPENDIX D: SWPPP AMENDMENT CERTIFICATIONS

SWPPP Amendment No. _____

Project Name: _____

Project Number: _____

Date: _____

SWPPP Section Amended: _____

Amendment Description: _____

Qualified SWPPP Developer's Certification of the

Stormwater Pollution Prevention Plan Amendment

"This Stormwater Pollution Prevention Plan and appendices were prepared under my direction to meet the requirements of the California Construction General Permit (SWRCB Order No. 2009-009-DWQ as amended by 2010-0014-DWQ and 2012-0006-DWQ). I certify that I am a Qualified SWPPP Developer in good standing as of the date signed below."

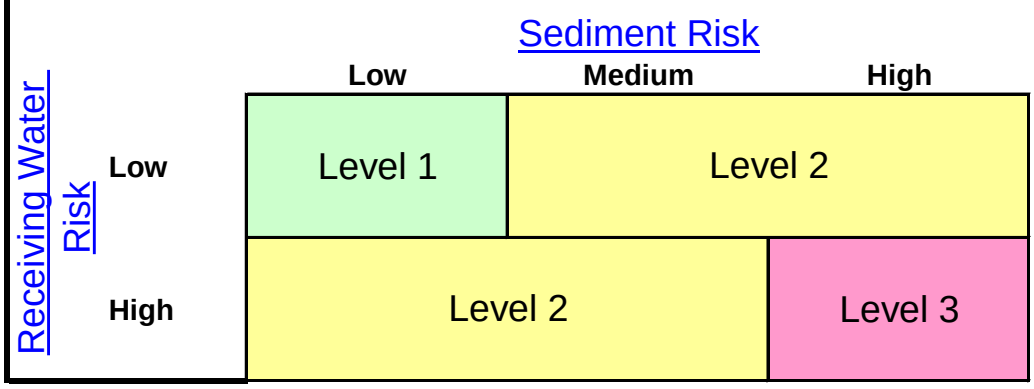
QSD's Signature	Date
QSD Name	QSD Certificate Number

APPENDIX E: RISK LEVEL DETERMINATION CALCULATIONS

	A	B	C
1	**Sediment Risk Factor Worksheet**		**Entry**
2	**A) R Factor - Rainfall runoff erosivity**		
3	Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-min intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S. Refer to the link below to determine the R factor for the project site.		
4	https://www.epa.gov/npdes/rainfall-erosivity-factor-calculator-small-construction-sites		
5	**R Factor Value**		5.58
6	**B) K Factor (weighted average, by area, for all site soils) - Soil erodability**		
7	The soil-erodibility factor K represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff. Use Site-specific data must be submitted.		
8	http://svctenvims.dot.ca.gov/wqpt/wqpt.aspx		
9	**K Factor Value**		0.15
10	**C) LS Factor (weighted average, by area, for all slopes)**		
11	The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases. Use the LS table located in separate tab of this spreadsheet to determine LS factors. Estimate the weighted LS for the site prior to construction.		
12	LS Table		
13	**LS Factor Value**		0.08
14			
15	**Watershed Erosion Estimate (=RxKxLS) in tons/acre**		0.06696
16	**Site Sediment Risk Factor**		**Low**
17	Low Sediment Risk: < 15 tons/acre		
18	Medium Sediment Risk: >=15 and <75 tons/acre		
19	High Sediment Risk: >= 75 tons/acre		
20			

Receiving Water (RW) Risk Factor Worksheet	Entry	Score
A. Watershed Characteristics	**yes/no**	
A.1. Does the disturbed area discharge (either directly or indirectly) to a **303(d)-listed waterbody impaired by sediment** (For help with impaired waterbodies please visit the link below) or has a **USEPA approved TMDL implementation plan for sediment**?:	**yes**	**High**
http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml		
OR		
A.2. Does the disturbed area discharge to a waterbody with designated beneficial uses of SPAWN & COLD & MIGRATORY? (For help please review the appropriate Regional Board Basin Plan)		
http://www.waterboards.ca.gov/waterboards_map.shtml		

Combined Risk Level Matrix



Project Sediment Risk:	**Low**
Project RW Risk:	**High**
Project Combined Risk:	**Level 2**

APPENDIX F: CONSTRUCTION SCHEDULE

APPENDIX G: SUBMITTED CHANGES TO PRDS

Log of Updated PRDs

The General Permit allows for the reduction or increase of the total acreage covered under the General Permit when a portion of the project is complete and/or conditions for termination of coverage have been met; when ownership of a portion of the project is purchased by a different entity; or when new acreage is added to the project.

Modified PRDs shall be filed electronically within 30 days of a reduction or increase in total disturbed area if a change in permit covered acreage is to be sought. The SWPPP shall be modified appropriately, with revisions and amendments recorded in Appendix C. Updated PRDs submitted electronically via SMARTS can be found in this Appendix.

This appendix includes all of the following updated PRDs (check all that apply):

☐ Revised Notice of Intent (NOI);

☐ Revised Site Map;

☐ Revised Risk Assessment;

☐ New landowner's information (name, address, phone number, email address); and

☐ New signed certification statement.

_____

Legally Responsible Person [if organization]

_____	_____
Signature of [Authorized Representative of] Legally Responsible Person or Approved Signatory	Date
_____	_____
Name of [Authorized Representative of] Legally Responsible Person or Approved Signatory	Telephone Number

APPENDIX H: TEMPORARY BMP TECHNICAL NOTES

Best Management Practices (BMPs) Factsheets

Erosion Control

EC-1 Scheduling
EC-2 Preservation of Existing Vegetation
EC-3 Hydraulic Mulch
EC-4 Hydroseeding
EC-6 Straw Mulch
EC-8 Wood Mulching
EC-10 Velocity Dissipation Devices
EC-15 Soil Preparation / Roughening
EC-16 Non-Vegetative Stabilization

Sediment Control

SE-1 Silt Fence
SE-3 Sediment Trap
SE-5 Fiber Rolls
SE-6 Gravel Bag Berm

Wind Erosion Control

WE-1 Wind Erosion Control

Non-Stormwater Management

NS-1 Water Conservation Practices
NS-6 Illicit Connection/Discharge
NS-7 Potable Water/Irrigation
NS-8 Vehicle and Equipment Cleaning
NS-9 Vehicle and Equipment Fueling
NS-10 Vehicle and Equipment Maintenance

Waste Management & Materials Pollution Control

WM-1 Material Delivery and Storage
WM-2 Material Use
WM-3 Stockpile Management
WM-4 Spill Prevention and Control
WM-5 Solid Waste Management
WM-6 Hazardous Waste Management
WM-9 Sanitary/ Septic Waste Management

Factsheets are from CASQA 2009 Stromwater Best Mangement Practice Handbook Portal: Construction. Factsheets that are apporate for the Project have been included.

Table 1-4 Other Pollutants

Construction Activity	Pollutants						
	Sediment	Nutrients	Trace Metals	Pesticides	Oil, Grease, Fuels	Other Toxic Chemicals	Miscellaneous Waste
Construction Practices							
Dewatering Operations	X	X	X	X	X	X	
Paving Operations	X				X	X	X
Structure Construction/Painting			X		X	X	X
Material Management							
Material Delivery and Storage	X	X	X	X	X	X	
Material Use		X	X	X	X	X	
Waste Management							
Solid Waste	X	X					X
Hazardous Waste						X	
Contaminated Spills	X	X	X	X	X	X	X
Concrete Waste						X	X
Sanitary/Septic Waste							X
Vehicle/Equipment Management							
Vehicle/Equipment Fueling					X	X	X
Vehicle/Equipment Maintenance					X	X	X

APPENDIX I: VISUAL MONITORING/BMP INSPECTION FORM

SWPPP Visual Monitoring/BMP Inspection Report

Project Name	
Project Location	
WDID#	
General Contractor	
24/7 Contact Person Info	
Inspector Name	
Title/Company	
Date of Inspection	
Time of Inspection	
Type of Inspection (circle one)	Daily Weekly Storm Post-Storm
Current Weather	
Precipitation Since Last Inspection	
Cumulative Precip. (storm total)	
Inspector's Signature	

SWPPP Compliance Action Items

ID#	SWPPP Non-Compliance Item	Location and BMP Plan Sheet #	Corrective Action Required	To be Completed By: Date/Time	Completion Date/Time and Signature

NOTES (include stages of construction currently in progress)

Erosion and Sediment Control BMPs

- ☐ **Disturbed soil areas** are stabilized with wood chips, pine needles or gravel. No signs of rills, gullies.
- ☐ **Wattles** are installed, maintained and functioning per specifications (e.g. in full contact with soil surface, minimum 6" freeboard, deposited sediment removed, etc).
- ☐ **Silt fence** is installed, maintained and functioning per specifications (e.g. trenched into soil, upright, firmly attached to wire backing, staked every 6 ft, no tears in filter fabric, deposited sediment removed, etc).
- ☐ **Gravel bag check dams** are installed, maintained and functioning per specifications (e.g. oriented perpendicular to flow path and free of sediment).

Describe observations, any non-compliance issues and immediate corrective actions taken:

Site Management BMPs

- ☐ **Track-off controls** are in place and effective at preventing track-off from construction vehicles. No track-off observed anywhere onsite.
- ☐ **Concrete washouts** are less than 75% full and placed in designated locations. No concrete leaks or spills observed. Washouts are covered with plastic sheeting if chance of rain in forecast.
- ☐ **Drain inlets** are free of accumulated debris/sediment. Filter socks are cleaned out or replaced weekly.
- ☐ **Stormwater outlet protection** features (e.g. rock aprons) are free of accumulated sediment, providing soil coverage, no evidence of erosion or scouring.
- ☐ **Vegetation/tree protection** is in place and effective in all areas of active construction.
- ☐ **Spill kits** are onsite and accessible to contain and clean up any chemical and hazardous material spills (e.g. fertilizers, fuels, lubricants, paints, adhesives, etc.). *If a spill occurs, contain the spill and contact IERS (530.581.4377) immediately to report spills and clean-up/containment actions.*
- ☐ **Stockpiles** of erodible materials are located in designated areas (on BMP plans), completely contained with perimeter sediment control barriers (e.g. wattles weighted with gravel bags), and covered with plastic sheeting if chance of rain in 48 hour forecast exceeds 50%.
- ☐ **Sweeping** – all roads, parking areas and other impervious surfaces are free of accumulated sediment, sand or other debris. No track-off anywhere on project site.

Describe observations, any non-compliance issues and immediate corrective actions taken:

Housekeeping BMPs

- ☐ **Spill prevention** – all chemicals and hazardous materials (e.g. fertilizers, fuels, lubricants, paints, adhesives, etc.) are stored in spill-proof containers.
- ☐ **Temporary sanitary facilities** are located away from drainage paths, regularly emptied/replaced, and fully containing all sanitary waste.
- ☐ **Solid waste mgmt –** Construction site is free of trash and litter. Garbage dumpsters/cans are covered, located away from drainage paths, regularly emptied/replaced, and fully containing all solid waste.

Describe observations, any non-compliance issues and immediate corrective actions taken:

Attach inspection photos, a printout of the weather forecast from the NOAA website, and a copy of the BMP or DSA maps (if applicable) to this report.

APPENDIX J: RAIN EVENT ACTION PLAN (REAP) TEMPLATE

Rain Event Action Plan (REAP)

Date:		**WDID Number:**	
Date Rain Predicted to Occur:		**Predicted % chance of rain:**	

Site Information:

Site Name, City and Zip Code Project Risk Level: □ Risk Level 2 □ Risk Level 3

Site Stormwater Manager Information:

Name, Company, Emergency Phone Number (24/7)

Erosion and Sediment Control Contractor – Labor Force contracted for the site:

Name, Company, Emergency Phone Number (24/7)

Stormwater Sampling Agent:

Name, Company, Emergency Phone Number (24/7)

Current Phase of Construction

Check ALL the boxes below that apply to your site.

❑ Grading and Land Development	❑ Vertical Construction	❑ Inactive Site
❑ Streets and Utilities	❑ Final Landscaping and Site Stabilization	❑ Other:

Activities Associated with Current Phase(s)

Check ALL the boxes below that apply to your site (some apply to all Phases).

Grading and Land Development:

❑ Demolition	❑ Vegetation Removal	❑ Vegetation Salvage-Harvest
❑ Rough Grade	❑ Finish Grade	❑ Blasting
❑ Soil Amendment(s):	❑ Excavation (_____ ft)	❑ Soils Testing
❑ Rock Crushing	❑ Erosion and Sediment Control	❑ Surveying
❑ Equip. Maintenance/Fueling	❑ Material Delivery and Storage	❑ Other:

Streets and Utilities:

❑ Finish Grade	❑ Utility Install: water-sewer-gas	❑ Paving Operations
❑ Equip. Maintenance/Fueling	❑ Storm Drain Installation	❑ Material Delivery & Storage
❑ Curb and Gutter/Concrete Pour	❑ Masonry	❑ Other:

Vertical Construction:

❑ Framing	❑ Carpentry	❑ Concrete/Forms/Foundation
❑ Masonry	❑ Electrical	❑ Painting
❑ Drywall/Interior Walls	❑ Plumbing	❑ Stucco
❑ Equip. Maintenance/Fueling	❑ HVAC	❑ Tile
❑ Exterior Siding	❑ Insulation	❑ Landscaping & Irrigation
❑ Flooring	❑ Roofing	❑ Other:

Final Landscaping & Site Stabilization:

❑ Stabilization	❑ Vegetation Establishment	❑ E&S Control BMP Removal
❑ Finish Grade	❑ Storage Yard/ Material Removal	❑ Landscape Installation
❑ Painting and Touch-Up	❑ Irrigation System Testing	❑ Other:
❑ Drainage Inlet Stencils	❑ Inlet Filtration	❑ Perm. Water Quality Ponds
❑ Other:	❑ Other:	❑ Other:

Inactive Construction Site:

❑ E & S Control Device Installation	❑ Routine Site Inspection	❑ Trash Removal
❑ E & S Control Device Maintenance	❑ Street Sweeping	❑ Other:

Rain Event Action Plan (REAP)

Date:		**WDID Number:**	

Trades Active on Site during Current Phase(s)

Check ALL the boxes below that apply to your site

❑	Storm Drain Improvement	❑	Grading Contractor	❑	Surveyor- Soil Technician
❑	Street Improvements	❑	Water Pipe Installation	❑	Sanitary Station Provider
❑	Material Delivery	❑	Sewer Pipe Installation	❑	Electrical
❑	Trenching	❑	Gas Pipe Installation	❑	Carpentry
❑	Concrete Pouring	❑	Electrical Installation	❑	Plumbing
❑	Foundation	❑	Communication Installation	❑	Masonry
❑	Demolition	❑	Erosion and Sediment Control	❑	Water, Sewer, Electric Utilities
❑	Material Delivery	❑	Equipment Fueling/Maintenance	❑	Rock Products
❑	Tile Work- Flooring	❑	Utilities, e.g., Sewer, Electric	❑	Painters
❑	Drywall	❑	Roofers	❑	Carpenters
❑	HVAC installers	❑	Stucco	❑	Pest Control: e.g., termite prevention
❑	Exterior Siding	❑	Masons	❑	Water Feature Installation
❑	Insulation	❑	Landscapers	❑	Utility Line Testers
❑	Fireproofing	❑	Riggers	❑	Irrigation System Installation
❑	Steel Systems	❑	Utility Line Testers	❑	Other:

Trade Contractor Information Provided

Check ALL the boxes below that apply to your site.

❑	Educational Material Handout	❑	Tailgate Meetings	❑	Training Workshop
❑	Contractual Language	❑	Fines and Penalties	❑	Signage
❑	Other:	❑	Other:	❑	Other:

Continued on next page.

Rain Event Action Plan (REAP)

Date of REAP		**WDID Number:**	
Date Rain Predicted to Occur:		**Predicted % chance of rain:**	

Predicted Rain Event Triggered Actions

Below is a list of suggested actions and items to review for this project. Each active Trade should check all material storage areas, stockpiles, waste management areas, vehicle and equipment storage and maintenance, areas of active soil disturbance, and areas of active work to ensure the proper implementation of BMPs. Project-wide BMPs should be checked and cross-referenced to the BMP progress map.

Trade or Activity	Suggested action(s) to perform / item(s) to review prior to rain event
❑ Information & Scheduling	❑ Inform trade supervisors of predicted rain ❑ Check scheduled activities and reschedule as needed ❑ Alert erosion/sediment control provider ❑ Alert sample collection contractor (if applicable) ❑ Schedule staff for extended rain inspections ❑ Check Erosion and Sediment Control (ESC) material stock ❑ Review BMP progress map ❑ Other:_____ ❑ _____ ❑ _____
❑ Material storage areas	❑ Material under cover or in sheds (ex: treated woods and metals) ❑ Perimeter control around stockpiles ❑ Other:_____ ❑ _____ ❑ _____
❑ Waste management areas	❑ Dumpsters closed ❑ Drain holes plugged ❑ Recycling bins covered ❑ Sanitary stations bermed and protected from tipping ❑ Other:_____ ❑ _____ ❑ _____
❑ Trade operations	❑ Exterior operations shut down for event (e.g., no concrete pours or paving) ❑ Soil treatments (e.g.,: fertilizer) ceased within 24 hours of event ❑ Materials and equipment (ex: tools) properly stored and covered ❑ Waste and debris disposed in covered dumpsters or removed from site ❑ Trenches and excavations protected ❑ Perimeter controls around disturbed areas ❑ Fueling and repair areas covered and bermed ❑ Other:_____ ❑ _____ ❑ _____
❑ Site ESC BMPs	❑ Adequate capacity in sediment basins and traps ❑ Site perimeter controls in place ❑ Catch basin and drop inlet protection in place and cleaned ❑ Temporary erosion controls deployed ❑ Temporary perimeter controls deployed around disturbed areas and stockpiles ❑ Roads swept; site ingress and egress points stabilized ❑ Other:_____ ❑ _____ ❑ _____
❑ Concrete rinse out area	❑ Adequate capacity for rain ❑ Wash-out bins covered ❑ Other:_____ ❑ _____ ❑ _____
❑ Spill and drips	❑ All incident spills and drips, including paint, stucco, fuel, and oil cleaned ❑ Drip pans emptied ❑ Other:_____ ❑ _____ ❑ _____

Continued on next page.

❑ Other / Discussion / Diagrams	❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____ ❑ _____

Attach a printout of the weather forecast from the NOAA website to the REAP.

I certify under penalty of law that this Rain Event Action Plan (REAP) will be performed in accordance with the General Permit by me or under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the 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.

_____Date: _____

Qualified SWPPP Practitioner (Use ink please)

APPENDIX K: SWPPP TRAINING OUTLINE AND TRAINING REPORTING FORM

Trained Contractor Personnel Log

Stormwater Management Training Log and Documentation

Project Name: _____

WDID #: _____

Stormwater Management Topic: (check as appropriate)

☐ Erosion Control ☐ Sediment Control

☐ Wind Erosion Control ☐ Tracking Control

☐ Non-Stormwater Management Control ☐ Waste Management and Materials Pollution Control

☐ Stormwater Sampling

Specific Training Objective: _____

Location: _____ Date: _____

Instructor: _____ Telephone: _____

Course Length (hours): _____

APPENDIX L: RESPONSIBLE PARTIES

Authorization of Approved Signatories

Project Name: _____

WDID #: _____

Name of Personnel	Project Role	Company	Signature	Date

_____ _____

LRP's Signature Date

_____ _____

LRP Name and Title Telephone Number

Identification of QSP

Project Name: _____

WDID #: _____

The following are QSPs associated with this project

Name of Personnel[1]	Company	Date

(1) If additional QSPs are required on the job site add additional lines and include information here

Authorization of Data Submitters

Project Name: _____

WDID #: _____

Name of Personnel	Project Role	Company	Signature	Date

_____ _____

Approved Signatory's Signature Date

_____ _____

Approved Signatory Telephone Number

Name and Title

APPENDIX M: CONTRACTORS AND SUBCONTRACTORS

APPENDIX N: EFFLUENT SAMPLING AND MEASUREMENT FIELD LOG TEMPLATE

Effluent Sampling and Measurement Field Log

Project Name	
Project Location	
WDID#	
Sampler Name	
Title/Company	
Sampling Date	
Sampling Start Time/Stop Time	
Sampling Event Type (circle one)	**Stormwater Non-stormwater** **Non-visible pollutant Post-NEL exceedance**
Current Weather	
Sampler's Signature	

Field Meter Calibration

pH Meter #	Date of Last Calibration	Turbidity Meter #	Date of Last Calibration	Turbidity Meter Field Calibration Check
				.01 __ 20 ___ 100___ 800___

Field pH and Turbidity Measurements

Sample Location ID	pH	Turbidity	Time

Grab Sampling

Sample Location ID	O&G	Other (specify)	Time

Sampling Notes

APPENDIX O: CHAIN OF COSTODY (COC) TEMPLATE

Chain of Custody

P.O. #

Lab Federal Tax ID:

Lab Use Only

Laboratory Contact Address		phone: fax: E-Mail web:									Cold Room Shelf # Group # Account # Client # Sample Condition
CLIENT: Chelsea Neill			Copy of report sent to:								
Company	Balance Hydrologics		Company								
Contact	Chelsea Neill		Contact								
Address 1	800 Bancroft Way		Address 1								
Address 2	Suite 101		Address 2								
City, St, Zip	Berkeley,CA 94710		City, St, Zip								
Tel. (510) 704-1000	x 244		E-Mail: cneill@balancehydro.com								
fax (510) 704-1001			www.								
SAMPLE Identification	Date Sampled	Compost CODE	Water CODE	Soil CODE	Plant CODE	Remed. CODE	Fuel CODE	Turbidity and SSC CODE	TSS CODE	CODE	
1 2											
3 4											
5 6											
7 8											
9 10											
11 12											
13 14											

Special Instructions:

RELEASING	RECEIVING	Date	Time		
Releasing Signature 1 **X**	Receiving Signature 1				
Releasing Signature 2	Receiving Signature 2				
Releasing Signature 3	Receiving Signature 3				