

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE  
OFFICE OF SPILL PREVENTION AND RESPONSE

SETTLEMENT AGREEMENT AND STIPULATION FOR ENTRY OF  
CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD  
ADMINISTRATIVE CIVIL LIABILITY ORDER R5-2013-0545

IN THE MATTER OF  
SAN FRANCISCO PUBLIC UTILITIES COMMISSION  
DECEMBER 2011 PRIEST RESERVOIR DISCHARGE  
TUOLUMNE COUNTY

This Settlement Agreement and Stipulation for Entry of Administrative Civil Liability Order (Stipulated Order or Order) is entered into by and between the Executive Officer of the Regional Water Quality Control Board, Central Valley Region (Central Valley Water Board), on behalf of the Central Valley Water Board Prosecution Team (Prosecution Team), the California Department of Fish and Wildlife (DFW) Office of Spill Prevention and Response (OSPR), and the San Francisco Public Utilities Commission (Discharger) (collectively known as the Parties) and is presented by the Prosecution Team and the Discharger to the Central Valley Water Board, or its delegee, for adoption as an order by settlement, pursuant to Government Code section 11415.60.

**SECTION I: RECITALS**

**Background**

1. The Discharger owns and operates the Hetch Hetchy Project (Project), which features a series of reservoirs, tunnels, pipelines, hydroelectric facilities and treatment plants delivering drinking water from Hetch Hetchy Reservoir in Yosemite National Park to San Francisco. Priest Dam and Reservoir are part of the Project and are located in Tuolumne County near the town of Moccasin.
2. Priest Dam was completed in approximately 1923. Priest Reservoir has a capacity of about 1,950 acre-feet and functions primarily as a forebay for the Project's Moccasin Powerhouse, but also provides emergency water supply capacity and serves other Project functions.
3. Priest Reservoir receives Project water from Hetch Hetchy Reservoir via the Mountain Tunnel. Project water normally exits the reservoir through the Priest Outlet Gate Tower into the Moccasin Power Tunnel, continuing through the Moccasin Powerhouse and into the Discharger's transmission pipelines. The Priest Reservoir Bypass Pipeline connects the Mountain Tunnel to the Moccasin Power Tunnel along the bottom of the reservoir. The Bypass Pipeline allows

Project water to bypass the reservoir when necessary, for example, during periods of excess turbidity and sediment within the reservoir.

4. Priest Dam is located on Rattlesnake Creek, but to maintain Project water quality Priest Reservoir is isolated from the creek and from most other local runoff through diversion structures and bypass channels. Project water entering Priest Reservoir generally contains little turbidity or sediment, but wave action along the shore and other processes within the reservoir can add turbidity and sediment to the water, which ultimately settles and accumulates at the bottom.
5. Priest Dam has an outlet which allows for discharges into Rattlesnake Creek. The Discharger infrequently discharges water through Priest Dam, generally only when necessary to drain the reservoir in order to access and maintain the Mountain Tunnel, Outlet Gate Tower or Bypass Pipeline, or to exercise equipment such as outlet valves. The Discharger does not keep a record of past discharges or a definite schedule of future discharges.
6. Water discharged through Priest Dam flows from Rattlesnake Creek to Big Jackass Creek, then to Moccasin Creek, then to Don Pedro Reservoir on the Tuolumne River. The flow of Moccasin Creek is bypassed under the Project's Moccasin Reregulating Reservoir. Moccasin Creek enters Don Pedro near the DFW Moccasin Fish Hatchery, about 5.30 stream miles from Priest Dam. Rattlesnake Creek and the downstream waters are waters of the state and waters of the United States.
7. The Discharger opened the Priest Dam outlet on the morning of 5 December 2011 in order to drain the reservoir to access, inspect and repair valves at the base of the Outlet Gate Tower. The discharge continued until the reservoir was empty, around the early afternoon of 9 December 2011. Weather conditions before, during and for some time after the discharge were dry, with minimal or no storm flows in Rattlesnake Creek or downstream.
8. The 5-9 December 2011 discharge released approximately 167.5 acre-feet (approximately 54,580,000 gallons) of water into Rattlesnake Creek. The flow rate is estimated to have been about 60 cubic feet per second (cfs) for the first two hours of the discharge, and an average of about 20 cfs for entire discharge period. The Parties estimate that the last 6,700,000 gallons of the discharge flushed accumulated bottom sediment from Priest Reservoir into Rattlesnake Creek and downstream during the last two days of the operation.
9. The 5-9 December 2011 discharge caused high flows, sediment and turbidity to reach at least as far as the Moccasin Fish Hatchery. Inspections by Central Valley Water Board and DFW immediately thereafter revealed that the discharge flushed

and deposited up to 9 inches of distinctive orange-yellow silt-clay sediment from the bottom of Priest Reservoir onto the bed and banks of Rattlesnake Creek, Big Jackass Creek and Moccasin Creek, harming freshwater benthic organisms and wildlife habitat along at least 5.30 miles of stream channel. The discharge also likely caused or contributed to a fish kill in the area below the dam.

10. Follow-up inspections by Central Valley Water Board and DFW approximately ten weeks after the discharge revealed that the majority of the sediment had moved through the impacted stream channels with winter flows. Some sediment remained on high stream banks, although clean-up was deemed impractical due to thick vegetation. Benthic organisms and habitat were recovering, but DFW and Central Valley Water Board staff estimate that full recovery will take at least two years. DFW calculates that the discharge caused \$131,366 in natural resources damages, based on the amount necessary to compensate the public for the lost natural resources between the time of the discharge and full recovery. The Discharger conducted separate surveys in July, 2012, and estimates that full recovery will occur much sooner.

#### Legal Authority

11. Section 301 of the Federal Water Pollution Control Act (Clean Water Act) (33 U.S.C. § 1311) prohibits the discharge of pollutants, including dredged spoil, rock and sand, to waters of the United States except in compliance with Section 404, among others, of the Clean Water Act (33 U.S.C. § 1344). Section 404 requires any person proposing to discharge dredged or fill material into navigable waters to obtain a permit from the Army Corps of Engineers. The discharge of accumulated sediment from or through a dam into waters of the United States constitutes a discharge of dredged material and/or fill material that requires a Section 404 permit, unless exempted under Section 404(f). (*Greenfield Mills, Inc. v. Macklin* (2004) 361 F.3d 934, 949; U.S. Army Corps of Engineers, Regulatory Guidance Letter No. 05-04, dated August 19, 2005.)
12. California Water Code section 13376 requires that a person who proposes to discharge dredged or fill material to navigable waters of the United States shall file a report of waste discharge with the Regional Water Board at least 180 days prior to discharging said dredge or fill materials.
13. The Central Valley Water Board adopted the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan) pursuant to Water Code Section 13243. The Basin Plan designates beneficial uses, establishes water quality objectives, sets forth prohibitions, contains implementation plans and policies for protecting waters of the basin, and

incorporates by reference plans and policies adopted by the State Water Resources Control Board.

14. The Basin Plan designates the beneficial uses of the Tuolumne River from the source to Don Pedro Reservoir as municipal and domestic supply; agricultural supply; hydropower power generation; water contact recreation; non-contact water recreation; warm freshwater habitat; cold freshwater habitat; and wildlife habitat. (Basin Plan, at p. II-8.00.) The Basin Plan applies these beneficial uses to all tributaries of the Tuolumne River, including Moccasin Creek, Big Jackass Creek and Rattlesnake Creek. (Basin Plan, at p. II-2.00.)
15. The Basin Plan prohibits the discharge of sediment and settleable material into surface waters in a manner that causes nuisance or adversely affects beneficial uses. (Basin Plan, p. III-7.00.) The Basin Plan prohibits the discharge of materials resulting in changes in turbidity that cause nuisance or adversely affect beneficial uses. (*Id.* at p. III-9.00.)
16. Water Code section 13050, subdivision (d), provides in relevant part that “‘waste’ includes sewage and any and all other waste substances, liquid, solid, gaseous or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation of whatever nature....” Concentrated silt or sediment flushed from a dam can be considered “waste” within this definition. (*Lake Madrone Water District v. State Water Resources Control Board* (1989) 209 Cal.App.3d 163, 168-171.)
17. Water Code section 13050, subdivision (m), defines nuisance as anything that meets all of the following requirements: (a) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; (b) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; (c) occurs during, or as a result of, the treatment or disposal of wastes.
18. California Fish and Game Code section 5650 makes it unlawful to discharge materials that are deleterious to fish, plant life, mammals, or bird life into state waters.
19. Fish and Game Code section 12016 provides that any person who discharges or deposits any substance or material deleterious to fish, plant, bird, or animal life or their habitat into, or which threatens to enter, the waters of this state is liable civilly to the department for all actual damages to fish, plant, bird, or animal life or their habitat.

20. Fish and Game Code section 13013(c) authorizes the Department of Fish and Wildlife to seek costs incurred in the administration and enforcement of applicable pollution laws.

### **Alleged Violations**

21. The Prosecution Team alleges that the Discharger violated Water Code section 13376 and Section 301 of the Clean Water Act by discharging accumulated sediment from Priest Reservoir into waters of the United States without first filing a report of waste discharge or obtaining a Section 404 permit. Pursuant to Water Code section 13385, subdivision (a), any person who violates Water Code section 13376 or Section 301 of the Clean Water Act is subject to administrative civil liability pursuant to Water Code section 13385, subdivision (c), in an amount not to exceed the sum of both of the following: (1) ten thousand dollars (\$10,000) for each day in which the violation occurs and (2) where there is a discharge, any portion of which is not susceptible to cleanup or is not cleaned up, and the volume discharged but not cleaned up exceeds 1,000 gallons, an additional liability not to exceed ten dollars (\$10) multiplied by the number of gallons by which the volume discharged but not cleaned up exceeds 1,000 gallons.
22. The Prosecution Team also alleges that the Discharger violated prohibitions issued by the Regional Board in the Basin Plan by discharging accumulated sediment from Priest Reservoir into waters of the state in a manner that adversely affected beneficial uses and caused nuisance conditions. Pursuant to Water Code section 13350, subdivision (a), any person who violates a waste discharge requirement, waiver condition, certification, or other order or prohibition issued, reissued, or amended by a regional board or the state board, discharges waste, or causes or permits waste to be deposited where it is discharged into the waters of the state is subject to administrative civil liability pursuant to Water Code section 13350, subdivision (e), either in an amount not to exceed five thousand dollars (\$5,000) for each day of violation, or in an amount not to exceed ten dollars (\$10) for each gallon of waste discharged.
23. The Department of Fish and Wildlife alleges that the Discharger violated California Fish and Game Code section 5650 by discharging significant amounts of sediment to Rattlesnake, Big Jackass, and Moccasin Creeks, which are state waters. This sediment discharged, as a result of the Discharger's actions, was deleterious to fish, plant life, mammals or bird life. The civil penalty for violating Fish and Game Code section 5650 is \$25,000 pursuant to Fish and Game Code section 5650.1.
24. The Discharger does not concede the applicability of any of the statutory violations alleged in paragraphs 21 through 23 above to the operation of Priest Reservoir from 5 – 9 December 2011.

### Settlement

25. The Parties have engaged in settlement negotiations and agree to settle the matter without administrative or civil litigation and, for the Prosecution Team and the Discharger, by presenting this Stipulated Order to the Central Valley Water Board, or its delegee, for adoption as an order by settlement pursuant to Government Code section 11415.60.
26. The liability imposed by this Order is consistent with a reasonable liability determination using the penalty methodology in the State Water Resources Control Board's (State Water Board's) Water Quality Enforcement Policy (see Attachment A for the specific penalty calculation). The Prosecution Team believes that the resolution of the alleged violations set forth herein is fair and reasonable and fulfills all of its enforcement objectives, that no further action is warranted concerning those violations, except as provided in this Stipulated Order, and that this Stipulated Order is in the best interest of the public. The Discharger agrees to the settlement of this matter without conceding liability in accordance with section II.15 of this Stipulated Order.

### SECTION II: STIPULATIONS

The Parties stipulate to the following:

1. **Administrative Civil Liability:** The Discharger hereby agrees to pay **one hundred ninety nine thousand nine hundred thirty nine dollars (\$199,939)** to DFW to resolve the alleged Fish and Game Code violations and **eight hundred thousand sixty-one dollars (\$800,061)** to the Central Valley Water Board to resolve the alleged Water Code violations, for a total of **one million dollars (\$1,000,000)** in stipulated administrative civil liability, specifically:
  - a. **For the Department of Fish and Wildlife:** A total of **one hundred ninety nine thousand nine hundred thirty nine dollars (\$199,939)**, shall be paid as follows:
    - i. **Sixty eight thousand five hundred seventy three dollars (\$68,573)** shall be paid to the California Department of Fish and Wildlife Fish and Wildlife Pollution Account to cover DFW's staff costs (\$18,573) and statutory penalties of \$50,000. Payment shall be made no later than thirty (30) days following execution of this Order by the Central Valley Water Board or its delegee, by check or money order payable to the *Department of Fish and Wildlife Fish and Wildlife Pollution Account* and sent by certified mail to: Wendy Johnson, Staff Counsel III, Department of Fish and Wildlife, Office

of Spill Prevention and Response/Legal Unit, P.O. Box 160362,  
Sacramento, CA 95816-0362.

- ii. **One hundred thirty one thousand three hundred sixty six dollars (\$131,366)** shall be paid to the National Fish and Wildlife Foundation (NFWF) for placement in the California Environmental Management Fund (Environmental Fund for Habitat and Incident Specific Restoration Projects) to be expended by NFWF to fund aquatic restoration projects benefitting Tuolumne County watersheds. This amount shall address the interim loss to natural resources damages caused by the discharge. Payment shall be made no later than thirty (30) days following execution of this Order by the Central Valley Water Board or its delegee, by check or money order payable to the *National Fish and Wildlife Foundation* and sent by certified mail to: Wendy Johnson, Staff Counsel III, Department of Fish and Wildlife, Office of Spill Prevention and Response/Legal Unit, P.O. Box 160362, Sacramento, CA 95816-0362.
- b. **For the Central Valley Water Board:** A total of **eight hundred thousand sixty one dollars (\$800,061)**, shall be paid as follows:
- i. **Four hundred thousand thirty one dollars (\$400,031)** shall be paid to the State Water Resources Control Board Cleanup and Abatement Account for Water Board staff costs and penalties. Payment shall be made no later than thirty (30) days following execution of this Order by the Central Valley Water Board or its delegee, by check payable to the *State Water Pollution Cleanup and Abatement Account*, and referencing the number of this Order. The Discharger shall send the original signed check to Wendy Wyels, Regional Water Quality Control Board, Central Valley Region, 11020 Sun Center Drive Suite 200, Rancho Cordova, CA 95670. A copy of the check shall be sent to Andrew Tauriainen, State Water Resources Control Board, Office of Enforcement, P.O. Box 100, Sacramento, CA 95812.
  - ii. **Four hundred thousand thirty dollars (\$400,030)** shall be paid to the Department of Fish and Wildlife Fish and Wildlife Pollution Account for the purposes specified in Fish and Game Code section 12017. Payment shall be made no later than thirty (30) days following execution of this Order by the Central Valley Water Board or its delegee, by check or money order payable to the *Department of Fish and Wildlife, Fish and Wildlife Pollution Account* and sent by certified mail to: Wendy Johnson, Staff Counsel III, Department of

Fish and Wildlife, Office of Spill Prevention and Response/Legal Unit, P.O. Box 160362, Sacramento, CA 95816-0362, with copies to Wendy Wyels, Regional Water Quality Control Board, Central Valley Region, 11020 Sun Center Drive Suite 200, Rancho Cordova, CA 95670 and Andrew Tauriainen, State Water Resources Control Board, Office of Enforcement, P.O. Box 100, Sacramento, CA 95812.

2. **Supplemental Environmental Project:** The Discharger and the Central Valley Water Board agree that the payment specified in Section II.1.b.ii is a Supplemental Environmental Project (SEP), and that the amount specified (hereafter SEP Amount) will be treated as a Suspended Administrative Civil Liability for purposes of this Stipulated Order.
  - a. **Description:** The goal of this SEP is to provide funding for specific projects implemented by the DFW Water Pollution Response and Resource Protection Program, which responds to pollution incidents in state waters. The SEP Amount will fund the following projects: 1) Merced and Stanislaus Counties Watershed Project; 2) NRDA Training; 3) Spill Response Training; 4) Pollution Action Kits and training modules for DFW personnel and other agencies engaged in pollution response; and 5) Water Quality Monitoring of Marijuana Cultivation Sites. The SEP Amount will also fund oversight, monitoring, and necessary costs associated with the SEP reporting requirements. Detailed project descriptions, including milestones, budget and performance measures are provided in Attachment B. The SEP is to be implemented by DFW's Office of Spill Prevention and Response, with the Central Valley Water Board providing oversight. As provided in Attachment B, DFW shall provide a final report of SEP expenditures annually by January 31 until SEP funds have been expended pursuant to Fish and Game Code section 12017 to accomplish the project goals.
  - b. **Publicity:** Should Discharger or its agents or subcontractors publicize one or more elements of the SEP, they shall state in a **prominent manner** that the project is being partially funded as part of the settlement of an enforcement action by the Central Valley Water Board against the Discharger.
3. **Monitoring and Reporting:** The Discharger shall manage and monitor discharges from Priest Reservoir into Rattlesnake Creek, employ best management practices when making such discharges, and submit reports through the fiscal year ending June 30, 2017, as described in Attachment C. If necessary, Attachment C may be amended in writing upon agreement of all the Parties. The Parties acknowledge that the requirements described in Attachment C are solely

for the purpose of assessing the effectiveness of this Stipulated Order, and that this Stipulated Order shall not satisfy or excuse the Discharger from any necessary future permitting, regulatory or statutory requirements associated with the implementation of activities described in Attachment C.

4. **Compliance with Applicable Laws:** The Discharger understands that payment of administrative civil liability in accordance with the terms of this Stipulated Order and or compliance with the terms of this Stipulated Order is not a substitute for compliance with applicable laws, and that future and/or continuing violations of the type alleged in the Complaint may subject it to further enforcement, including additional administrative civil liability.

5. **Party Contacts for Communications related to Stipulated Order:**

For the Regional Water Board:

Wendy Wyels  
Regional Water Quality Control Board  
Central Valley Region  
11010 Sun Center Drive, Suite 200  
Rancho Cordova, CA 95670

For DFW:

Wendy Johnson  
Staff Counsel III, Specialist  
Department of Fish and Wildlife  
Office of Spill Prevention and Response  
1700 K Street, Suite 250  
Sacramento, CA 95811

For the Discharger:

Steven R. Ritchie  
Assistant General Manager  
San Francisco Public Utilities Commission  
525 Golden Gate Avenue, 13<sup>th</sup> Floor  
San Francisco, CA 94102

6. **Attorney's Fees and Costs:** Each Party shall bear all attorneys' fees and costs arising from the Party's own counsel in connection with the matters set forth herein.
7. **Matters Addressed by Stipulation:** Upon the Central Valley Water Board's adoption of this Stipulated Order, this Order represents a final and binding resolution and settlement of all claims, violations or causes of action that could have been asserted against the Discharger by the Prosecution Team or DFW as

of the effective date of this Stipulated Order based on the specific facts alleged in this Order (“Covered Matters”). The provisions of this Paragraph are expressly conditioned on the full payment of the stipulated administrative civil liability, in accordance with Stipulation Paragraph 1 herein.

8. **Public Notice:** The Parties understand that this Stipulated Order must be noticed for a 30-day public review and comment period prior to consideration by the Central Valley Water Board or its delegee. In the event objections are raised during the public review and comment period, the Central Valley Water Board or its delegee may require a public hearing regarding this Stipulated Order. In that event, the Parties agree to meet and confer concerning any such objections, and may agree to revise or adjust the proposed Order as necessary or advisable under the circumstances. If significant new information is received that reasonably affects the propriety of presenting this Stipulated Order to the Central Valley Water Board, or its delegee, for adoption, the Executive Officer may unilaterally declare this Stipulated Order void and decide not to present it to the Central Valley Water Board or its delegee. The Discharger agrees that it may not rescind or otherwise withdraw the approval of this proposed Stipulated Order by its governing bodies.
9. **Addressing Objections Raised During Public Comment Period:** The Parties agree that the procedure contemplated for the Central Valley Water Board’s adoption of the settlement by the Parties and review by the public, as reflected in this Stipulated Order, is lawful and adequate. In the event procedural objections are raised prior to the Stipulated Order becoming effective, the Parties agree to meet and confer concerning any such objections, and may agree to revise or adjust the procedure as necessary or advisable under the circumstances.
10. **No Waiver of Right to Enforce:** The failure of the Prosecution Team, the Central Valley Water Board or DFW to enforce any provision of this Stipulated Order shall in no way be deemed a waiver of such provision, or in any way affect the validity of the Order. The failure of the Prosecution Team, the Central Valley Water Board or DFW to enforce any such provision shall not preclude any of them from later enforcing the same or any other provision of this Stipulated Order.
11. **Central Valley Water Board and DFW Shall Not Enforce on Each Other’s Behalf:** The Central Valley Water Board and DFW are each responsible for enforcing this Order with respect to the matters falling under their respective jurisdictions. The Central Valley Water Board shall not enforce provisions of this Order for which DFW has jurisdiction under the Fish and Game Code, and DFW shall not enforce provisions of this Order for which the Central Valley Water Board has jurisdiction under the Water Code and/or the Clean Water Act.

12. **Interpretation:** This Stipulated Order shall be construed as if the Parties prepared it jointly. Any uncertainty or ambiguity shall not be interpreted against any one Party. The Parties are represented by counsel in this matter.
13. **Modification:** This Stipulated Order shall not be modified by any of the Parties by oral representation made before or after its execution. All modifications must be in writing, signed by all Parties, and approved by the Central Valley Water Board or its delegee, the San Francisco Public Utilities Commission, and the San Francisco Board of Supervisors.
14. **If Order Does Not Take Effect:** In the event that this Stipulated Order does not take effect because it is not approved by the Central Valley Water Board, or its delegee, or is vacated in whole or in part by the State Water Board or a court, the Parties acknowledge that the Discharger and the Prosecution Team expect to proceed to a contested evidentiary hearing before the Central Valley Water Board to determine whether to assess administrative civil liabilities for the underlying alleged Water Code violations, unless the Parties agree otherwise. The Parties agree that all oral and written statements and agreements made during the course of settlement discussions, including but not limited to this Stipulated Order, will not be admissible as evidence in the hearing. The Parties agree to waive any and all objections based on settlement communications in this matter, including, but not limited to:
  - a. Objections related to prejudice or bias of any of the Central Valley Water Board members or their advisors and any other objections that are premised in whole or in part on the fact that the Central Valley Water Board members or their advisors were exposed to some of the material facts and the Parties' settlement positions as a consequence of reviewing the Stipulation and/or the Order, and therefore may have formed impressions or conclusions prior to any contested evidentiary hearing on the Complaint in this matter; or
  - b. Laches or delay or other equitable defenses based on the time period for administrative or judicial review to the extent this period has been extended by these settlement proceedings.
15. **No Admission of Liability:** In settling this matter, the Discharger does not admit to any of the findings in this Stipulated Order, or that it has been or is in violation of the Water Code, or any other federal, state, or local law or ordinance; however, the Discharger recognizes that this Stipulated Order may be used as evidence of a prior enforcement action consistent with Water Code section 13327 or section 13385, subdivision (e).

16. **Waiver of Hearing:** The Discharger has been informed of the rights provided by Water Code section 13323, subdivision (b), and hereby waives its right to a hearing before the Central Valley Water Board prior to the adoption of the Stipulated Order.
17. **Waiver of Right to Petition:** The Discharger hereby waives its right to petition the Central Valley Water Board's adoption of the Stipulated Order, as written, for review by the State Water Board, and further waives its rights, if any, to appeal the same to a California Superior Court and/or any California appellate level court.
18. **Covenant Not to Sue:** The Discharger covenants not to sue or pursue any administrative or civil claim(s) against any State Agency or the State of California, its officers, Board Members, employees, representatives, agents, or attorneys arising out of or relating to any matter expressly addressed by the Stipulated Order.
19. **Central Valley Water Board and DFW Are Not Liable:** DFW, the Central Valley Water Board members, the Central Valley Water Board staff, attorneys, or representatives shall not be liable for any injury or damage to persons or property resulting from acts or omissions by the Discharger, its directors, officers, employees, agents, representatives or contractors in carrying out activities pursuant to this Stipulated Order.
20. **Authority to Bind:** Each person executing this Stipulated Order in a representative capacity represents and warrants that he or she is authorized to execute this Stipulated Order on behalf of and to bind the entity on whose behalf he or she executes the Order.
21. **No Third Party Beneficiaries:** This Stipulated Order is not intended to confer any rights or obligations on any third party or parties, and no third party or parties shall have any right of action under this Stipulated Order for any cause whatsoever.
22. **Severability:** The terms of this Stipulated Order are severable; should any provision be found invalid, the remainder shall be in full force and effect.
23. **Effective Date:** This Stipulated Order shall be effective and binding on the Parties upon the date the Central Valley Water Board, or its delegee, enters the Order.
24. **Counterpart Signatures; Facsimile and Electronic Signature:** This Stipulated Order may be executed and delivered in any number of counterparts, each of which when executed and delivered shall be deemed to be an original, but such counterparts shall together constitute one document. Further, this Stipulated Order may be executed by facsimile or electronic signature, and any such facsimile or electronic signature by any Party hereto shall be deemed to be an original

signature and shall be binding on such Party to the same extent as if such  
facsimile or electronic signature were an original signature.

**IT IS SO STIPULATED.**

**California Regional Water Quality Control Board Prosecution Team  
Central Valley Region**

By: Original signed by Andrew Altevogt for  
Pamela C. Creedon  
Executive Officer

Date: 9 December 2013

**California Department of Fish and Wildlife,  
Office of Spill Prevention and Response**

By: Original signed by  
Thomas Cullen  
Administrator

Date: 3 December 2013

**FOR THE DISCHARGER:  
San Francisco Public Utilities Commission**

By: Original signed by

Harlan L. Kelly, Jr. General Manager

Date: 4 December 2013

APPROVED AS TO FORM:

DENNIS J. HERRERA, City Attorney

By: Original signed by  
JOSHUA D. MILSTEIN  
Deputy City Attorney

**SECTION III: ORDER OF THE CENTRAL VALLEY WATER BOARD**

1. The terms of the foregoing Stipulated Order are fully incorporated herein and made part of this Order of the Central Valley Water Board.
2. In adopting this Stipulated Order, the Central Valley Water Board or its delegee has considered, where applicable, each of the factors prescribed in CWC sections 13327 and 13385(e), and has applied the Penalty Calculation Methodology set forth in the State Water Board's Enforcement Policy as shown in Exhibit A, which is incorporated herein by this reference. The consideration of these factors is based upon information and comments obtained by the Central Valley Water Board's staff in investigating the allegations set forth in the Stipulated Order, or otherwise provided to the Central Valley Water Board or its delegee by the Parties and members of the public. In addition to these factors, this settlement recovers the costs incurred by the staff of the Central Valley Water Board for this matter.
3. This is an action to enforce the laws and regulations administered by the Central Valley Water Board. The Central Valley Water Board finds that issuance of this Order is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, sections 21000 et seq.), in accordance with section 15321, subdivision (a)(2), Title 14, of the California Code of Regulations.
4. The Executive Officer of the Central Valley Water Board is authorized to refer this matter directly to the Attorney General for enforcement if the Discharger fails to perform any of its obligations under this Order.

Pursuant to Water Code section 13323 and Government Code section 11415.60, **IT IS HEREBY ORDERED** by the California Regional Water Quality Control Board, Central Valley Region.

By: Original signed by  
Kenneth D. Landau  
Assistant Executive Officer

Date: 11 December 2013

Attachment A: Penalty Calculation Methodology  
Attachment B: Supplemental Environmental Project Description  
Attachment C: Proposed Best Management Practices for Priest Reservoir Drawdown

**Attachment A – ACL Order R5-2013-0545**  
**Specific Factors Considered for Administrative Civil Liability**  
**San Francisco Public Utilities Commission (SFPUC) Priest Reservoir Discharge**

The State Water Board's *Water Quality Enforcement Policy* (Enforcement Policy) establishes a methodology for determining administrative civil liability by addressing the factors that are required to be considered under California Water Code section 13385(e). Each factor of the nine-step approach is discussed below, as is the basis for assessing the corresponding score. The Enforcement Policy can be found at:  
[http://www.waterboards.ca.gov/water\\_issues/programs/enforcement/docs/enf\\_policy\\_final111709.pdf](http://www.waterboards.ca.gov/water_issues/programs/enforcement/docs/enf_policy_final111709.pdf).

**Step 1 – Potential for Harm for Discharge Violations**

The “potential harm to beneficial uses” factor considers the harm that may result from exposure to the pollutants in the illegal discharge, while evaluating the nature, circumstances, extent, and gravity of the violation(s). A three-factor scoring system is used for each violation or group of violations: (1) the potential for harm to beneficial uses; (2) the degree of toxicity of the discharge; and (3) whether the discharge is susceptible to cleanup or abatement.

**Factor 1: Harm or Potential Harm to Beneficial Uses.**

This factor evaluates direct or indirect harm or potential for harm from the violation. A score between 0 and 5 is assigned based on a determination of whether the harm or potential for harm to beneficial uses ranges from negligible (0) to major (5).

The designated beneficial uses of Rattlesnake Creek, Big Jackass Creek and Moccasin Creek that could be impacted by the unauthorized discharge include municipal and domestic supply; agricultural supply; power generation; water contact recreation; noncontact water recreation; warm freshwater habitat; cold freshwater habitat; and wildlife habitat. Warm and cold freshwater habitats were the beneficial uses most obviously affected by the discharge from Priest Reservoir. DGF staff reported muddy deposits in the impacted reaches of the creeks extending 5.3 miles from Priest Reservoir. In general, the number of benthic individuals and taxonomic diversity was significantly less in areas of the creeks affected by the discharge than observed in areas of the reference reaches not affected by the discharge. Dead and stranded fish were also observed below Priest Dam. The discharge occurred for five days during a period of low natural flow in the creeks, so dilution was not available to moderate the impact of the discharge. According to the Discharger, sediment-laden water was only discharged the last two days of the event. Preliminary results of the site inspection conducted in February 2012 indicate the impacts of the release were still apparent in the benthic community two months after the discharge. The observed harm to beneficial uses was determined to be “Above Moderate” and a score of 4 is assigned for this factor.

**Factor 2: The Physical, Chemical, Biological or Thermal Characteristics of the Discharge.**

A score between 0 and 4 is assigned based on a determination of the risk or threat of the discharged material. “Potential receptors” are those identified considering human, environmental, and ecosystem exposure pathways.

Streams immediately downstream of the discharge point (i.e., Priest Reservoir Dam) were significantly affected by increased siltation and turbidity. The discharge from the Reservoir was acutely deleterious to aquatic life and may cause a chronic impact due to habitat degradation. The DFW report stated that the continual erosion of deposited clays, sediments, and other

deleterious materials discharging into Rattlesnake Creek, Big Jackass Creek and Moccasin Creek represent a direct threat to aquatic wildlife.

The discharged material posed a significant risk or threat to potential receptors (i.e., the chemical and/or physical characteristics of the discharged material far exceed risk factors or receptor harm in considered imminent). A score of 4 was assigned for this factor.

Factor 3: Susceptibility to Cleanup or Abatement.

A score of 0 is assigned for this factor if 50% or more of the discharge is susceptible to cleanup or abatement. A score of 1 is assigned if less than 50% of the discharge is susceptible to cleanup or abatement. This factor is evaluated regardless of whether the discharge was actually cleaned up or abated by the discharger.

Less than 50% of the discharge from Priest Reservoir was susceptible to cleanup or abatement, as the discharge entered Rattlesnake Creek, Big Jackass Creek, Moccasin Creek and finally New Don Pedro Reservoir. Therefore, a factor of 1 is assigned.

Final Score – “Potential for Harm”

The scores of the three factors are added to provide a Potential for Harm score for each violation or group of violations. In this case, **a final score of 9** was calculated. The total score is then used in Step 2, below.

**Step 2 – Assessment for Discharge Violations**

This step addresses administrative civil liabilities for the spills based on both a per-gallon and a per-day basis.

1. Per Gallon Assessments for Discharge Violations

When there is a discharge, the Board is to determine an initial liability amount on a per gallon basis using on the Potential for Harm score and the extent of Deviation from Requirement of the violation. The Potential for Harm Score was determined above, and is 10.

The Deviation from Requirement reflects the extent to which the violation deviates from the specific requirement (effluent limitation, prohibition, monitoring requirement, etc.) that was violated. For this discharge, the Deviation from Requirement is considered “moderate” because the Discharger did not comply with the Water Code requirement to apply for a permit before discharging pollutants to waters of the U.S.

Table 1 of the Enforcement Policy (p. 14) is used to determine a “per gallon factor” based on the total score from Step 1 and the level of Deviation from Requirement. For this particular case, the factor is 0.5. This value is multiplied by the volume of discharge and the per gallon civil liability, as described below.

The Discharger estimated that 54,580,000 gallons of water discharged from the reservoir during the period in question, of which 6,700,000 gallons contained sediment from the bottom of the reservoir. Because the volume of the discharge is so great, it is considered a “high volume discharge” under the Enforcement Policy. For high volume discharges, the Enforcement Policy allows a value of either \$2/gallon (for sewage or storm water) or \$1/gallon

(for recycled water) instead of the maximum civil liability of \$10/gallon allowed under Water Code section 13385. In this case, it is appropriate to use the \$2/gallon civil liability for storm water because the pollutants from the reservoir were turbidity and sediment.

Water Code section 13385(c)(2) states that the civil liability amount is to be based on the number of gallons discharged but not cleaned up, over 1,000 gallons for each spill event. There was one discharge event, which continued for a period of five days. Therefore, of the 6,700,000 gallons discharged containing sediment, a total of 6,699,000 gallons were discharged in excess of 1,000 gallons during the reservoir draw down.

The Per Gallon Assessment is calculated as (0.5 factor from Table 1) x (6,699,000 gallons) x (\$2 per gallon). The value is \$6,699,000.

## 2. Per Day Assessments for Discharge Volumes

When there is a discharge, the Board is to determine an initial liability amount on a per day basis using the same Potential for Harm factor score (9) and the extent of Deviation from Requirement (Moderate) that were used in the per-gallon analysis. The “per day” factor (determined from Table 2 of the Enforcement Policy) is 0.5.

The sediment-laden spills that are the subject of this enforcement action occurred for a total of 2 days. Therefore, the Per Day Assessment is calculated as (0.5 factor from Table 2) x (2 days) x (\$10,000 per day). The value is \$ 10,000.

**Initial Liability Amount:** The value is determined by adding together the per gallon assessment and the per day assessment. For this case, the total is \$6,699,000 + \$10,000 for a total initial liability amount of **\$6,700,000**.

## Step 3 – Per Day Assessment for Non-Discharge Violation

The Enforcement Policy states that the Board shall calculate an initial liability for each non-discharge violation. In this case, this factor does not apply because all of the violations are related to the discharge from the reservoir, and the liability was determined in Step 2.

## Step 4 – Adjustment Factors

There are three additional factors to be considered for modification of the amount of initial liability: the violator’s culpability, efforts to cleanup or cooperate with regulatory authority, and the violator’s compliance history. After each of these factors is considered for the violations involved, the applicable factor should be multiplied by the proposed amount for each violation to determine the revised amount for that violation.

### Culpability

Higher liabilities should result from intentional or negligent violations as opposed to accidental violations. A multiplier between 0.5 and 1.5 is to be used, with a higher multiplier for negligent behavior. In this case, the discharge was intentional. In addition staff believes that negligence was involved because the Discharger failed to exercise a degree of care which a reasonable person would exercise under similar circumstances. Sluicing sediment out of a reservoir for

five days is not a normal operating procedure for a reservoir; the Discharger should have anticipated that such an action may impact downstream waterbodies with high flows and/or entrained sediment. The Discharger was given a multiplier value of 1.0.

#### Cleanup and Cooperation

This factor reflects the extent to which a discharger voluntarily cooperated in returning to compliance and correcting environmental damage. A multiplier between between 0.75 and 1.5 is to be used, with a higher multiplier when there is a lack of cooperation. In this case, DFW staff determined that it was not possible to cleanup the affected streams. The Discharger has neither cooperated with nor significantly hindered the investigation. Therefore, the Discharger was given a neutral multiplier value of 1.0.

#### History of Violation

When there is a history of repeat violations, the Enforcement Policy indicates a minimum multiplier of 1.1 to be used. Board staff understands that the Discharger has drained Priest Reservoir in the past, but this is the first event for which there was a complaint and a subsequent investigation. Therefore, the History of Violation factor is 1.0.

#### **Step 5 - Determination of Total Base Liability Amount**

The Total Base Liability is determined by applying the adjustment factors from Step 4 to the Initial Liability Amount determined in Step 2.

**Total Base Liability Amount:** This value is calculated as the Initial Liability Amount (\$6,700,000) X Adjustment Factors (1) (1) (1) and is equal to \$6,700,000.

#### **Step 6 - Ability to Pay and Ability to Continue in Business**

The ability to pay and to continue in business factor must be considered when assessing administrative civil liabilities. The Enforcement Policy provides that if staff anticipates that the Discharger's ability to pay or ability to continue in business will be a contested issue in the proceeding, staff should conduct a simple preliminary asset search. Here, the Discharger is a Department of the City and County of San Francisco that provides retail drinking water and wastewater services to San Francisco, wholesale water to three Bay Area counties, and green hydroelectric and solar power to San Francisco's municipal departments. The Discharger has over 2,300 employees working in seven counties with a combined annual operating budget of over \$700 million. According to the page 11 of SFPUC's 2011 Annual Report (available at [www.sfwater.org](http://www.sfwater.org)), net assets exceed liabilities by nearly \$2.0 billion. The Discharger thus has significant assets available to pay the proposed liability without causing undue hardship to the service population or to the Discharger. Moreover, the Discharger is a public entity with the power to levy fees that can be used to pay the some or all of the proposed liability.

#### **Step 7 – Other Factors as Justice May Require**

If the Central Valley Water Board believes that the amount determined using the above factors is inappropriate, the amount may be adjusted under the provision for "other factors as justice may require," but only if express findings are made to justify this.

Here, application of the Enforcement Policy factors results in a Total Base Liability Amount of \$6,700,000. This amount, though quite large, is the result of the application of the Enforcement Policy methodology to an extraordinarily large volume discharge that harmed beneficial uses in waters of the State and in waters of the United States. Nevertheless, such an amount is disproportionate to the circumstances surrounding the discharge. The harm to beneficial uses, though significant, will recover within two years (or sooner, according to the Discharger). Moreover, the Discharger has agreed to implement specific measures to prevent harm from future discharges from the facility, including scheduling drawdowns to occur during the wet weather season, providing aquatic refuge through a minimum pool, ramping release rates, monitoring sediment transfer and conducting biotic surveys. The specific measures are described in Attachment C to this Order. Were the Parties to not settle this matter, it is likely that the Discharger would expend considerable legal resources against this enforcement action, and it is far from certain that the Regional Board or a court would issue an order as favorable to the Prosecution Team as this settlement. Moreover, the punitive and deterrent goals of the Water Code and of the Enforcement Policy can be met here with a smaller, though by all definitions substantial, final liability amount of eight hundred thousand sixty-one dollars (\$800,061).

#### Costs of Investigation and Enforcement Adjustment

The costs of investigation and enforcement are “other factors as justice may require”, and should be added to the liability amount. Staff of the Central Valley Water Board has spent over 200 hours associated with the investigation of the discharges and preparation of the enforcement action. The State Water Board Office of Enforcement has directed that all regions are to use a value of \$150 per hour for staff costs. For this case, staff time through preparation of the Settlement is \$30,000.

#### **Step 8 – Economic Benefit**

Pursuant to CWC section 13385(e), civil liability, at a minimum, must be assessed at a level that recovers the economic benefits, if any, derived from the acts that constitute the violation. In general, the Discharger gained, and economically benefited, by rapidly drawing down the reservoir. The rapid draw down allowed the Discharger to repair and bring the water conveyance pipe line back into operation quicker. In addition, the rapid draw down sluiced sediment out of the bottom of the reservoir and saved the Discharger the cost of removing the sediment from the reservoir in an environmentally friendly manner. It is likely that the rapid drawdown created economic benefits as compared to a slower drawdown or some other process that would have prevented the discharge of accumulated bottom sediments, but such benefits are impossible to calculate without more information. Therefore, the economic benefit is estimated to be zero (\$0), which becomes the minimum civil liability which must be assessed pursuant to section 13385. The Enforcement Policy states (p. 21) that the total liability shall be at least 10% higher than the economic benefit, “so that liabilities are not construed as the cost of doing business and the assessed liability provides a meaningful deterrent to future violations.”

#### **Final adjusted liability**

After considering all of the factors, the Prosecution Team has reduced the calculated base liability amount to eight hundred thousand sixty-one dollars (\$800,061), which includes staff costs.

**Step 9 – Maximum and Minimum Liability Amounts**

The maximum and minimum amounts for discharge violation must be determined for comparison to the amounts being proposed. These values are calculated in the ACL Complaint, and the values are repeated here.

Maximum Liability Amount: \$ 67,010,000

Minimum Liability Amount: the minimum liability is equal to the economic benefit, which estimated to be \$0.

**Step 10 – Final liability Amount**

The final liability amount consists of the added amounts for each violation, with any allowed adjustments, provided amounts are within the statutory minimum and maximum amounts. Without further investigation of the discharge, calculation of economic benefits, and additional staff time, the proposed Administrative Civil Liability is **eight hundred thousand sixty-one dollars (\$800,061)**.

**Attachment B – ACL Order R5-2013-0545  
 Supplemental Environmental Project Description  
 SFPUC Priest Reservoir  
 5-9 December 2011 Discharge**

**1. Overview**

The Central Valley Water Board and the California Department of Fish and Wildlife (CDFW) share common goals, including the protection of waters from pollution and minimizing deleterious impacts to the environment, or to public health and safety. The Central Valley Water Board has the primary authority for regulating and ensuring the quality of waters of the State within the Central Valley Region, and CDFW’s Water Pollution Response and Resource Protection Program further protects the State’s natural resources and water quality through responding to pollution incidents, coordinating enforcement and response efforts, and protecting, preserving and restoring fish and wildlife impacted by such incidents. The CDFW Program responds to, on average, over 700 pollutant discharge events to state surface waters annually, many within the Central Valley Region, including oil spills and spills of deleterious materials consisting of sediment, dairy/agricultural waste, sawdust, and other contaminants that harm aquatic resources.

**2. Projects**

This SEP consists of the five specific projects listed in Table 1. These projects were developed, and will be implemented, by CDFW.

<b>TABLE 1</b>	
<b>Project Name</b>	<b>Project Cost</b>
Merced and Stanislaus Counties Watershed Project [Watershed Project]	\$133,835
Natural Resource Damage Assessment 101 Training [NRDA Training]	\$36,018
Spill Response Training [Spill Response Training]	\$143,300
Pollution Action Kits for CDFW Response Personnel [Pollution Action Kits]	\$10,551
Water Quality Monitoring of Marijuana Cultivation Sites [Water Quality Monitoring of MCS]	\$76,326
<b>TOTAL COST</b>	<b>\$400,030</b>

An overview of each project is presented below, with detailed information and project budgets included at the end of this document.

- a. **Merced and Stanislaus Counties Watershed Project [Watershed Project].** This project was developed in light of an increase in the amount of sediment discharges to the Stanislaus, Tuolumne, and Merced Rivers. A number of these discharges have resulted in significant degradation of the water quality of these rivers and their tributaries, and have impacted aquatic species and habitats. In addition, monitoring efforts by various agencies have recorded continued releases of ammonia constituents into the tributaries of these watersheds. The releases have concentrations that have been determined to be chronically and acutely deleterious to most or all of the aquatic species. In the proposed project area, there are numerous critical spawning ground habitats for Steelhead and Chinook salmon. These fish are being impacted by the pollution in each of the watersheds. This project proposes to focus on these two main constituents in these three watersheds because of their recent history of incidents and anticipated increases of discharge events as additional land is graded in the foothill geography. This project will identify current and potential impact sources, develop a monitoring plan to identify point sources and evaluate the impacts to develop mitigation strategies based on findings.
- b. **Natural Resource Damage Assessment 101 Training [NRDA Training].** The Natural Resource Damage 101 Training will train CDFW employees in four CDFW Regions to recognize situations where NRDA may be appropriate, identify the information needed to conduct an NRDA, understand how restoration funds from NRDA are used, and establish appropriate CDFW contacts for assistance in conducting a NRDA.
- c. **Inland Spill Response Training for Regional Staff [Spill Response Training].** Spills of oil and other deleterious substances to inland state waters can result in significant losses to natural resources and their habitat. The CDFW is the primary agency responsible for responding to pollution incidents to ensure proper remediation and minimization of environmental impacts. CDFW staff must be prepared for prompt responses to pollution events to state waters. The primary staff responding to these spills is from the Law Enforcement Division, along with the support of regional scientific staff. Training is required for staff to understand the deleterious nature of pollutants, appropriate response strategies, and sampling techniques. The goal of the spill response training is to create a team of CDFW experts that can efficiently and effectively respond to spills, conduct causal assessments that utilize appropriate water quality or other site and case specific data, and prepare the necessary reports to support subsequent efforts by CDFW.
- d. **Pollution Action Kits for CDFW Response Personnel [Pollution Action Kits].** Pollution Action Kits are disposable evidence gathering kits for investigative and pollution response staff to use when investigating a pollution incident. CDFW staff statewide use the kits, which are prepared by the CDFW Laboratory and distributed to appropriate response staff. The CDFW-Lab, in coordination with CDFW Enforcement staff, have selected appropriate equipment to facilitate safe evidence collection efforts and compiled that equipment into one kit. The kits are prepared in advance and ready to be used by response staff.

- e. Water Quality Monitoring of Marijuana Cultivation Sites.** The combination of forest conversion by Marijuana Cultivation Sites (MCS), poor sediment control during and after site construction, use of rodenticides and other poisons, release of contaminants such as diesel fuel and fertilizers, and water diversions all impact terrestrial and aquatic species. Aquatic species of particular concern include State and federal listed salmon and steelhead populations, some of which are suffering significant long-term decline in their populations. Quantifying water quality impacts are exceedingly challenging given the clandestine nature of these operations, cultivators' mistrust of county, State and federal regulators and scientists attempting to assess environmental impacts, and related legal and safety concerns. The goals of this project are to assess and quantify marijuana cultivation impacts on water quality and its potential to significantly threaten recovery of State and federally listed salmonids.

CDFW proposes to conduct water quality monitoring at MCS's throughout Northern California, including within the Central Valley Region. Sediment discharges from road construction, MCS grading (developing flat ground on steep hill-slopes for greenhouses and outdoor plantings), and improperly sized culverts at road/stream crossings are the primary pollution sources observed during enforcement actions. In addition, CDFW commonly observes large quantities of both liquid and solid fertilizers at these same sites. Fertilizers include nitrogen, phosphorus, and potassium in gallon containers and/or large bags. Fertilizers are applied either directly to plants prior to watering, or mixed with water in large tanks and subsequently applied to plants. By the end of this project, CDFW will have conducted intensive water quality monitoring at a minimum of four sites, and field water quality and quantity monitoring at 16 sites.

### **3. Compliance with SEP Criteria**

The projects here meet the criteria set forth in the State Water Resources Control Board's February 3, 2009, Policy on Supplemental Environmental Projects (SEP Policy).

**a. Beyond Obligations of Discharger**

This SEP contains only measures that go above and beyond applicable obligations of the Discharger: San Francisco Public Utilities Commission (SFPUC) has no obligation to implement any of the CDFW projects described here. (SEP Policy C.1.)

**b. Water Quality Benefits**

The projects here shall directly benefit or study groundwater or surface water quality or quantity, and the beneficial uses of the State. (SEP Policy C.2.)

**i. Watershed Protection Program**

The Watershed Protection Program will improve water quality in the identified watersheds because it provides for immediate notification of appropriate responders if water quality is compromised. This immediate notification will allow them to respond, abate the pollution at the source and implement appropriate mitigation measures. This is preferential to waiting for a discharger to call in and report a discharge or wait for the discharge to be noticed and

called in by a member of the public. Immediate notification will decrease the response time and allow for appropriate minimization and abatement actions to occur during or shortly after the discharge event.

ii. **Natural Resource Damage Assessments**

Natural Resource Damage Assessments are important in improving water quality because assessments result in damage claims and recoveries. Damage recoveries are used to implement restoration projects, which have a nexus to the injury. Generally, NRDA's document interim loss to aquatic receptors and restoration projects are used to improve water quality and habitat for the aquatic receptors that were injured with a discharge.

iii. **Spill Response Training/Pollution Action Kits**

Providing spill response training and pollution action kits will improve responder's readiness and preparedness to adequately respond to inland pollution incidents. Immediate response is crucial to determine the cause of the incident, abate any continued discharges, and determine appropriate measures to minimize environmental impacts associated with the discharge. To accomplish this, staff are in need of appropriate training. Traditionally, the OSPR Inland Pollution Program guided response to pollution events statewide, but absent appropriate funding, the Program dissolved and CDFW regional programs now respond to inland pollution events. Since pollution response has not been a long-standing function performed by regional staff, this training will bolster the readiness and preparedness for those staff to respond to pollution incidents.

iv. **Water Quality Monitoring of MCS**

Water Quality Monitoring of MCS and data across northern California will help increase the understanding of the impact of the MCS threat on a watershed and regional scale. A more detailed understanding of marijuana cultivation water use patterns will also contribute to a more refined impact assessment.

c. **No Direct Benefit**

The SEP does not directly benefit, in a fiscal manner, the Central Valley Water Board's functions, its members, or its staff. Neither will SFPUC's board, board functions, or staff benefit from the SEP. All of the funds will be used for the project as described. None of the recipients are connected to SFPUC. (SEP Policy C.3.)

d. **Nexus**

The SEP projects described here all have a nexus with the nature or location of the discharge violation. A nexus exists if the project remediates or reduces the probably overall environmental or public health impacts or risks to which the violation at issue contributes, or if the project is designed to reduce the likelihood that similar violations will occur in the future. The Watershed Project will be implemented in the same watershed as the discharge. The remaining projects will provide training and

resources to respond to similar discharges and minimize the impacts resulting from such discharges in the Central Valley Region and statewide. (SEP Policy D.2, E.)

**e. Additional Qualification Criteria**

- i. All of the proposed SEP projects involve documented support by CDFW. (SEP Policy D.1.)
- ii. The proposed SEP projects do not require review pursuant to the California Environmental Quality Act. (SEP Policy D.3.)
- iii. The SEP proposals do not anticipate being the basis for additional funding from other sources. (SEP Policy D.4.)
- iv. The entity responsible for the projects is CDFW, a State agency with institutional stability and capacity to complete the SEP and comply with the work product and reporting requirements set forth here. (SEP Policy D.5.)
- v. The SEP proposal includes success criteria and monitoring requirements. (SEP Policy D.6.)

**4. Key CDFW Personnel**

Julie Yamamoto  
Scientific Branch Chief  
California Department of Fish and Wildlife  
Office of Spill Prevention and Response

Captain Paul Hamilton  
California Department of Fish and Wildlife  
Law Enforcement Division

Project specific personnel are listed in the individual project descriptions at the end of this document.

**5. Project Implementation, Completion and Milestones**

The Watershed Project, Spill Response Training, NRDA Training and Water Quality Monitoring of MCS will be completed within three years of receipt of SEP funds. This time-frame factors-in any applicable travel bans and other workload priorities of instructors. Additionally, the classes will need to be timed in a manner to ensure that CDFW is maximizing the number of participants for each class. The Pollution Action Kits will be purchased within 6 months of receipt of SEP funds.

**6. Performance Measures**

**a. Merced and Stanislaus Counties Watershed Project**

Performance measures to assess the success of this SEP include the identification of possible pollution event locations, identification of pollution constituents that have the potential to run off, and the potential environmental impact of those constituents. When pollution events are detected, then education, communication, and enforcement will be used to correct the problems. Continued monitoring of the pollution event site will occur to determine if the corrective measures have been successful. Based on these results, program monitoring and implementation adjustments will be made as needed.

**b. Natural Resources Damage Assessment 101 Training**

Performance standards to assess SEP success of the NRDA 101 training and Spill Response Training will be developed with guidance from the CDFW, Office of Training and Development, as appropriate. CDFW has established course outlines for NRDA 101 and Spill Response Training (attached). The outlines will be modified as appropriate per information obtained through the course evaluations to ensure that the most current and emerging trends in Spill Response and NRDA techniques are incorporated.

**c. Spill Response Training**

Performance criteria for the spill response training consists of conducting the described training classes.

**d. Pollution Action Kits for CDFW Response Personnel**

Performance standards to assess SEP success of the Pollution Action Kits project are comprised of the purchase, assembly and distribution of the kits to appropriate responders.

**e. Water Quality Monitoring of Marijuana Cultivation Sites**

The performance standards to assess SEP success of the Water Quality Monitoring of MCS include gathering of data as proposed, analysis of the data, and the drafting and publishing of a paper based on the water quality monitoring efforts from 2013-2014, as proposed in the project proposal.

**7. Deliverables**

**a. Project Reports**

CDFW will submit an Annual Project Status Report by January 31 of each year, and will continue until project completion. The Annual Project Status Report will contain a description of each CDFW SEP Project and the status of its implementation. The Annual Report will be submitted to the Regional Water Board and State Water Board contacts identified in Section 8, below.

Deadlines for project submittals are as follows:

<u>Reporting Period</u>	<u>Report Due Date</u>
June 2013 - December 2013	January 31, 2014
January 2014 - December 2014	January 31, 2015
January 2015 - December 2015	January 31, 2016
January 2016 - December 2016	January 31, 2017

Final Reports prepared for the Watershed Project and the Water Quality Monitoring of MCS will also be shared with the Water Boards.

**b. Accounting Reports**

CDFW will submit an Annual Accounting Report by January 31 of each year. Funds will be placed within a segregated deposit account at CDFW. The Annual Project Accounting Report will contain the following categories, broken out on a project-by-project basis: yearly beginning balance, prior year adjustments, adjusted beginning balance, revenues, transfers and other adjustments, current revenues, total revenues, expenditures and appropriations on a project basis, total expenditures, fund balance and the difference between the current revenue and expenditures. The Annual Accounting Report will be submitted to the Regional Water Board and State Water Board contacts identified in Section 8, below.

**8. Contacts**

If there are any questions regarding the implementation of this CDFW SEP, please feel free to contact any of the following:

Regional Water Board:

Wendy Wyels  
Regional Water Quality Control Board  
Central Valley Region  
11010 Sun Center Drive, Suite 200  
Rancho Cordova, CA 95670  
(916) 464-4835  
[wwyels@waterboards.ca.gov](mailto:wwyels@waterboards.ca.gov)

State Water Board:

Ann Marie Ore  
State Water Resources Control Board  
1001 I Street  
Sacramento, CA 95814  
(916) 327-8195  
[amore@waterboards.ca.gov](mailto:amore@waterboards.ca.gov)

CDFW:

Wendy Johnson  
Senior Staff Counsel  
California Department of Fish and Wildlife  
Office of Spill Prevention and Response  
1700 K Street, Suite 250  
Sacramento, CA 95811  
(916) 324-7628  
[wendy.johnson@wildlife.ca.gov](mailto:wendy.johnson@wildlife.ca.gov)

SFPUC:

Steven R, Ritchie  
Assistant General Manager  
San Francisco Public Utilities Commission  
525 Golden Gate Avenue, 13<sup>th</sup> Floor  
San Francisco, CA 94102

**9. Detailed Project Descriptions (following pages)**

# **Merced and Stanislaus Counties Watershed Project [Watershed Project]**

Water Quality Budget Proposal (2 Years)		
(1) Meritz2 Multi-probe with Sensors (Remote Water Meter)	\$5,600.00	(4) Tape Measure \$100.00
(1) Underwater Cable (Remote Water Meter)	\$500.00	(4) Backpacks \$100.00
(1) Solar Panel (Remote Water Meter)	\$300.00	(4) Lap Top Computers \$8,000.00
(2) Years of Online Web Service Air Time (5 Remote Meters)	\$10,935.00	(4) Terrain Navigator Pro Software \$1,200.00
(5) Ammonia Sensors (Remote Water Meter Addition Sensors)	\$4,600.00	(4) Vehicle Power Inverter \$600.00
Water Testing Equipment Maintenance/Replacement Parts (2 Years)	\$10,000.00	Project Implementation/Staff Hours \$60,000.00
Water Sample Lab Testing - DFW Lab (2 Years)	\$10,000.00	Administrative and Field Supplies \$2,000.00
(4) Field Kit Carrying Bags	\$200.00	Sub Total \$134,355.00
(4) Turbidity Meters	\$4,000.00	General Meter Discount (Eureka Environmental) (-)
(4) Ammonia Sensor Meters	\$2,000.00	Total Budget \$133,835.00
(4) Flow Meters	\$4,000.00	
(4) Cameras w/GPS	\$2,800.00	
(4) GPS Units	\$2,000.00	
(4) Flashlights w/Charger	\$400.00	
(4) Range Finders	\$1,000.00	
(4) Sample Poles	\$100.00	
(4) Sample Pole Baskets	\$600.00	
(4) Electro-Conductivity Meters	\$3,200.00	
(4) Ice Chests	\$120.00	

# **Natural Resource Damage Assessment 101 Training [NRDA Training]**

## NATURAL RESOURCE DAMAGE ASSESSMENT 101

### COURSE DESCRIPTION

Department of Fish and Game (DFG) is a public trustee for fish and wildlife resources in California. Natural Resource Damage Assessment (NRDA) is one of the mechanisms through which the Department can seek compensation when the actions of an individual or party result in unpermitted impacts to fish, wildlife, or their habitats. Through NRDA, the Department can obtain funds to implement restoration and resource enhancement projects that benefit both the public and the resources that were harmed.

The course covers:

- What is Natural Resource Damage Assessment (NRDA)?
- Process of NRDA
- Legal Background of NRDA
- Economics of NRDA
- Basics of Injury Assessment
- Restoration in NRDA
- Coordination within DFG and between Other Agencies

AT THE CONCLUSION OF THIS TRAINING, A STUDENT WILL BE ABLE TO:

- Recognize situations where NRDA may be appropriate and benefit DFG's mission
- Identify the information needed to conduct a NRDA
- Understand how restoration funds from NRDA are used
- Know who to contact within DFG for assistance in NRDA

WHO SHOULD ATTEND:

This class is open to all DFG employees, but may be particularly relevant to managers, supervisors, and staff involved in enforcement, spill response, habitat conservation, streambed alteration, and fisheries restoration programs.

INSTRUCTORS

A team of technical experts in toxicology, economics, and law from DFG's Office of Spill Prevention and Response (OSPR) who conduct NRDA for marine and inland cases statewide.

COURSE LENGTH

5 hrs.

**NRDA 101: Estimated Cost of Proposed Training**

**Table 1. Overall Costs**

CDFW Region <sup>1</sup>	Number of Days	Number of Staff <sup>2</sup>	Flight	Hotel	Meals	Staff Travel Cost	Personnel Cost	Rental Vehicle Cost	State Vehicle Miles	State Vehicle Cost	Vehicle Cost	Total
(Class Location)	(including travel)		(per staff)	(per staff)	(per day, per staff)	(sub-total)	(sub-total; Table 2)	(per trip)	(per trip)	(\$0.565/mi; per trip)	(sub-total)	
1 (Redding)	2	4	\$0	\$100	\$40	\$1,120	\$9,542	\$0	324	\$183	\$183	\$10,845
2 (Sacramento)	1	4	\$0	\$0	0	\$0	\$6,517	\$0	0	\$0	\$0	\$6,517
3 (Yountville)	1	4	\$0	\$0	0	\$0	\$6,517	\$0	136	\$77	\$77	\$6,594
6 (Ontario)	2	4	\$315	\$150	\$40	\$2,020	\$9,542	\$500	0	\$0	\$500	\$12,062
											<b>GRAND TOTAL</b>	<b>\$36,018</b>

<sup>1</sup> NRDA 101 class has been given at the following locations: Los Alamitos & San Diego (Region 5), Eureka (Region 1), and Fresno (Region 4). Additional funding is requested to bring the class to the four CDFW Regions listed.

<sup>2</sup> M. Anderson participation in preparation and coordination, but not travel.

<sup>3</sup> Estimated mileage from Sacramento to identified location.

**Table 2. Personnel Costs**

Staff Member	Rate/Hour	Preparation		Training/Travel Cost
		Preparation Hours	Preparation Cost	
		(per class)	(per class)	(per day)
S. Hampton	\$86	10	\$861	\$689
K. Verrue-Slater	\$115	5	\$576	\$921
B. Stanton	\$91	10	\$908	\$726
M. Zafonte	\$86	10	\$861	\$689
M. Anderson	\$96	3	\$287	\$0 <sup>1</sup>
<b>Sub-total</b>			<b>\$3,492</b>	<b>\$3,025</b>

<sup>1</sup> M. Anderson participation in preparation and coordination, but not travel.

## **Inland Spill Response Training for Regional Staff [Spill Response Training]**

## **COURSE OUTLINE**

- Overview and Introductions
- Spill Examples
- Why Response and Pollution Investigation is Important
  - Protect human health and the environment
  - Enforce environmental law
  - Compensate for natural resource injury
- Who is Involved (roles and coordination)
  - CDFW
    - Enforcement (Regional and OSPR)
    - Scientific (Regional, Headquarters, OSPR)
    - Legal (Headquarters and OSPR)
  - Other agencies
  - Responsible Party
- Response Actions
  - Health and Safety
  - Address ongoing release
  - Site Remediation
- Scientific Support
  - Deleteriousness
  - Biological Support
  - Minimize response impacts
- When and How to Sample
  - Sampling Design and Techniques
  - Sampling Equipment and Supplies
  - Lab Coordination
  - Documentation
- How to document natural resource injury (for investigation and NRDA)
  - Contacts
  - Field activities
  - Documentation
- How to Pursue a Case
  - Report Preparation
  - Cost Recovery
  - Deleterious Materials and Environmental Damage Threshold

**Table 1. BUDGET SUMMARY (additional details in Tables 2 and 3 below)**

<b>DFG Region</b>	<b>Travel Cost</b>	<b>Staff Time Cost</b>	<b>Total</b>
Initial Class Preparation	\$0	\$32,066	\$32,066
1 (2 locations)	\$2,054	\$17,414	\$19,468
2 (Sacramento)	\$0	\$9,487	\$9,487
3 (Yountville)	\$120	\$9,487	\$9,606
4 (Fresno)	\$1,715	\$13,450	\$15,166
5 (2 locations)	\$3,411	\$17,414	\$20,825
6 (2 locations)	\$4,034	\$17,414	\$21,448
4/7 (Monterey)	\$1,763	\$13,450	\$15,213
			<b>\$143,300</b>

**Table 2. TRAVEL AND STAFF TIME DETAILS**

DFG Region	Number of Days	Number of Staff	Flight	Hotel	Per Diem	Staff Travel Cost	Staff Time Cost	Rental Car Cost	State Car Miles
Initial Class Preparation	0	0	\$0	\$0	\$0	\$0	\$32,066	\$0	0
1 (2 locations)	3	4	\$0	\$100	\$40	\$1,680	\$17,414	\$0	662
2 (Sacramento)	1	4	\$0	\$0	\$0	\$0	\$9,487	\$0	0
3 (Yountville)	1	4	\$0	\$0	\$0	\$0	\$9,487	\$0	212
4 (Fresno)	2	5	\$0	\$100	\$40	\$1,400	\$13,450	\$0	558
5 (2 locations)	3	4	\$500	\$150	\$40	\$2,780	\$17,414	\$500	232
6 (2 locations)	3	5	\$500	\$150	\$40	\$3,360	\$17,414	\$500	325
417 (Monterey)	2	5	\$0	\$100	\$40	\$1,400	\$13,450	\$0	642
Assumes no travel expenses for Regional Pollution Lieutenant except for Regions 4, 6, & 7									

**Table 3. STAFF TIME COST DETAILS**

Staff Member	Classification	Rate/Hour	Initial Preparation Hours		Initial Preparation Cost		Preparation Hours	Preparation Cost
			(1-time)	(1-time)	(1-time)	(per class)		
S. Hampton / M. Zafonte <sup>1</sup>	Economist (RPS III)	\$86	10	\$861	10	\$86		
K. Verrue-State / W. Johnson	Staff Counsel III	\$115	10	\$1,151	3	\$34		
B. Stanton	Staff Toxicologist	\$91	40	\$3,632	10	\$90		
M. Anderson <sup>1</sup>	Senior Toxicologist	\$96	10	\$956	3	\$28		
Regional Pollution Lieutenant <sup>2</sup>	Pollution Lieutenant (Specialist)	\$66	240	\$15,756	10	\$65		
J. Rinderneck	Pollution Lieutenant (Captain)	\$75	10	\$754	3	\$22		
J. Rinderneck	Staff Environmental Scientist	\$80	40	\$3,195	10	\$79		
S. McMillin	Environmental Scientist	\$69	40	\$2,775	10	\$69		
J. McCall	Staff Chemist	\$75	40	\$2,986	10	\$74		
<b>Sub-total</b>				<b>\$32,066</b>		<b>\$5,574</b>		

<sup>1</sup> participation in preparation and coordination, but not travel  
<sup>2</sup> 40 hrs of preparation for each Regional Pollution Lieutenant

**ATTACHMENT A: HAZWOPER TRAINING PROPOSAL AND BUDGET**

Under the California Code of Regulations, Title 8, Section 5192, workers (such as equipment operators, general laborers, and supervisory personnel) engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances and health hazards must receive a minimum of 40 hours of instruction off the site, and a minimum of three days actual field experience under the direct supervision of a trained, experienced supervisor.

Workers on site only occasionally for a specific limited task (such as, but not limited to, ground water monitoring, land surveying, or geo-physical surveying) and/or workers who are regularly on site that work in areas which have been monitored and fully characterized indicating that exposures are under PELs and published exposure levels where respirators are not necessary, and the characterization indicates that there are no health hazards or the possibility of an emergency developing, must receive a minimum of 24 hours of instruction off the site and the minimum of one day actual field experience under the direct supervision of a trained, experienced supervisor.

It is anticipated that most CDFW employees who would be expected to respond to a hazardous materials release would fall into the occasional/limited task worker classification, and would therefore be required to complete the 24-hour training program.

The estimated costs presented below are based on a single session, with three days of class, two days of travel, and twenty participants per class. The listed personal protective equipment (PPE) consists of PPE needed for a single suit-up exercise conducted in class and additional PPE to provide a small cache for the Region. Instruction for each class will be provided by the two CDFW/OSPR Senior Industrial Hygienists. Since there is a tremendous variance in distance to different locations in the State, the average total driving mileage per class was estimated to be 400 miles.

**Table 4. PER CLASS COSTS.**

<b>Item</b>	<b>Cost</b>
Class Books	\$200
Tyvek CPC	\$800
Nitril Outer Gloves	\$150
Nitril Inner Gloves	\$45
Chem Tape	\$150
Hazmat Boots	\$1,900
IH Salary	\$3480
Lodging	\$800
Per Diem	\$350
Vehicle	\$225
<b>Estimated Total Cost per Class</b>	<b>\$8,100</b>

**Table 5. ESTIMATED COST FOR MULTIPLE CLASSES**

<b># of classes</b>	<b>Cost</b>
3	\$24,300
4	\$32,400
5	\$40,500
6	\$48,600
7	\$56,700
8	\$64,800
9	\$72,900

**POLLUTION ACTION KITS FOR  
CDFW RESPONSE PERSONNEL  
[POLLUTION ACTION KITS]**

**Proposal to Acquire 100 Pollution Action Kits for Department of Fish and Wildlife Pollution Responders**

**Cost: \$10,551.**

**Contact:**

**Jim McCall**

**Department of Fish and Wildlife**

**916.358.2702**

**Purpose: Evidence gathering is crucial during pollution response and for any subsequent enforcement actions. Pollution Action Kits are disposable evidence gathering kits for investigative and pollution response staff to use when investigating a pollution incident. DFW staff statewide use the kits, which are prepared by the Department of Fish and Wildlife Laboratory and distributed to appropriate staff. The DFW-Lab, in coordination with DFW Enforcement staff, have selected appropriate equipment to facilitate the evidence collection effort and compiled that equipment into one kit. The kits are prepared in advance and ready to be used by appropriate Department of Fish and Wildlife response personnel. Kits are distributed to each Fish and Wildlife Warden graduating from the Fish and Wildlife Academy, as well as, appropriate regional water quality biologists. The Department tries to retain a sufficient supply to distribute to appropriate response personnel who have used a kit during spill response and investigation to ensure that they always have on whenever the need arises. The Department of Fish and Wildlife, Inland Pollution Program would like to acquire one hundred of the kits to distribute to Warden Cadets in the academy and to maintain a reserve when the kits are used in the field. The Inland Pollution Program no longer has sufficient funds to acquire the Pollution Action Kits for response personnel. The Program is concerned about response personnel not having convenient access to appropriate personal protective equipment and sampling equipment, but does not have funding to purchase the kits for responders statewide, nor do our Regional offices have the requisite funds to purchase the kits for their staff since the Inland Pollution Program traditionally supplied the kits to appropriate staff. The DFW tries to recover the cost of the kit from viable dischargers in any subsequent enforcement actions.**

**A list of Pollution Action Kit contents and cost per item/unit is attached.**

**Pollution Action Kit Budget Detail**

Item	Supplier Number	VWR Number	Price	Unit
Bubble wrap bags 12 1/2 x 12 1/2	532-10	80082-635	\$51.64	250/cs
Large Plastic bags	MGRL4WH0912	83007-552	\$119.92	1000/cs
Small Plastic bags	501	IR501	\$27.64	96/pk
Tweezers		82007-656	\$101.26	100/cs
Tweezer Storage	IC461SWHLGQB	89125-644	\$181.51	300/cs
Tweezer Storage	IC501BWH000B	89127-350	\$83.06	100/cs
Gloves, nitrile	117077	32890-096	\$217.16	144/cs
Gloves, nitrile	7005L	32933-902	\$209.31	2000/cs
Paper towels	WIP100	89073-902	\$37.83	900/cs
Clear plastic vest	AA2424M	47746-364	\$60.83	500/cs
Glass jar 1/2 gal		89093-980	\$52.17	24/cs
Glass jar 1/2 gal		89093-976	\$43.03	24/cs
100 test strips	9590-3	EMD-9590-3	\$35.74	600/cs
100 test strips	175750030	89097-530	\$48.66	72/pk
Calibration bag	314-1000	IR314-1000	\$49.85	12/cs
Fiberglass cloth	#08-277		\$28.80	4/cs
Plastic bags 12 1/2 x 12 1/2	MGRL4PH0608	46610-644	\$80.41	1000/cs
Hard Wipes	B60307	15648-916	\$48.51	4000/cs
Thermometers		89095-534	\$105.18	10/cs
Pencils	UNV55144	500020-979	\$9.59	144/pk
Sterile pipette tips	SAN35001	500034-966	\$18.80	112/pk
Portable decontaminant	704	62505-007	\$14.33	500/pk
Emergency kit	CS-001	EPCS-001	\$26.85	100/pk
Calibration bag	314-0001	JR314-0001	\$71.30	12/cs
Disp. 7.5 mL nalgene pipette		414004-004	\$89.91	5000/cs
Disp. 23 mL nalgene pipette			\$81.38	1000/cs
PAK Instructions:				
Workbooks				
CoC				
Carboard Boxes	R-52		\$0.65	ea
Box Tape	220636		\$16.99	6/pk
Cardboard wrap for jars	559216		\$39.49	ea

## **Water Quality Monitoring of Marijuana Cultivation Sites Funding Proposal 2013**

### **Applicant Information**

**Name:** California Department of Fish & Wildlife, Habitat Conservation Program, Coastal Conservation Planning Office.

**Contact Person(s):** Tony LaBanca, Senior Environmental Scientist, (707) 441-2098  
Scott Bauer, Staff Environmental Scientist, (707) 441-2011

**Office Address:** 619 2<sup>nd</sup> Street, Eureka, CA 95501

**Email Addresses:** [tony.labanca@wildlife.ca.gov](mailto:tony.labanca@wildlife.ca.gov), [scott.bauer@wildlife.ca.gov](mailto:scott.bauer@wildlife.ca.gov)

### **Issue Summary**

Marijuana (*Cannabis sativa* L.) has been cultivated in the backwoods of northern California at least since the countercultural movement of the 1960s with few documented environmental impacts. Industrial-scale marijuana cultivation however is a more recent phenomenon and appears, in part, a response to Proposition 215, the Compassionate Use Act of 1996, a California law which provides for the legal use of medical marijuana. As a result of Proposition 215, large-scale, widespread, and largely unregulated cultivation of marijuana has increased rapidly since the mid-1990s in many counties throughout California. Large-scale marijuana cultivation often entails bulldozing and grading sites of a half-acre or more to grow outdoor plants, install one or more large greenhouses (often >400 ft<sup>2</sup>), marijuana drying and processing facilities and related structures, and often, residences for the cultivators.

Because of the quasi-legal status of marijuana cultivation in California (cultivation remains illegal under Federal law) and the crops high market value, making it vulnerable to theft, large outdoor marijuana cultivation sites (MCS) are most commonly built in remote forested and mountainous locations where detection by the public and law enforcement is minimized.

MCS are typically situated on land with reliable year-round water sources to provide for irrigation throughout the hot dry summer growing season. Diverting mountain springs, seeps, and perennial streams is the most common means for MCS to acquire irrigation water, though California Department of Fish and Wildlife (CDFW) field staff have documented the use of groundwater wells and importing water by truck.

The combination of forest conversion by MCS, poor sediment control during and after site construction, use of rodenticides and other poisons, release of contaminants such as diesel fuel and fertilizers, and water diversions all impact terrestrial and aquatic species. Aquatic species of particular concern include State and federal listed salmon and steelhead populations, some of which are

suffering significant long term decline in their populations. Quantifying water quality impacts are exceedingly challenging given the clandestine nature of these operations, cultivators' mistrust of county, State and federal regulators and scientists attempting to assess environmental impacts, and related legal and safety concerns. The goals of this proposal are to assess and quantify marijuana cultivation impacts on water quality and its potential to significantly threaten recovery of State and federal listed salmonids.

### Water Quality Monitoring

CDFW proposes to conduct water quality monitoring at MCS's throughout Northern California. CDFW has documented significant sediment and/or pollutant discharge events at more than 20 MCS's over approximately two years. Sediment discharge from road construction, MCS grading (developing flat ground on steep hillslopes for greenhouses and outdoor plantings), and improperly sized culverts at road/stream crossings are the number one pollution source observed during enforcement actions. In addition, CDFW commonly observes large quantities of both liquid and solid fertilizers at these same sites. Fertilizers include nitrogen, phosphorus, and potassium in gallon containers and/or large bags. Fertilizers are applied either directly to plants prior to watering, or mixed with water in large tanks and subsequently applied to plants.

Rodenticides are another water quality pollutant found during MCS enforcement efforts. This pollutant is spread around the perimeter of MCS's to control plant predation by rodents. Also, the use of insecticides is commonly documented at MCS's. Pesticides include commonly used products such as Ortho, to much more hazardous products such as Furadan and Avid (both banned in the US). Pesticides are used to control everything from aphids to spider mites. Fungicides are another important component of marijuana cultivation. Marijuana is prone to powdery mildew, rust, and other plant ailments associated with excess moisture. Aerosol spraying is a common application method. Lastly, diesel fuel spills have been observed on a number of MCS's. Outdoor marijuana cultivation often includes an indoor cultivation component in order to maintain a year round source of income. Given the remote nature of a typical MCS, electricity must be generated on-site to power grow lights. Spills typically occur because diesel tanks lack containment structures, improperly maintained equipment (leaking fuel lines), and the haphazard nature of tank refueling.

In order to better characterize the environmental impacts from the potential pollutant discharges to State waters described above, CDFW proposes to conduct intensive water quality monitoring at a minimum of four sites, and field water quality and quantity monitoring at 16 sites through calendar year 2014. CDFW Habitat Conservation Planning (HCP) will monitor water quality from MCS utilizing the Surface Water Quality Ambient Monitoring Program (SWAMP), conventional lab water quality analysis methods, and standard field methods. Field methods include the use of a turbidity meter, flow meter, and Yellow Springs Instrument to measure dissolved oxygen, PH, temperature,

**conductivity. CDFW's Office of Spill Prevention and Response (OSPR), Water Pollution Control Lab (WPCL) will analyze all water quality samples.**

**CDFW HCP will conduct two sampling events on marijuana cultivation enforcement sites, and two on MCS case study watersheds (Redwood and Salmon creeks, tributaries to the South Fork Eel River). CDFW has analyzed MCS water use in these watersheds utilizing GIS and Google Earth imagery, and determined water withdrawal for this activity is likely to be having a substantial effect on aquatic species (see attached MJ Executive Summary). Water quality sampling in these watersheds will complement our current research and provide important data on the effects of MCS on overall watershed health. Sampling events will consist of gathering water samples in the field to analyze trace organic chemistry, conventional water chemistry, and in some cases diesel and toxins. In addition, CDFW will sample sediment for physical characteristics analysis, and conduct a biological and habitat assessment of the affected stream.**

**The nature of sampling events will vary based on research needs, enforcement actions, and landowner access. On CDFW enforcement sites, a total of four samples will be taken at each MCS; one upstream from the MCS, one at the site, and two downstream. In the Redwood Creek case study watershed, one sample will be taken from a site upstream from MCS's in an unimpaired section of the watershed, and two near the mouth of the affected stream. Due to a lack of landowner access, and that MCS is pervasive throughout the Salmon Creek watershed, only two sites at the mouth of the creek will be sampled. All samples will be sent to the OSPR Water Pollution Control Lab for analysis. Field water quality analysis including dissolved oxygen, temperature, PH, conductivity, and flow rate will be recorded and included in a final report.**

### **Monitoring Timeline**

#### **2013**

##### **June - July:**

- **Train staff in SWAMP protocols and water quality sampling techniques.**
- **Conduct watershed analysis; develop water quality monitoring priority list utilizing GIS and Google Earth imagery. Watersheds with extensive marijuana cultivation sites and State and federally listed salmonid species will be given highest priority for monitoring efforts.**
- **CDFW Habitat Conservation, Fisheries, OSPR, and LED staff meet to develop action plan for 2013 water quality monitoring and enforcement actions.**

##### **July - December:**

- **Conduct intensive water quality sampling at CDFW designated high priority watersheds.**
- **Conduct intensive water quality sampling at enforcement sites.**
- **Conduct field level water quality and quantity sampling at numerous sites throughout Northern California.**

## **2014**

### **January – May:**

- **Conduct additional watershed analysis; refine water quality monitoring priority list utilizing GIS and Google Earth imagery. Identify additional watersheds with extensive marijuana cultivation sites and State and federally listed salmonid species, and assign priority action list for 2014 monitoring efforts.**

### **June:**

- **CDFW Habitat Conservation, Fisheries, and LED staff meet to develop action plan for 2014 water quality monitoring and enforcement actions.**

### **June – December:**

- **Conduct intensive water quality sampling at enforcement sites, if two sites not yet completed. If these efforts were completed in 2013, then field level water quality and quantity sampling will be undertaken.**
- **Conduct intensive water quality sampling at high priority watersheds if not completed in 2013.**
- **Conduct field level water quality and quantity sampling at numerous sites throughout Northern California.**

## **2015**

### **January – June:**

- **Draft and publish paper based on water quality monitoring efforts from 2013-2014.**

### **June:**

- **Draft final report to Grantor for review.**

### **Research Needs**

Scientific Aides, in coordination with Environmental Scientists, will continue conducting important research on the effects of marijuana cultivation on sensitive aquatic species. Research includes mapping MCS in watersheds throughout Northern California, developing a priority watershed list to assist with current and future water quality monitoring efforts and enforcement actions, and database construction and management. In addition, Scientific Aides will assist LED with MCS access issues and preliminary natural resource impact analysis.

### **Reporting**

All OSPR analyzed water quality data collected, not associated with a pending enforcement action, will be made available upon request to Grantor. Water quality data connected to a CDFW enforcement action will be available upon completion of case. A final report, including all water quality data, analysis of potential effects on aquatic species, photos, site location maps, and final expenditures will be provided to Grantor by June 30, 2015.

**Budget**

The budget reflects CCDFW's best estimation of current personnel and operational costs to implement this monitoring effort. Some level of flexibility may be necessary in order to efficiently meet the programs goals and objectives.

**CDFW Proposal Budget**

<b>Line Item Description</b>	<b>Funding Request</b>	<b>Matching Funds</b>	<b>Project Totals</b>
<b><u>Salaries and Wages</u></b>			
Scientific Aides: 2 @ \$2,746/9 months*	\$ 49,428.00		\$ 49,428.00
Staff Env. Scientist: 1 @ \$47/hr., 40 hr./month x 24 mo.*		\$ 45,120.00	\$ 45,120.00
<b><u>Equipment</u></b>			
Waders/Boots: 4 pair @ \$140.00/pair	\$ 560.00		\$ 560.00
Turbidity Meter	\$ 1,009.00		\$ 1,009.00
YSI Polargraphic Sensor	\$ 200.00		\$ 200.00
YSI DO cap membrane kit	\$ 70.00		\$ 70.00
Misc. Field and Lab Items: calibration solution, sampling bottles, office supplies, etc.	\$ 973.00		\$ 973.00
<b><u>Sampling Events</u></b>			
See supplemental budget Information, reverse side	\$ 24,086.00		\$ 24,086.00
<b>Total Costs:</b>	<b>\$ 76,326.00</b>	<b>\$ 45,120.00</b>	<b>\$ 121,446.00</b>

\* Personnel costs reflect benefits rates of 34% for scientific aides, and 27% for Staff Env. Scientist.

Analysis or Service to be Performed	Description	Agency	Unit Cost (per sample)	# of samples	Total Cost
					(Total Units x cost/unit)
Trace Organic Chemistry	Organophosphate Pesticides (OP, Short List, EPA 814-114) - water	DFG-WPQL	\$350	8	\$2,800
	Pyrethroids (PYD, EPA 8081BM) - water	DFG-WPQL	\$350	8	\$2,800
	Triazine herbicides (TRIAZ, EPA 619M) - water	DFG-WPQL	\$350	8	\$2,800
	Carbamates (CARB, EPA 632M) - water	DFG-WPQL	\$421	8	\$3,368
	Diesel Range Organics (DRO, 8015M GCMS) - water	DFG-WPQL	\$281	2	\$562
	Toxins (Microcystins, anatoxin A, domoic acid, okadaic acid, nodularian) - Harmful Algal Blooms (by LC-MS/MS) - water	DFG-WPQL	\$425	4	\$1,700
	Ammonia as N (NH3)	DFG-WPQL	\$37	Included	\$0
	Ash Free Dry Mass (AFDM)	DFG-WPQL	\$53	16	\$848
	Chloride (CL)	DFG-WPQL	\$39	Included	\$0
	Chlorophyll-a (CHL, syringe-filtered)	DFG-WPQL	\$61	16	\$1,296
Conventional Water Chemistry	Dissolved Organic Carbon (DOC)	DFG-WPQL	\$109	Included	\$0
	Hardness as CaCO3 (HARD, should do if doing metals in freshwater)	DFG-WPQL	\$37	Included	\$0
	Nitrate/Nitrite as N (NO3/NO2)	DFG-WPQL	\$43	Included	\$0
	Nitrogen, Total (direct measurement)	DFG-WPQL	\$56	Included	\$0
	OrthoPhosphate as P (dissolved;OPo4) - aka Soluble Reactive Phosphorous (SRP) - typical	DFG-WPQL	\$43	Included	\$0
	Phosphorous as P (total; TP-OS) - typical	DFG-WPQL	\$56	Included	\$0
	Silica as SiO2, dissolved	DFG-WPQL	\$56	Included	\$0
	Sulfate (SO4)	DFG-WPQL	\$39	Included	\$0
	Suspended Sediment Concentration (SSC)	DFG-WPQL	\$60	Included	\$0
	Total Dissolved Solids (TDS)	DFG-WPQL	\$43	Included	\$0
Sediment Physical Characteristics	Grain size (SS; full analysis = phi scale) - sediment	CSULB-ILIMES	\$100	16	\$1,600
	Algae - Diatom Taxonomy 300 count (sample sorting, taxonomy, QA, data report)	EcoAnalyst	\$404	8	\$3,232
Biological & Habitat Assessment	Algae - Soft (sample sorting of ephyptles, macroalgae, and microalgae; taxonomy, QA, data report)	CSUSM	\$385	8	\$3,080
	<b>TOTAL COST FOR ALL SERVICES/ANALYSES DESCRIBED ABOVE:</b>				<b>\$24,086</b>

Note: assumes up to 4 samples/site (such as upstream, at source, and 2 downstream) with 4 sites total; organic chemistry for a subset of 8 samples with the exception of diesel (2 samples) and toxins in only 4 samples.

**Attachment C – ACL Order R5-2013-0545**  
**Proposed Best Management Practices for Priest Reservoir Drawdown**

*Objective:* Implement Best Management Practices (BMPs) to minimize the impacts on aquatic biota and limit sediment transfer to Rattlesnake Creek during scheduled releases from Priest Reservoir.

These BMPs are designed to reduce the impact of controlled releases from Priest Reservoir into Rattlesnake Creek as well as limit the sediment deliveries from Priest Reservoir to the Creek. The BMPs will be implemented when the water in the reservoir is scheduled to be released. During non-scheduled or emergency operations, which include protection of domestic water supply and reservoir management during storm events, BMPs 1 through 3 will be met as practically possible.

In order to track releases from the reservoir, the SFPUC will submit an annual report to the Central Valley Water Board. The report will cover the period of July 1<sup>st</sup> to June 30<sup>th</sup>, and will be submitted by August 1<sup>st</sup> each year. The report will describe implementation of the BMPs listed below, summarize each maintenance event including release rates, biological survey results, and contain a forecast of the projected operations for the upcoming year. The advance notification requirement in paragraph 1 below, the annual report to the Central Valley Water Board, the implementation of BMPs, and other requirements of this Attachment C shall continue through the SFPUC's fiscal year ending June 30, 2017.

Best Management Practices

1. **Timing of Scheduled Releases:** Scheduled drawdowns of Priest Reservoir will normally occur within the time period of November 1 to March 31. This period coincides with the wet weather season and with the associated elevated stream flow in the watershed. When scheduled releases to lower the reservoir are planned, the Discharger will provide advance notice of scheduled releases and associated operations to the Central Valley Water Board and Department of Fish and Wildlife in a timely manner prior to implementation in order to allow for early consultation with the agencies. Emergency inspections, maintenance activities, and additional reservoir management operations may be initiated outside of this period if necessary.
2. **Providing Aquatic Refuge:** During maintenance activities, the reservoir will only be lowered to an elevation which is required to provide safe access to infrastructure. To the extent feasible a minimum pool will be maintained to provide refuge for fish and aquatic life.
3. **Release Ramping Rates:** Release ramping rates will be applied when stream flows are at seasonally ambient conditions. When releases are increasing in the range of 0 to 20 cfs, increases in flow will not exceed 10 cfs over any two hour time period. After 20 cfs is reached, rates will be no more than doubled over any four hour time period. Controlled reductions in releases, when the release rate is greater than 20 cfs, will be reduced by no more than 50% in any four hour time period. Once releases are reduced to 20 cfs, further lowering of flow rates will be no more than 10 cfs over any two hour time period. Below is an example of the ramping schedule:

Hour	Increasing Flows (cfs)	Hour	Decreasing Flows (cfs)
0	0	0	80
2	10	2	40
4	20	4	20
8	40	8	10
12	80	12	0

4. **Sediment Transfer Mitigation:** If it is necessary to lower the reservoir below 2135 ft (HHWP datum), then water conditions will be visually monitored to ensure minimal sediment is transferred from the reservoir downstream. If a visible plume is observed, release rates will be reduced to minimize the release of sediment.
  
5. **Biotic Surveys:**
  - a. A one-time presence/absence survey will be conducted on streams downstream of the release point, during breeding/basking seasons, to evaluate the potential for special status species to occur. This survey will be completed no later than 31 December 2013, unless a later date is necessary by agreement of the Parties.
  - b. Pre-release surveys will be conducted prior to reservoir drawdowns to evaluate the potential for negative environmental impacts. This monitoring program will provide an overall understanding of biological activity in the creek and provide an evaluation of the above BMPs.
  - c. Releases from the reservoir enter a concrete channel before entering Rattlesnake Creek. This channel provides temporary downstream refuge for entrained fish. The channel will be monitored by the Discharger's biologists after flow releases have been completed to determine if there are stranded fish.