CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

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ORDER NO. R6T-2022-0004
NPDES NO. CA6202201
WDID NO. 6A091701001

WASTE DISCHARGE REQUIREMENTS AND NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR TAHOE KEYS PROPERTY OWNERS ASSOCIATION TAHOE KEYS LAGOONS AQUATIC WEED CONTROL METHODS TEST

The following Discharger is subject to waste discharge requirements (WDRs) set forth in this Order:

Table 1. Discharger Information

Discharger	Tahoe Keys Property Owners Association
Name of Project	Tahoe Keys Lagoons Aquatic Weed Control Methods Test
Facility Address	356 Ala Wai Boulevard South Lake Tahoe, CA 96150 El Dorado County

Table 2. Discharge Location

Discharge Point	Discharge Description	Receiving Water
Tahoe Keys Main Lagoon	Aquatic Herbicide Residues, Rhodamine WT and Lanthanum-Modified Clay	Lake Tahoe
Lake Tallac	Aquatic Herbicide Residues, Rhodamine WT and Lanthanum-Modified Clay	Lake Tallac, Pope Marsh, Lake Tahoe

Table 3. Administrative Information

This Order was adopted on:	**January 13, 2022**
This Order shall become effective on:	**March 1, 2022**
This Order shall expire on:	**January 12, 2027**
The Discharger must file a Report of Waste Discharge (ROWD) as an application for reissuance of a WDR in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	**180 days prior to the Order expiration date**
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, Lahontan Region have classified this discharge as follows:	**Minor discharge**

I, Michael R. Plaziak, Executive Officer; do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on the date indicated above.

MICHAEL R. PLAZIAK, PG
EXECUTIVE OFFICER

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I. DISCHARGE INFORMATION

This Order regulates the discharge of aquatic herbicide residues, Rhodamine WT (dye tracer), and lanthanum-modified clay (phosphorus control). Additional information describing these discharges that are associated with the Tahoe Keys Lagoons Aquatic Weed Control Methodology Test (Project) is summarized in Table 2, above, and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the Discharger's permit application.

II. FINDINGS

A. Legal Authorities

This Order serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the California Water Code (Water Code) (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit authorizing the Discharger to discharge into waters of the United States at the discharge locations described in Table 2 subject to the WDRs in this Order.

B. Background and Rationale for Requirements

The California Regional Water Quality Control Board, Lahontan Region (Lahontan Water Board) developed the requirements in this Order based on information submitted as part of the application, monitoring, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through G are also incorporated into this Order.

C. Human Right to Safe, Clean, Affordable, and Accessible Water

Water Code section 106.3 establishes a state policy that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes and directs state agencies to consider this policy when adopting regulations pertinent to those uses of water. This Order promotes that policy by requiring best management practices and other control measures be implemented, monitoring to assess water quality, and corrective action, when needed, to address adverse impacts to water quality.

D. California Environmental Quality Act

This action to adopt an NPDES permit is statutorily exempt from the provisions of the California Environmental Quality Act (CEQA, Public Resources Code sections 21000, et seq.), pursuant to section 13389of the Water Code.

Pursuant to the requirements specified in the Water Quality Control Plan for the Lahontan Region (Basin Plan) for consideration of an exemption to the prohibition on the discharge of pesticides to surface or groundwaters in the

Lahontan Region, the Discharger has conducted a CEQA analysis (*Final Environmental Impact Report/Final Environmental Impact Statement for the Tahoe Keys Lagoons Aquatic Weed Control Methods Test*, January 13, 2022).

E. **Notification of Interested Parties**

The Lahontan Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

F. **Consideration of Public Comment**

The Lahontan Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the public meeting are provided in the Fact Sheet.

THEREFORE, IT IS HEREBY ORDERED that in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger must comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. In accordance with the Region-wide and Unit/Area-specific Prohibitions in section 4.1 of the Water Quality Control Plan for the Lahontan Region (Basin Plan), unless a specific exemption is granted in writing by the Lahontan Water Board, aquatic pesticides are prohibited from the waters of the Lahontan Region. On January 13, 2022, the Lahontan Water Board adopted Resolution No. R6T-2022-0003 granting an exemption for the discharge of two residual aquatic herbicides to waters of the Tahoe Keys Main Lagoon and Lake Tallac.

B. The discharge of residual aquatic herbicides, Rhodamine Water Tracer (Rhodamine WT) and lanthanum-modified clay, in a manner different from that described in this Order is prohibited.

C. The discharge of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay must not create a nuisance as defined in section 13050 of the Water Code.

D. The discharge of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay must not cause, have a reasonable potential to cause, or contribute to a receiving water*[1] excursion above any applicable standard or criterion promulgated by U.S. EPA pursuant to section 303 of the CWA, or any narrative or numeric water quality objective contained in the Basin Plan.

[1] The first occurrence of each term defined in Attachment A is designated with an asterisk (*).

E. The discharge of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay to treatment areas* not approved by the Lahontan Water Board Executive Officer (Executive Officer) prior to discharge is prohibited.

F. The discharge of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay to each approved treatment area for more than one treatment event*, and to an area greater than 14 acres of water surface area in the Tahoe Keys Main Lagoon and 2.9 acres of water surface area in Lake Tallac is prohibited.

G. The discharge of residual aquatic herbicides and Rhodamine WT to the Tahoe Keys Main Lagoon when the waters in the Main Lagoon are flowing to Lake Tahoe is prohibited.

H. The discharge of endothall products with the endothall N,N-dimethylalkylamine salt formulation of the endothall active ingredients is prohibited.

I. The discharge of triclopyr products with the triclopyr butoxyethyl ester (BEE) formulation of the triclopyr active ingredients is prohibited.

J. The discharge of adjuvants* or surfactants is prohibited.

K. The discharge of Rhodamine WT not associated with an aquatic herbicide application* event is prohibited.

L. The discharge of lanthanum-modified clay not associated with an aquatic herbicide, UV light or laminar flow aeration treatment event is prohibited.

M. Where any numeric or narrative water quality objective contained in the Basin Plan is already being violated, the discharge of waste that causes further degradation or pollution is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. The discharge of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay must meet applicable water quality standards for receiving waters; and

2. The Discharger must implement Best Management Practices (BMPs) when applying aquatic herbicides, Rhodamine WT and lanthanum-modified clay. The minimum BMPs for the use of aquatic herbicides and Rhodamine WT are described in Section VI.C and minimum BMPs for the use of lanthanum-modified clay use are described in Section VII.B below.

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

Receiving water limitations are a required part of this Order and are based on water quality objectives contained in the Basin Plan. Pesticide discharge prohibition exemption criteria specified at page 4.1-4 of the Basin Plan require that monitoring for pesticide application projects must commence no more than one week after the application event* and that the time frame a project is required to achieve compliance with water quality objectives in treatment areas is established and specified by the Lahontan Water Board. The discharger must demonstrate compliance with receiving water limitations at all times outside of the treatment areas. Within the treatment area, the discharger must demonstrate compliance with receiving water limitations within 21 days after the application event.

A. Receiving Water Limitations - Surface Waters

The discharge must not cause any of the following:

1. An exceedance of the following limitations in the receiving waters:

Table 4. Receiving Water Limitations

Parameter	Units	Instantaneous Maximum Limit	Basis
Endothall*	µg/L	100	Drinking Water MCL
Triclopyr*	µg/L	400	USEPA Drinking Water Dietary Exposure Limit
Rhodamine WT	µg/L	10	National Sanitation Foundation (NSF) Standard 60

* Measured as the concentration of the acid form of the active ingredient.

Unit Abbreviations: µg/l = micrograms per liter

2. **Water Quality Objectives Which Apply to Surface Waters:** The following narrative and numerical water quality objectives apply to all surface waters within the Lahontan Region and include Lake Tahoe-specific water quality objectives. These water quality objectives can be found at page 5.1-6 of the Basin Plan and in Part 3 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Bacteria Provisions and a Water Quality Standards Variance Policy (Statewide Bacteria Provisions). The discharge to receiving waters of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay must not cause a violation of water quality objectives for the surface waters of the South Tahoe Hydrologic Area and the Tahoe Lake Body Hydrologic Area:

a. **Biostimulatory Substances**. Waters must not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect the water for beneficial uses.

b. **Chemical Constituents.** Waters designated as municipal and domestic supply (MUN) must not contain concentrations of chemical constituents in excess of the maximum contaminant level (MCL) or secondary maximum contaminant level (SMCL) based upon drinking water standards specified in the following provisions of title 22 of the California Code of Regulations, which are incorporated by reference into this Order: Table 64431-A (MCLs for Inorganic Chemicals), Table 64444-A (MCLs for Organic Chemicals), Table 64449-A (SMCLs, Consumer Acceptance Contaminant Levels), and Table 64449-B (SMCLs, Consumer Acceptance Contaminant Level Ranges). This incorporation-by-reference is prospective and therefore includes future changes to the incorporated provisions, as changes take effect.

   Waters designated as agricultural supply (AGR) must not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses (i.e., agricultural purposes).

   Waters must not contain concentrations of chemical constituents in amounts that adversely affect the water for beneficial uses.

c. **Color.** Waters must be free of coloration that causes nuisance or adversely affects the water for beneficial uses.

d. **Dissolved Oxygen.** The minimum dissolved oxygen concentration must not be less than that specified in Table 5.1-8 of the Basin Plan for COLD . The minimum seven day mean dissolved oxygen concentration must be not less than 5 mg/L.

e. **Floating Materials.** Waters must not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses.

   For Lake Tahoe, the concentrations of floating material must not be altered to the extent that such alterations are discernible at the 10 percent significance level.

f. **Nondegradation of Aquatic Communities and Populations.** All wetlands must be free of substances attributable to wastewater or other discharges that produce adverse physiological responses in humans, animals, or plants; or that lead to the presence of undesirable or nuisance aquatic life.

   All wetlands must be free from activities that would substantially impair the biological community as it naturally occurs due to physical, chemical, and hydrologic processes.

g. **Oil and Grease.** For Lake Tahoe, the concentration of oils, greases, or other film or coat generating substances must not be altered.

h. **pH.** For Lake Tahoe, the pH must not be depressed below 7.0 nor raised above 8.4.

i. **Sediment.** The suspended sediment load and suspended sediment discharge rate of surface waters must not be altered in such a manner as to cause nuisance or adversely affect the water for beneficial uses.

j. **Temperature.** The natural receiving water temperature of all waters must not be altered unless it can be demonstrated to the satisfaction of the Lahontan Water Board that such an alteration in temperature does not adversely affect the water for beneficial uses. For Lake Tahoe, the temperature must not be altered.

k. **Toxicity.** All waters must be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms; analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration and/or other appropriate methods as specified by the Lahontan Water Board.

   The survival of aquatic life in surface waters subjected to a waste discharge, or other controllable water quality factors, must not be less than that for the same water body in areas unaffected by the waste discharge, or when necessary, for other control water that is consistent with the requirements for "experimental water" as defined in Standard Methods for the Examination of Water and Wastewater (American Public Health Association, et al. 2012 or subsequent editions).

l. **Turbidity.** Waters must be free of changes in turbidity that cause nuisance or adversely affect the water for beneficial uses. Increases in turbidity must not exceed natural levels by more than 10 percent.

m. **Algal Growth Potential.** For Lake Tahoe, the mean algal growth potential at any point in the Lake must not be greater than twice the mean annual algal growth potential at the limnetic reference station. The limnetic reference station is located in the north central portion of Lake Tahoe. It is shown on maps in annual reports of the Lake Tahoe Interagency Monitoring Program. Exact coordinates can be obtained from the U.C. Davis Tahoe Research Group.

n. **Suspended Sediment.** Suspended sediment concentrations in streams tributary to Lake Tahoe must not exceed a 90th percentile value of 60 mg/L. (This objective is equivalent to the Tahoe Regional Planning Agency's regional "environmental threshold carrying capacity" standard for suspended sediment in tributaries.) The Regional Board will consider revision of this objective in the future if it proves not to be

protective of beneficial uses or if review of monitoring data indicates that other numbers would be more appropriate for some or all streams tributary to Lake Tahoe.

o. **Specific Numeric Receiving Water Limitations.** Surface receiving water limitations for Lake Tahoe and Lake Tallac in Table 5, below, are based on Table 5.1-3 (page 5.1-18) of the Basin Plan. The discharge to surface waters of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay must not cause or contribute to exceedances of the following receiving water limitations:

Table 5 Receiving Water Limitations for Lake Tahoe and Lake Tallac

Constituent	Limit (mg/L)	
	Annual Average	90th Percentile
Total Dissolved Solids (TDS)	60	65
Chloride	3.0	4.0
Sulfate	1.0	2.0
Boron	0.01	-
Total Nitrogen	0.15	-
Total Phosphorus	0.008	-

VI. AQUATIC PESTICIDE USE REQUIREMENTS

A. Application Schedule

The Discharger must provide a contact phone number or other specific contact information or online resource containing schedule information to all persons who request the Discharger's application schedule. The Discharger must provide the requester with the most current application schedule and inform the requester that the schedule is subject to change. Information may be made available by electronic means, including posting prominently on a well-known website.

B. Public Notice Requirements

The pesticide discharge prohibition exemption criteria specified in section 4.1 of the Basin Plan requires the Discharger to notify potentially affected parties who may use the potentially affected water for any beneficial use. The notification

must include any associated water use restrictions or precautions. In addition, the Discharger must also: 1) provide via certified mail, or equivalent, notice of the proposed pesticide applications to water purveyors whose source water relies on the surface water and/or on groundwater wells designated to be under the direct influence of the surface water; 2) provide to the Lahontan Water Board comments written from, and written responses to, the water purveyors notified pursuant to the notification; and 3) provide water purveyors and the Lahontan Water Board an estimate of the maximum foreseeable concentrations of pesticide components in the nearest surface water intake used for drinking water supplies located within the receiving waters.

At least 15 days prior to the first application of aquatic herbicides and Rhodamine WT, the Discharger must notify potentially affected individuals and water purveyors whose source of water is Lake Tahoe. The Discharger must post the notification on its website if available. The notification must include the following information:

1. A statement of the Discharger's intent to apply aquatic herbicide(s) and Rhodamine WT;
2. Brand names of aquatic herbicide(s) and Rhodamine WT products to be discharged;
3. Purpose of use;
4. General time period and locations of expected use;
5. Any water use restrictions or precautions during treatment; and
6. A phone number that interested persons may call to obtain additional information from the Discharger.

C. Aquatic Pesticide Application Plan (APAP)

The Discharger must submit two APAP[2] amendments and both amendments must be approved before an application event may occur. The first APAP amendment must address items VI.C.1-3, below, and must be submitted **within 45 days after** the adoption date of this Order to the Executive Officer for approval, and must be made available to the public for a 30-day period to allow for public comment.

The second APAP amendment must address items VI.C.4-6, below, must be submitted at least **30 days before** the expected day of first application of aquatic herbicides and Rhodamine WT to the Executive Officer for approval, and must be made available to the public for a 15-day period to allow for public comment.

1. The brand names of the aquatic herbicide products containing the endothall and triclopyr active ingredient formulations and Rhodamine WT

[2] APAP amendments must be submitted to supplement the April 30, 2021 APAP with information that incorporates the year of treatment aquatic plant surveys prior to discharge.

products to be used; the method which they will be applied, including the calculated volume of herbicide that will be applied for each designated treatment area; and supporting data utilized to calculate volumes for application.

2. Plans to prevent sample contamination from persons, equipment, and vehicles associated with aquatic herbicide and Rhodamine WT applications.
3. A BMP implementation plan. The BMP plan must include the following BMPs at the minimum:
    a. Plans to prevent aquatic herbicide spill and for spill containment in the event of a spill. Minimum spill control BMPs must include:
        i. Loading of aquatic herbicides and Rhodamine WT on to watercraft utilized for chemical applications (i.e., discharges) must be done with the vessel behind the installed double turbidity curtains.
        ii. Watercraft utilized for aquatic herbicide and Rhodamine WT applications must carry only enough aquatic herbicides and Rhodamine WT to apply to the treatment area(s) being treated at any given time.
        iii. Spill Response Plans. The APAP submitted on April 30, 2021 contained a Draft Spill Contingency Plan and the plan states "TKPOA will contract with and have on standby a hazardous material response team during the course of the above-described herbicides application…" The Discharger must provide a final Spill Response Plan addressing any potential spill of chemicals utilized for project implementation. The name and contact information for the hazardous material response team that will respond to spills during project implementation must be provided a minimum of **30 days prior to** any aquatic herbicide and Rhodamine WT applications.
    b. Plans to ensure that the rate of application is consistent with the APAP and not to exceed proposed application rates specified in the APAP. Minimum application BMPs must include:
        i. The application of the aquatic herbicides and Rhodamine WT must be conducted according to all product label requirements.
    c. The Discharger's plan for educating its staff and aquatic herbicide and Rhodamine WT applicators on how to avoid any potential adverse effects from the chemical applications. Minimum education BMPs must include:

i. The application of the aquatic herbicides and Rhodamine WT must be conducted by and under an authorized/licensed aquatic pesticide applicator.

ii. The aquatic pesticide applicator and associated staff must have safety training **within 30 days prior to** the target application addressing the aquatic herbicide and Rhodamine WT products and their associated hazards.

iii. The aquatic pesticide applicator must conduct a daily morning safety briefing prior to starting any aquatic herbicide and Rhodamine WT applications.

d. Plans to prevent aquatic herbicide migration to receiving waters adjacent to the main lagoon west channel entrance to Lake Tahoe and Pope Marsh downstream of Lake Tallac during treatment events. Minimum containment BMPs must include:

i. Boat traffic must be limited to only that necessary to implement the project during application and while turbidity curtains are in place.

ii. Prior to applying herbicides, double turbidity curtains (two turbidity curtains) must be installed in the locations identified on the Treatment Areas, Barrier Locations, and Main Lagoon Monitoring Locations map in Attachment C to prevent herbicide migration from the Tahoe Keys Lagoons to Lake Tahoe. If turbidity curtain locations are revised in response to revised treatment area locations reported per VI.C.4, above, the Discharger must reflect such revised barrier locations on the map submitted per VI.C.4. The double turbidity curtains must be maintained until all herbicide treatment sites have a minimum of two consecutive samples that are non-detect (i.e, below the reporting limit for the receiving water limitation parameters in Table 4 above.)

iii. Applications (i.e., discharge) of aquatic herbicides and Rhodamine WT products must be conducted when hydraulic gradients are such that the Main Lagoon is filling from Lake Tahoe.

e. Plans to respond to harmful algal bloom (HAB) outbreaks within treated areas following treatment events.

f. The decaying biomass of the invasive aquatic plants killed by the application may increase the biochemical oxygen demand in treatment areas and receiving waters. Measures and plans to ensure compliance with the Basin Plan DO water quality objective in treatment areas following the treatment event and receiving waters at

all times must be developed and implemented. Minimum DO control BMPs to be developed and implemented must include:

i. Plans to mitigate the oxygen demand from dead organic matter using aeration or other means. The plan must include all relevant design and implementation details including, as appropriate, the following:

- Manufacturers of the equipment (e.g., aerators) to be used,
- Associated equipment (e.g., piping, compressors)
- Map indicating locations of installed equipment;
- Estimated time to implement and install the DO control system.

g. Measures to take in the event of an exceedance of receiving water limitations caused by the discharge of residual aquatic herbicides. Such measures must include, but are not limited to, ceasing the discharge, notifying the Lahontan Water Board, and remedying the exceedance by implementing additional BMPs and control measures. The Discharger must take all reasonable steps to minimize or correct any non-compliance with this order resulting from aquatic herbicide and Rhodamine WT discharges, including such as accelerated or additional monitoring as may be necessary to determine the nature, extent, and effect of the receiving water limitation exceedance.

h. Measures to minimize sediment disturbance when installing and removing barrier curtains, installing and removing aeration diffusers and any other Project activities that disturb bed sediments in the Tahoe Keys Lagoons and Lake Tallac.

4. Final map showing treatment areas including their location and size in acres and, as applicable, any changes to barrier or monitoring locations. Provide the pre-project spring aquatic plant survey and hydro-acoustic scans results used to finalize the treatment locations.

5. A written summary of current and expected hydrologic conditions at the time of discharge (e.g, snowpack, local hydrology, hydraulic gradient in Lake Tahoe) demonstrating Prohibition III.H will be met at the time of discharge.

6. Proposed date(s) of treatment for each treatment area.

D. APAP Processing, Approval, and Modifications

Upon receipt of either of the two required amendments to the APAP, Lahontan Water Board staff will review the plan for completeness. If Lahontan Water Board staff determines the amendments to APAP are acceptable, staff will recommend the Executive Officer approve the amendments to the APAP. If an amendment to the APAP is determined to be incomplete, the Discharger must address Lahontan Water Board staff comments and resubmit the amendment

for Executive Officer approval. The amendments to the APAP addressing items VI.C.1-5, above, and the Lanthanum-Modified Clay Application Plan described in VII.B, below, must be approved by the Executive Officer prior to any aquatic herbicide and Rhodamine WT applications.

Any major changes to the APAP made after the amendments to the APAP are approved as described, above, must be submitted in writing to the Executive Officer for approval. Examples of major changes include, but are not limited to, changing an application method that may result in different amounts of pesticides being applied, changing final treatment area location or size or adding or removing BMPs. The total overall area to be treated may not be increased.

E. Aquatic Herbicide and Rhodamine WT Application Log

The Discharger must maintain a log for each aquatic herbicide and Rhodamine WT application event. The application log must contain, at a minimum, the following information:

1. Date and time of application;
2. Location of application;
3. Names of applicator and supporting staff present for the applications;
4. Type and amount of aquatic herbicide and Rhodamine WT applied to each treatment site;
5. The aquatic herbicide and Rhodamine WT application method;
6. Visual monitoring assessment; and
7. Certification that applicator(s) followed the APAP and implemented the minimum BMPs identified in VI.C.3, above.

VII. LANTHANUM-MODIFIED CLAY USE REQUIREMENTS

A. Lanthanum-Modified Clay Application Criteria

Lanthanum modified clay has been proposed by the Discharger to reduce available phosphorus levels to minimize/control harmful algal bloom (HAB) issues associated with the CMT. The following criteria must be met to use Lanthanum-modified clay:

1. Visual inspection of a treated area indicates a possible HAB;
2. Phosphorus concentrations in the water column for the treatment area are higher than that of the control site(s);
3. Cyanobacteria indicators are at caution levels or higher. Caution levels are Microcystins ≥ 0.8 µg/L, Anatoxin-a is detected and cylindrospermopsin ≥ 1.0 µg/L; and
4. Alkalinity of the water in the treatment area to be treated is greater than 20 mg/L.

The lanthanum-modified clay application concentration must not be greater than the recommended label application rates. Lanthanum-modified clay may be used to reduce the phosphorus concentration between the water quality objective of 0.008 mg/L and 0.005 mg/L. In no case shall the quantity of lanthanum-modified clay discharged be greater than the amount necessary to reduce the phosphorus in the waterbody to attain the target range of total phosphorus concentration.

B. Lanthanum-Modified Clay Application Plan (LMCAP)

The Discharger must submit a LMCAP **by April 1, 2022** for the application of lanthanum-modified clay if it is utilized as a HAB control consistent with the requirements of section VI.C.3.e, above, to the Executive Officer for approval, and must make the LMCAP available to the public for a 30-day period to allow for public comment. The LMCAP must contain, but not be limited to, the following elements sufficient to address each treatment area treated with lanthanum-modified clay:

1. The lanthanum-modified clay product name to be used, proposed lanthanum-modified clay application rate, and the method which it will be applied;
2. Description of the BMPs to be implemented. The BMPs must include, at the minimum:
    a. Plans to prevent lanthanum-modified clay spills and for spill containment in the event of a spill. Minimum spill control BMPs must include:
        i. Loading of lanthanum-modified clay on to watercraft utilized for chemical applications (i.e., discharges) must be done with the vessel behind the installed double turbidity curtains.
        ii. Watercraft utilized for lanthanum-modified clay applications must carry only enough lanthanum-modified clay to apply to the treatment area(s) being treated at any given time.
    b. Plans to ensure that the rate of application is consistent with product label requirements for the targeted phosphorus reduction.
    c. The Discharger's plan for educating its staff and lanthanum-modified clay applicators on how to avoid any potential adverse effects from the chemical applications. Minimum education BMPs must include:
        i. The application of the lanthanum-modified clay must be conducted by and under an authorized/licensed applicator.
        ii. The lanthanum-modified clay applicator and associated staff must have safety training for lanthanum-modified clay applications addressing the lanthanum-modified clay product and its associated hazards, provide record of training or experience

working with lanthanum-modified clay **<u>90 days prior to application</u>**.

iii. The lanthanum-modified clay applicator must conduct daily morning safety briefings prior to starting any lanthanum-modified clay applications.

d. Plans to prevent lanthanum-modified clay migration to receiving waters adjacent to the main lagoon west channel entrance to Lake Tahoe and Pope Marsh downstream of Lake Tallac during the treatment event. Minimum containment BMPs must include:

i. Boat traffic must be limited to only that necessary to implement the project during application and while turbidity curtains are in place.

ii. Prior to applying lanthanum-modified clay, turbidity curtains must be installed in the locations identified on the Treatment Areas, Barrier Locations, and Main Lagoon Monitoring Locations map in Attachment C to prevent lanthanum-modified clay and turbidity migration from the Tahoe Keys Lagoons to Lake Tahoe. If turbidity curtain locations are revised in response to revised treatment area locations reported per VI.C.4 above, the Discharger must reflect such revised barrier locations on the map submitted per VI.C.4.

e. Measures to take in the event of the application causing an exceedance of receiving water limitations in receiving waters. Such measures must include but are not limited to ceasing the discharge, notifying the Lahontan Water Board, and remedying the exceedance by implementing additional BMPs and control measures. The Discharger must take all reasonable steps to minimize or correct any adverse impact on the environment resulting from lanthanum-modified clay discharges, such as accelerated or additional monitoring as may be necessary to determine the nature, extent, and effect of the receiving water limitation exceedance.

C. LMCAP Processing, Approval, and Modifications

Upon receipt of the LMCAP, Lahontan Water Board staff will review the plan for completeness. If Lahontan Water Board staff determines the LMCAP is acceptable they will recommend to the Executive Officer approval of the LMCAP. If the LMCAP is determined to be incomplete, the Discharger must address the Lahontan Water Board staff comments and resubmit the LMCAP for Executive Officer approval. The LMCAP described in VII.B, above, must be approved by the Executive Officer prior to any lanthanum-modified clay applications. Any major changes to the LMCAP made after initial LMCAP approval must be submitted to the Executive Officer for approval. Examples of major changes include but are not limited to changing an application method

that may result in different amounts of lanthanum-modified clay being applied or adding or removing BMPs.

D. Lanthanum-Modified Clay Application Log

The Discharger must maintain a log for each lanthanum-modified clay application. This log must contain, at a minimum, the following information:

1. Date and time of application;
2. Location of application;
3. Name of applicator;
4. The quantity of lanthanum-modified clay used for each treatment.
5. Application method and concentration;
6. Visual monitoring assessment; and
7. Certification that applicator(s) implemented the LMCAP and implemented the minimum BMPs identified in VII.B.2, above.

VIII. PROVISIONS

A. Standard Provisions

1. The Discharger must comply with all Standard Provisions included in Attachment D.
2. The Discharger must comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply:
   a. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the Discharger from liabilities under federal, state, or local laws, nor guarantee the Discharger a capacity right in the receiving waters.
   b. All discharges authorized by this Order must be consistent with the terms and conditions of this Order.
   c. Pursuant to Water Code section 13263, subdivision (g), no discharge of waste into the waters of the state, whether or not the discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge. All discharges of waste into waters of the state are privileges, not rights.
   d. The Discharger must take all reasonable steps to minimize or prevent any discharge in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.
   e. A copy of the NPDES permit must be kept at the Facility and be available at all times to operating personnel.

f. Provisions of the permit are severable. If any provision of the requirements is found invalid, the remainder of the requirements shall not be affected.

g. In the event the Discharger is unable to comply with any of the conditions of this Order due to:

   i. breakdown or serious malfunction of equipment;

   ii. accidents caused by human error or negligence;

   iii. over application of chemicals; or

   iv. other causes such as acts of nature,

   the Discharger must notify the Lahontan Water Board Executive Officer as soon as the Discharger or the Discharger's agents have knowledge of any discharge in violation of this permit, or any emergency discharge or other discharge to the receiving water, in accordance with the notification requirements in the Standard Provisions for NPDES Permits, included in this Order as Attachment D.

h. If a Discharger becomes aware that any information submitted to the Lahontan Water Board is incorrect, the Discharger must immediately notify the Lahontan Water Board, in writing, and correct that information.

i. Once the Discharger has ceased all discharges from the application of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay covered under this Order, the Discharger must notify the Lahontan Water Board in writing and request that the permit be rescinded.

j. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.

k. In the event of any noncompliance with this Order, the Discharger must notify the Lahontan Water Board by telephone [(530) 542-5400] within 24 hours of having knowledge of such noncompliance, and must confirm this notification in writing within five (5) days, unless the Lahontan Water Board waives confirmation in writing. The written notification must state the nature, time, duration, and cause of noncompliance, and must describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Additional detail

regarding the information to be provided is provided in section V.G of the Monitoring and Reporting Program (Attachment E).

3. This Order does not authorize any take of endangered species. The discharge is prohibited from adversely impacting biologically sensitive or critical habitats, including, but not limited to, habitat of species listed under federal or state endangered species laws.
4. The Discharger must utilize pesticide products labelled and approved for aquatic use by the California Department of Pesticide Regulation and follow all pesticide label instructions for the endothall and triclopyr products selected for use.
5. The Discharger must comply with effluent and receiving water limitations and must develop and implement Best Management Practices (BMPs) for discharges of endothall, triclopyr, Rhodamine WT and lanthanum-modified clay.
6. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Lahontan Water Board.
7. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program must be properly maintained and calibrated based on manufacturer's recommendations to ensure their continued accuracy.

B. Monitoring and Reporting Program Requirements

The Discharger must comply with the Monitoring and Reporting Program (MRP) in Attachment E and future revisions thereto, as specified by the Executive Officer.

C. Special Provisions

1. **Reopener Provisions**

a. If more stringent applicable water quality standards are promulgated or approved pursuant to section 303 of the Federal Water Pollution Control Act or amendments thereto, the Lahontan Water Board may reopen and modify this Order in accordance with such more stringent standards.

b. The Lahontan Water Board may reopen this Order to establish new conditions, receiving water limitations, effluent limitations, or BMPs should monitoring data, toxicity testing data, or other new information indicate that a pollutant is discharged at a level that will cause, have reasonable potential to cause, or contribute to an in-stream excursion above any water quality standard.

c. This Order may be reopened for modification and reissuance in accordance with the provisions contained in title 40 Code Federal Regulation (40 C.F.R.) section 122.62, and for the following reason:

i. Endangered Species Act. If U.S. EPA develops biological opinions regarding the endothall, triclopyr and Rhodamine WT or lanthanum-modified clay included in this Order, this Order may be reopened to add or modify receiving water limitations for aquatic herbicides and their residues of concern, Rhodamine WT or lanthanum-modified clay and its residues, if necessary.

ii. Approval of ProcellaCOR. If the California Department of Pesticide Regulation approves the use of ProcellaCOR in California, this Order may be reopened to add or modify requirements associated with the application of ProcellaCOR.

2. **Special Studies, Technical Reports, and Additional Monitoring Requirements**

a. **Additional Investigation.** The Discharger must conduct additional investigations when the chemical monitoring shows exceedance of any receiving water limitation. The discharger must demonstrate compliance with receiving water limitation at all times outside of the treatment areas. The Discharger must demonstrate compliance with receiving water limitations in treatment areas within 21 days after the application event. The additional investigations must identify corrective actions to eliminate exceedance of receiving water limitations caused by the aquatic herbicide, Rhodamine WT or lanthanum-modified clay applications. The investigation must include, but not be limited to evaluating the need to implement additional control measures including revising and improving the existing BMPs, revising the mode and rate of application, or other control methods proposed by the Discharger.

b. **Qualified Biologist* Certification Following Project Completion.** Upon conclusion of all aquatic herbicide treatment events for the aquatic weed control methods test project, the Discharger must provide certification by a qualified biologist that beneficial uses of receiving waters have been restored to pre-project conditions. Annual biologic monitoring must be conducted until a qualified biologist certifies that beneficial uses of receiving waters have been restored to pre-project conditions.

3. **Corrective Action**

a. **Exceedance of Receiving Water Limitations.** If a receiving water limitation in Table 4 is exceeded in an application event or post-application event sample, the Discharger must perform the following actions: (1) initiate additional investigations for the cause of the exceedance, (2) implement appropriate BMPs to correct the residual aquatic herbicide, Rhodamine WT or lanthanum-modified clay-induced receiving water limitation exceedance(s) to achieve

compliance with the applicable receiving water limitation(s), and (3) evaluate the appropriateness of using reduced application rates in treatment areas not yet treated.

i. Dissolved Oxygen. The Discharger must implement an active aeration system, as proposed by the Discharger, when the following conditions occur:

- Dissolved oxygen (DO) concentration trends indicate concentrations may fall below 5 mg/L (a seven day mean) in a depth integrated composite sample from the treatment area(s), and
- The DO in any treatment area, post-discharge, is more than 10% lower, as a percent of DO saturation, than that of comparable control site(s).

b. **Revision of Control Measures.** If any of the following situations occur, the Discharger must review and, as necessary, revise existing BMPs or provide additional BMPs and other control measures to ensure that the situation is corrected:

i. An unauthorized release or discharge associated with the application of aquatic herbicides, Rhodamine WT or lanthanum-modified clay (e.g., spill, leak, or discharge not authorized by this Order) occurs;

ii. The Discharger becomes aware, or the Lahontan Water Board concludes, that the BMPs and other control measures are not adequate/sufficient for the discharge to meet applicable receiving water limitations;

iii. Any monitoring activities indicate that the Discharger failed to:

a) Follow the label instructions for the aquatic herbicide, Rhodamine WT or lanthanum-modified clay product used;

b) Use the minimum amount of aquatic herbicide, Rhodamine WT or lanthanum-modified clay product for each application event for an effective control methods test (i.e., target reduction of aquatic invasive weed coverage) consistent with minimizing impacts to receiving waters;

c) Perform regular maintenance activities to reduce leaks, spills, or other unintended discharges of aquatic herbicides, Rhodamine WT or lanthanum-modified clay during storage, transport and product application associated with the aquatic weed control methods test;

d) Maintain aquatic herbicide, Rhodamine WT or lanthanum-modified clay application equipment in proper operating condition by adhering to any manufacturer's conditions and

industry practices, and by calibrating, cleaning, and repairing such equipment on a regular basis to ensure effective implementation of aquatic herbicide, Rhodamine WT or lanthanum-modified clay applications as authorized by this Order.

c. **Corrective Action Deadlines.** If the Discharger or Lahontan Water Board determine that changes to the BMPs or other control measures are necessary to eliminate any situation identified, above, the Discharger must develop and implement such changes prior to commencing any additional applications to untreated control methods test treatment areas.

d. **Effect of Corrective Action.** The occurrence of a situation identified in section C.3.b, above, may constitute a violation of this Order. Correcting the situation according to Corrective Action section C.3.c, above, does not absolve the Discharger of liability for such violations. However, failure to comply with any Corrective Action as required by section C.3.c, above, constitutes an additional permit violation. The Lahontan Water Board will consider the appropriateness and promptness of corrective action in determining enforcement responses to violations of this Order.

The Lahontan Water Board may impose additional requirements and schedules of compliance, including requirements to submit additional information concerning the condition(s) triggering corrective action or schedules and requirements more stringent than specified in this Order. Those requirements and schedules will supersede those in the Corrective Action Section, above, if such requirements conflict.

4. **Adverse Incident to Threatened or Endangered Species or Critical Habitat**

If the Discharger becomes aware of an adverse incident to a federally-listed threatened or endangered species or its federally-designated critical habitat, that may have resulted from the Discharger's aquatic herbicide, Rhodamine WT or lanthanum-modified clay applications, the Discharger must immediately notify the U.S. Fish and Wildlife Service (FWS) at (916) 414-6600 and the Lahontan Water Board in the case of an incident with terrestrial or freshwater species. This notification must be made by telephone immediately when the Discharger becomes aware of the adverse incident and must include at least the following information:

a. The caller's name, telephone number, and e-mail address;

b. Applicator name and mailing address;

c. The name of the affected species;

d. How and when the Discharger became aware of the adverse incident;

e. Description of the location of the adverse incident;

f. Description of the adverse incident, including the U.S. EPA pesticide registration number, the Rhodamine WT product information and/or the lanthanum-modified clay product information for each product applied in the area of the adverse incident; and

g. Description of any steps that have been taken or will be taken to eliminate and/or mitigate the adverse impact to the species.

Additional information on federally-listed threatened or endangered terrestrial or freshwater species and federally-designated critical habitat is available from the FWS website (www.fws.gov).

5. **Operation and Maintenance Specifications**

a. Any solid waste products generated from aquatic herbicide, Rhodamine WT or lanthanum-modified clay application activities must be disposed of in a manner approved by the Lahontan Water Board and consistent with the Consolidated Regulations for Treatment, Storage, Processing, or Disposal of Solid Waste, as set forth in the California Code of Regulations, title 27, division 2, subdivision 1, section 20005, et seq.

b. All chemicals not discharged in accordance with the provisions of this Order must be disposed of in an environmentally safe manner, according to label guidelines, Material Safety Data Sheet guidelines and the Discharger's BMP plans (see sections VI.C, VII.A and VIII.A of this Order). Any other form of disposal requires approval from the Lahontan Water Board.

c. All facilities and equipment used for storage and transport of chemicals to treatment areas must be routinely inspected and adequately maintained to prevent leaks and spills.

IX. COMPLIANCE DETERMINATION

Compliance with the receiving water limitations prescribed in Section V of this Order will be determined by assessment of the results of the event and post-event monitoring conducted in accordance with Attachment E.

The discharger must demonstrate compliance with receiving water limitations at all times outside of the treatment areas. Within treatment areas, the discharger must demonstrate compliance with receiving water limitations within 21 days after the application event. This demonstration must use sample reporting protocols defined in Attachment E and Attachment A of this Order.

For purposes of reporting and enforcement by the Lahontan Water Board, the Discharger shall be determined to be out of compliance with receiving water limitations if residual aquatic herbicide, Rhodamine WT or lanthanum-modified clay discharges cause the pollutant concentrations, as reflected by monitoring sample

results, to exceed receiving water limitations established in this Order and greater than or equal to the reporting level (RL).

Attachment A – Definitions

Active Ingredient

Active ingredients are ingredients disclosed by manufacturers that yield toxic effects on target organisms.

Adjuvants

Adjuvants are ingredients that are mixed with herbicides prior to an application event and are often trade secrets. These ingredients are chosen by the Discharger, based on site characteristics, and typically increase the effectiveness of pesticides on target organisms.

Adverse Incident

Adverse Incident means a situation where the Discharger observes upon inspection or becomes aware of in which:

- A person or non-target organism may have been exposed to an aquatic herbicide residue, free lanthanum or Rhodamine WT; and
- The person or non-target organism suffered an adverse or toxic effect.

Adverse or Toxic Effect

An “adverse or toxic effect” includes any impact that occurs within waters of the United States on non-target organisms as a result of aquatic herbicide residue discharges or any organisms as a result of Rhodamine WT or lanthanum-modified clay discharges. Examples of these effects may include:

- Distressed or dead juvenile and small fishes
- Washed up or floating fish
- Fish swimming abnormally or erratically
- Fish lying lethargically at water surface or in shallow water
- Fish that are listless or nonresponsive to disturbance
- Stunting, wilting, or desiccation of non-target submerged or emergent aquatic plants
- Other dead or visibly distressed non-target aquatic organisms (amphibians, turtles, invertebrates, etc.)

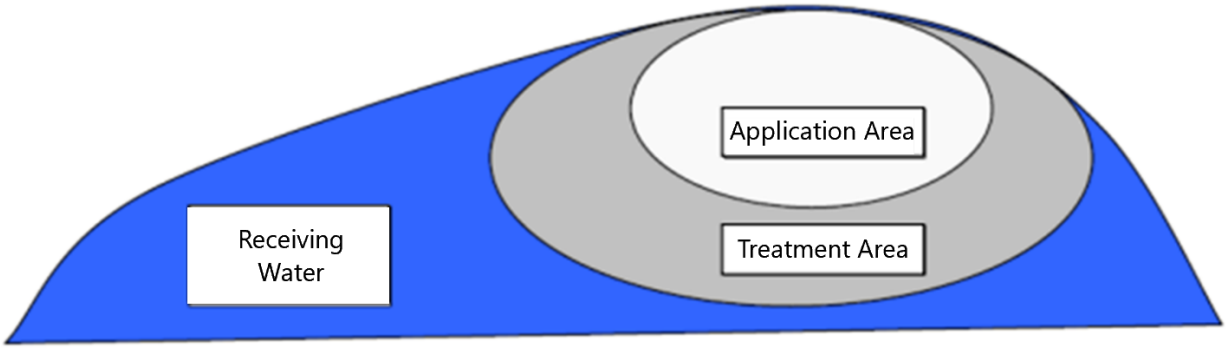
An “adverse or toxic effect” also includes any adverse effects to humans (e.g., skin rashes) or domesticated animals that occur either directly or indirectly from a discharge to waters of the United States that are temporally and spatially related to exposure to aquatic herbicide residues, Rhodamine WT or lanthanum-modified clay (e.g., vomiting, lethargy).

Algae Control

Algae control means the treatment of filamentous algae, cyanobacteria (blue-green algae), or algal species that have the potential to affect human or environmental health.

Application Area

The application area is the area to which aquatic pesticides are directly applied.



Application Event

The application event is the time that introduction of the aquatic herbicide to the treatment area takes place, not the length of time that the environment is exposed to the aquatic herbicide.

Aquatic Pesticides

Aquatic pesticides in this Order are limited to aquatic herbicides labeled for aquatic use to control aquatic weeds.

Beneficial Uses

Beneficial uses of the waters of the state that may be protected against quality degradation. For receiving waters specified in this Order, applicable beneficial uses are Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Ground Water Recharge (GWR); Freshwater Replenishment (FRSH); Water-Contact Recreation (REC-1); Non-Water-Contact Recreation (REC-2); Navigation (NAV); Commercial and Sport Fishing (COMM); Cold Freshwater habitat (COLD); Wildlife Habitat (WILD); Preservation of Biological Habitats of Special Significance (BIOL); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction and Development of Fish and Wildlife (SPWN); Preservation of Rare and Endangered Species (RARE), Water Quality Enhancement (WQE); and Flood Peak Attenuation/Flood Water Storage (FLD).

Best Management Practices (BMPs)

Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, and solids or waste disposal.

Detected, but Not Quantified (DNQ)

DNQ are those sample results less than the reporting limit (RL), but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Half-Life

Half-life is the time required for half of the compound introduced into an ecosystem to be eliminated or disintegrated by natural processes.

Inert Ingredients

Inert ingredients in aquatic herbicide, Rhodamine WT and lanthanum-modified clay product formulations are additional ingredients and are often trade secrets; therefore, they are not always disclosed by the manufacturer.

Instantaneous Maximum Limit

The maximum allowable concentration of a pollutant determined from the analysis of any discrete or composite sample collected, independent of the flow rate and the duration of the sampling event.

Method Detection Limit (MDL)

MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)

ML is the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Not Detected (ND)

Sample results which are less than the laboratory's MDL.

Qualified Biologist

A qualified biologist is a biologist who has the knowledge and experience in the ecosystem where the aquatic herbicide is applied so that he or she can adequately evaluate whether the beneficial uses of the receiving waters have been protected and/or restored upon completion of the project.

Receiving Waters

Receiving waters are waters of the United States anywhere outside of the treatment area at anytime and anywhere inside the treatment area 21 days after application.

Reporting Level (RL)

The RL is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Lahontan Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Representative Monitoring Location

To be considered “representative,” at a minimum, a location must be similar in hydrology, aquatic herbicide use, and other factors that affect the residual discharge to the areas being represented in that environmental setting.

Residual Aquatic Herbicide

Residual aquatic herbicide are those portions of the pesticides that remain in the water after the application and its intended purpose (injury or elimination of targeted plant species) have been completed.

Self-Monitoring

Sampling and analysis performed by the Discharger to determine compliance with the Permit. All laboratory analyses must be conducted by a laboratory certified by the water Boards.

Source of Drinking Water

Any water designated as municipal or domestic supply (MUN) in the Water Quality Control Plan for the Lahontan Region (Basin Plan).

Treatment Area

The treatment area is the area being treated by the aquatic herbicide for aquatic weed control and, therefore, the area being targeted to receive an appropriate rate of application consistent with product label requirements of aquatic herbicide. It is the responsibility of the Discharger to define the final project treatment areas in the year of treatment for each specific aquatic herbicide application and obtain approval from the Executive Officer for each treatment area prior to application.

Treatment Duration

The treatment duration is the elapsed time from the application event to when the aquatic herbicides have completed their intended purpose (injury or elimination of

targeted plant species) and typically corresponds to the duration aquatic herbicides are at lethal concentrations to the target aquatic plant species in the treatment area.

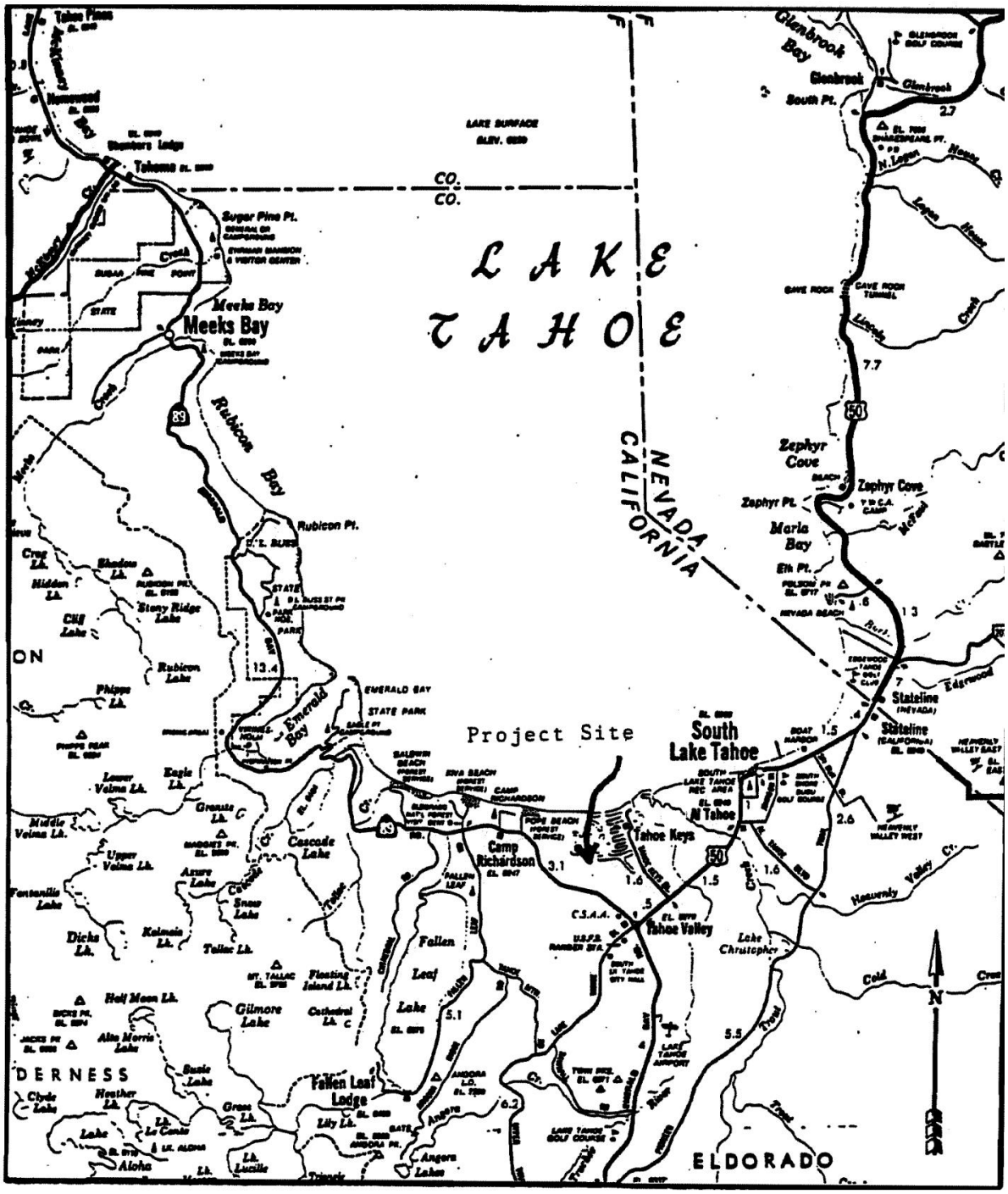
Treatment Event

The treatment event represents treatment activities conducted from introduction of the aquatic herbicide to the treatment area (application event) to full treatment (injury or elimination) of the target plant species in the treatment area at the end of the treatment duration.

Attachment B

A. Location and Facility Maps

Location Map



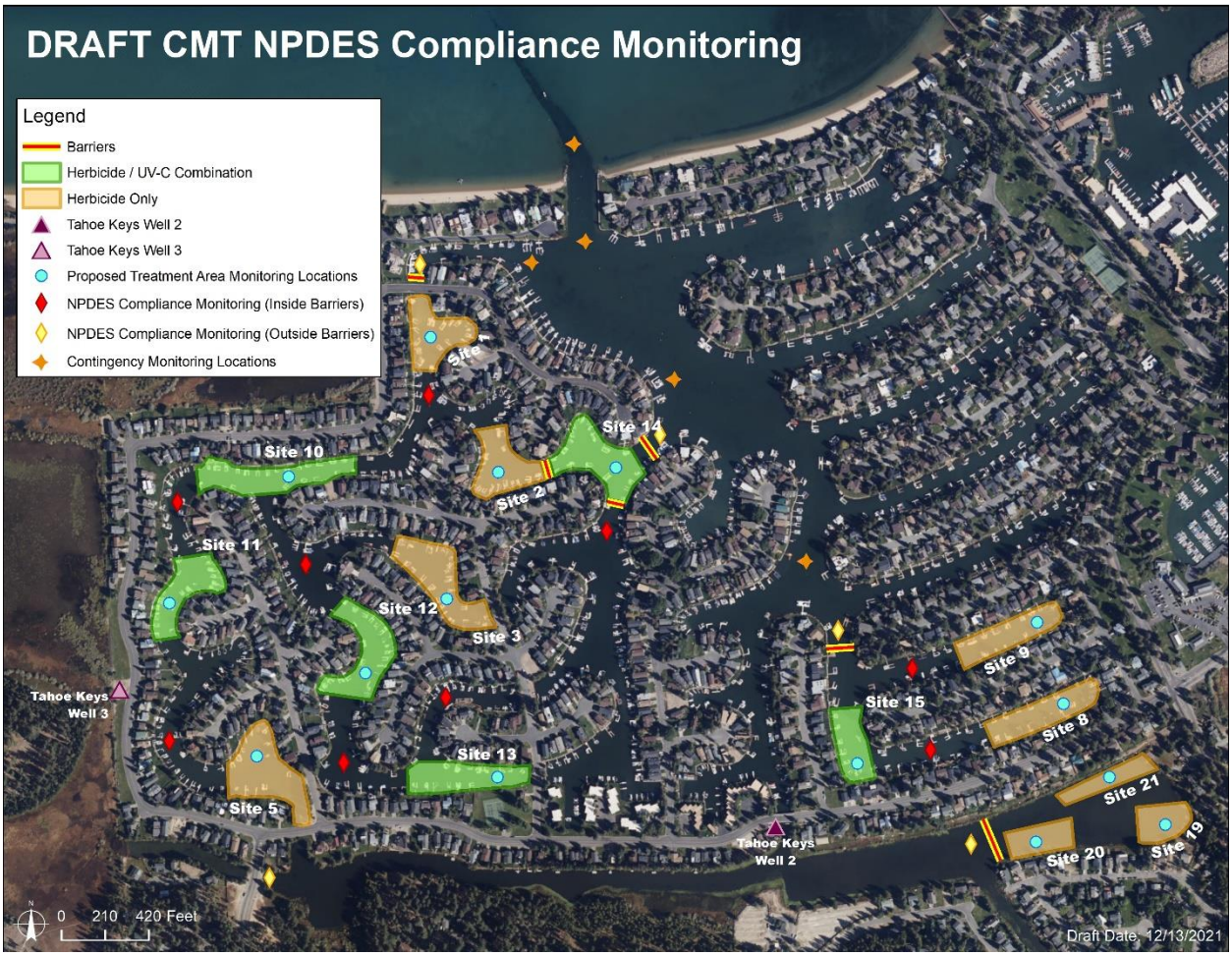
Facility Map

Note:
The Main Lagoon includes all waters inside the West Channel entrance when entering from Lake Tahoe. The Marina Lagoon includes all waters inside the East Channel entrance when entering from Lake Tahoe.

Attachment C

Treatment Area and Monitoring Location Maps

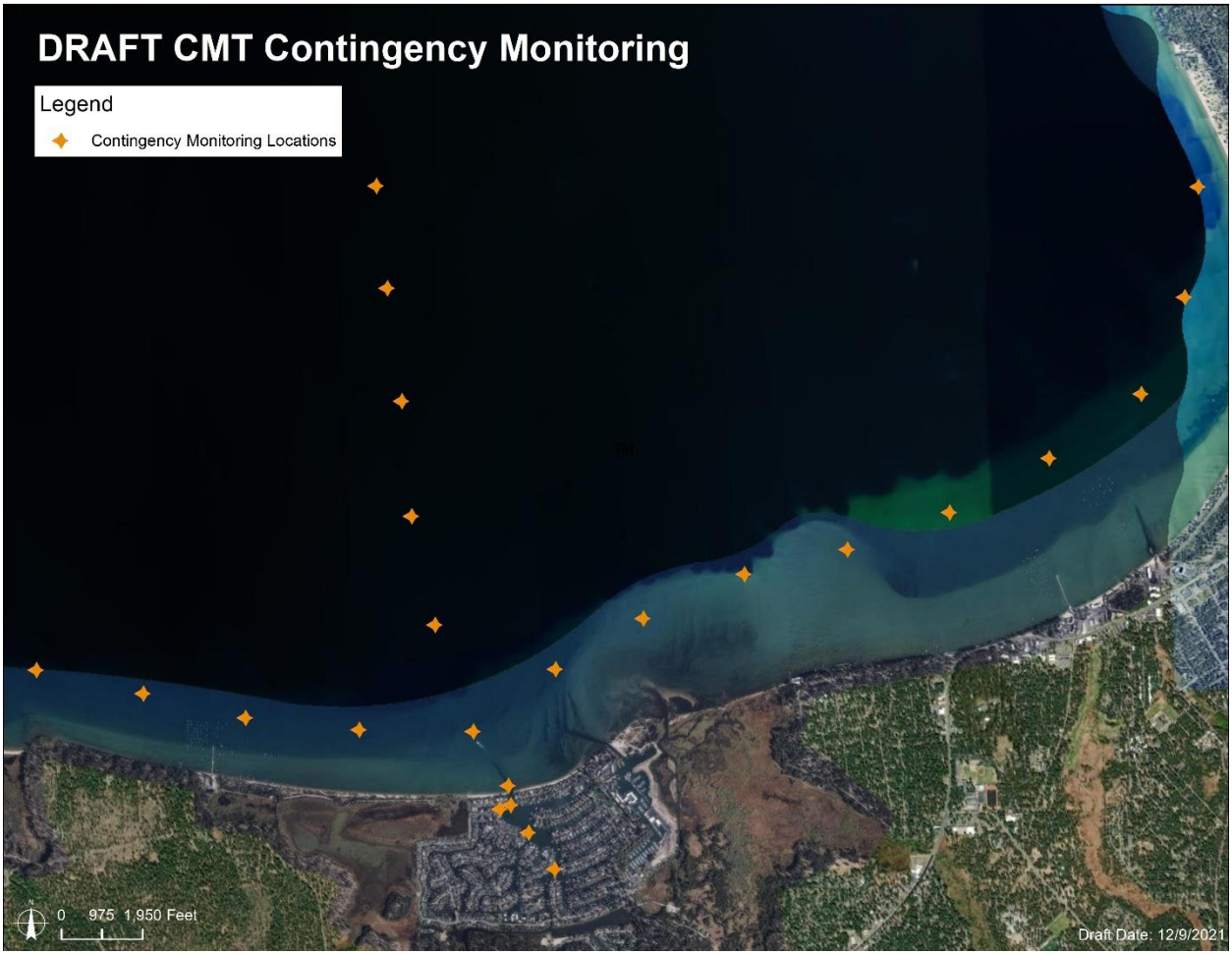
Treatment Areas, Barrier Locations, and Main Lagoon Monitoring Locations



Note:

Final treatment areas and receiving water monitoring locations inside the Main Lagoon may change based on year of treatment aquatic plant survey results.

Contingency Monitoring Locations



Attachment D – Standard Provisions

I. STANDARD PROVISIONS – PERMIT COMPLIANCE (IF APPLICABLE)

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the CWA and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application; or a combination thereof. (40 C.F.R. §122.41(a); Wat. Code, §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)
2. The Discharger must comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. §122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. §122.41(c).)

C. Duty to Mitigate

The Discharger must take all reasonable steps to minimize or prevent any discharge in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. §122.41(d).)

D. Proper Operation and Maintenance

The Discharger must at all times properly operate and maintain all facilities and systems of control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. (40 C.F.R. §122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. §122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. §122.5(c).)

F. Inspection and Entry

The Discharger must allow the Lahontan Water Board, State Water Board, United States Environmental Protection Agency (U.S. EPA), and/or their authorized representatives (including an authorized contractor acting as their

representative), upon the presentation of credentials and other documents, as may be required by law, (40 C.F.R. §122.41(i); Water Code, §13383) to:

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order;
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
4. Sample or monitor, at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location.

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. §122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain authorization as required by the new permit. (40 C.F.R. §122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Lahontan Water Board. The Lahontan Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. §122.41(l)(3); §122.61.)

D. Continuation of this Permit

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with 40 C.F.R. section 122.6 and remain in full force and effect.

III. STANDARD PROVISIONS – MONITORING

Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity. (40 C.F.R. §122.41(j)(1).)

Monitoring results must be conducted according to test procedures under 40 C.F.R. part 136 unless other test procedures have been specified in this Order. (40 C.F.R. §122.41(j)(4); §122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

A. Records Retention

The Discharger must retain records of all monitoring information, including all calibration and maintenance records, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Lahontan Water Board's Executive Officer at any time. (40 C.F.R. §122.41(j)(2).)

B. Records of monitoring information must include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. §122.41(j)(3)(i).);
2. The individual(s) who performed the sampling or measurements (40 C.F.R. §122.41(j)(3)(ii).);
3. The date(s) analyses were performed (40 C.F.R. §122.41(j)(3)(iii).);
4. The individual(s) who performed the analyses (40 C.F.R. §122.41(j)(3)(iv).);
5. The analytical techniques or methods used (40 C.F.R. §122.41(j)(3)(v).); and
6. The results of such analyses. (40 C.F.R. §122.41(j)(3)(vi).)

C. Claims of confidentiality for the following information will be denied (40 C.F.R. §122.7(b).):

1. The name and address of any permit applicant or Discharger (40 C.F.R. §122.7(b)(1).); and
2. Permit applications and attachments, permits and effluent data. (40 C.F.R. §122.7(b)(2).)

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger must furnish to the Lahontan Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Lahontan Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger must also furnish to the Lahontan Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. §122.41(h); Wat. Code, §§13267 and 13383)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Lahontan Water Board, State Water Board, and/or U.S. EPA must be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, V.B.5, V.B.6, V.B.7 and V.B.8 below. (40 C.F.R. §122.41(k).)
2. For a corporation. By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
3. For a partnership or sole proprietorship. By a general partner or the proprietor, respectively;
4. For a municipality, state, federal, or other public agency: All permit applications must be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. §122.22(a)(3).)
5. All reports required by this Order and other information requested by the Lahontan Water Board, State Water Board, or U.S. EPA must be signed by a person described in Standard Provisions – Reporting V.B.1 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
    a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.1 above (40 C.F.R. §122.22(b)(1).);
    b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity or an individual or a position having overall responsibility for environmental matters for the company. (A duly authorized

representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. §122.22(b)(2).); and

c. The written authorization is submitted to the Lahontan Water Board and State Water Board. (40 C.F.R. §122.22(b)(3).)

6. If an authorization under Standard Provisions – Reporting V.B.1 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.1 above must be submitted to the Lahontan Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. §122.22(c).)

7. Any person signing a document under Standard Provisions – Reporting V.B.5 above must make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 C.F.R. §122.22(d).)

8. Any person providing the electronic signature for documents described in Standard Provisions – Reporting section V.B.1 that are submitted electronically must meet all relevant requirements of Standard Provisions – Reporting section V.B, and must ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. [40 C.F.R. § 122.22(e)]

C. Monitoring Reports

1. Monitoring results must be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. §122.22(l)(4).)

2. Monitoring results must be reported on a Self-Monitoring Report (SMR) form as agreed to by the Executive Officer and the Discharger.

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R part 136 or as specified in this Order, the results of this monitoring must be included in the calculation and reporting of the data submitted in the SMR or a reporting form specified by the Lahontan Water Board. (40 C.F.R. §122.41(l)(4)(ii).)

4. Calculations for all limitations, which require averaging of measurements, must utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. §122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, must be submitted no later than 14 days following each schedule date. (40 C.F.R. §122.41(l)(5).)

E. Planned Changes

The Discharger must give notice to the Lahontan Water Board as soon as possible of any planned physical alterations or additions to the permitted activity or discharge. Notice is required under this provision (40 C.F.R. §122.41(l)(1)) only when the alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under 40 C.F.R. section 122.42(a)(1).

F. Anticipated Noncompliance

The Discharger must give advance notice to the Lahontan Water Board of any planned changes in the permitted discharge or activity that may result in noncompliance with Order requirements. (40 C.F.R. §122.41(l)(2).)

G. Other Noncompliance

The Discharger must report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports must contain the information listed in Standard Provision – Reporting V.F above. (40 C.F.R. §122.41(l)(7).)

H. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the State Water Board, Regional Water Board, or U.S. EPA, the Discharger must promptly submit such facts or information. (40 C.F.R. §122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

The Lahontan Water Board and the State Water Board are authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, sections 13268, 13350, 13385, 13386, and 13387.

Attachment E – Monitoring and Reporting Program

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Attachment E – Monitoring and Reporting Program

Section 308 of the federal Clean Water Act (CWA) and sections 122.41(h), (j)-(l), 122.44(i), and 122.48 of title 40 of the Code of Federal Regulations (40 C.F.R.) require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Lahontan Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This MRP establishes monitoring, reporting, and recordkeeping requirements that implement the federal and California laws and/or regulations.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein must be representative of the nature of the monitored discharge. All samples must be taken at the approved NPDES monitoring locations specified in the Discharger's APAP map, and at the locations specified on the "Contingency Monitoring Locations in Lake Tahoe" map in Attachment C. Monitoring locations must not be changed without notification to and the approval from the Lahontan Water Board Executive Officer.

In the event a certified laboratory is not available to the Discharger, analyses performed by a non-certified laboratory or using field test kits will be accepted provided that a Quality Assurance/Quality Control Program (QA/QC) is instituted by the laboratory and approved by the Executive Officer. Documentation of QA/QC protocols and adherence to the protocols must be kept in the laboratory or at the site for field test kits and shall be available for inspection by Lahontan Water Board staff. The QA/QC Program must conform to State Water Resources Control Board (State Water Board) and USEPA guidelines or to procedures approved by the Lahontan Water Board. Refer to https://www.waterboards.ca.gov/water_issues/programs/quality_assurance/qapp.html for specific details on QA/QC program requirements. Supplemental field testing for constituents that could be analyzed by a certified laboratory may be done in the field with test kits and meters provided:

1. Samples collected at the minimum-required monitoring frequencies are performed by a certified lab,
2. A QA/QC program approved by the Executive Officer or Designee is followed,
3. Detection limits, accuracy, and precision of the kits and meters meet USEPA and Surface Water Ambient Monitoring Program (SWAMP) standards, and
4. All results for field testing must be reported to the Lahontan Water Board in quarterly and annual self-monitoring reports (SMRs). Supporting QA/QC data must be determined using an established program and retained onsite and reported if requested.

B. Samples must be collected at such a point and in such a manner to ensure a representative sample of the discharge.

C. **Laboratory Certification**: Laboratories analyzing monitoring samples shall be certified by the State Water Board, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.

D. All analyses must be conducted in accordance with the latest edition of "Guidelines Establishing Test Procedures for Analysis of Pollutants," promulgated by the U.S. EPA in title 40 Code Federal Regulation (40 C.F.R.) 136 or equivalent methods that are commercially and reasonably available and that provide quantification of sampling parameters and constituents sufficient to evaluate compliance with applicable receiving water limits. Equivalent methods must be more sensitive than those specified in 40 C.F.R. 136 if the method is available in the 40 C.F.R. 136, and must be approved for use by the Lahontan Water Board Executive Officer.

   Any procedures to prevent the contamination of samples as described in the monitoring program in the APAP must be implemented.

E. Records of monitoring information must include the following:

   1. The date, monitoring location, and time of sampling or measurements;
   2. The individuals who performed the sampling or measurements;
   3. Visual observation at the sampling location for any physical changes such as signs of harmful algal blooms or floating material.
   4. The dates analyses were performed;
   5. The individuals who performed the analyses;
   6. The analytical techniques or methods used; and
   7. Results of analyses.

F. All monitoring instruments and devices used to fulfill the prescribed monitoring program must be properly maintained and calibrated as necessary to ensure their accuracy.

G. Monitoring results, including noncompliance, must be reported at intervals and in a manner specified in this MRP.

II. SAMPLE TYPES AND MONITORING LOCATIONS

A. Sample Types

The following monitoring is required for each sampling event:

1. **Background Monitoring.** Background monitoring samples must be collected in the application areas described within treatment areas specified in the Discharger's APAP and LMCAP just prior to (within 7 days in advance of) the application event.

2. **Event Monitoring.** Event monitoring samples must be collected at receiving water monitoring locations outside of the treatment areas specified in the Discharger's APAP and LMCAP immediately after the application event, but after sufficient time has elapsed such that treated water could have exited the treatment area.
3. **Post-Event Monitoring.** Post-event monitoring samples must be collected at the treatment area and receiving water monitoring locations specified in the Discharger's APAP, and LMCAP within seven (7) days after the application event and continue weekly at all treatment area and receiving water monitoring stations until compliance with receiving water limits is demonstrated for two consecutive monitoring events at least 48-hours and no greater than seven (7) days apart.
4. **Contingency Monitoring.** If monitoring at contingency monitoring stations is required as described below, contingency monitoring must be conducted at the contingency monitoring locations specified on the "Contingency Monitoring Locations in Lake Tahoe" map in Attachment C.

B. Monitoring Locations

The Discharger must monitor at the locations specified in the Discharger's APAP and LMCAP and, if applicable, the "Contingency Monitoring Locations in Lake Tahoe" map in Attachment C to demonstrate compliance with the receiving water limitations, discharge specifications, and other requirements in this Order. If monitoring locations are revised in response to revised treatment area locations reported per section VI.C.4 of this Order, the Discharger must reflect such revised monitoring locations on the map submitted per section VI.C.4 of this Order.

The following number and location of samples must be provided at a minimum:

1. A minimum of one monitoring location must be located in each treatment area that receives an aquatic herbicide, and Rhodamine WT application .
2. Receiving water monitoring locations must be located outside of the treatment area boundary at the locations specified in the Discharger's APAP and LMCAP. Where a treatment area has receiving waters on each side of the treatment area (e.g., is not at the end of a lagoon arm), two receiving water monitoring locations must be provided on either side of the treatment area. For receiving waters located between two treatment areas, a single receiving water monitoring station must be provided to meet monitoring location requirements for both treatment areas.
3. Contingency monitoring locations must be located in the Main Lagoon and within Lake Tahoe at the locations specified in the "Contingency Monitoring Locations in Lake Tahoe" map in Attachment C. Receiving water monitoring must occur at contingency monitoring locations if aquatic herbicide residues, Rhodamine WT or other receiving water limitations are exceeded at any

receiving water monitoring station adjacent to contingency monitoring locations within the Main Lagoon.

4. Pre-biologic and post-biologic monitoring locations must be provided in each treatment area. Pre- and post-biologic monitoring must be conducted at the same locations in each treatment area.
5. A minimum of one surface water monitoring location and one sediment monitoring location must be located in each treatment area that receives a lanthanum-modified clay discharge.
6. The Discharger must monitor Tahoe Keys Water Company drinking water supply at well numbers 2 and 3 illustrated on the "Treatment Areas, Barrier Locations, and Main Lagoon Monitoring Locations" map in Attachment C.

The Discharger must ensure monitoring locations characterize water quality within the treatment areas and receiving waters, including contingency monitoring locations, and control monitoring location that are representative of variations in field conditions.

III. RECEIVING WATER MONITORING REQUIREMENTS

A. General Monitoring Requirements

Compliance with the receiving water limitations prescribed in Section V of this Order will be determined by assessment of the results of the event and post-event monitoring. The discharger must demonstrate compliance with receiving water limitations at all times outside of the treatment areas. The discharger must demonstrate compliance with receiving water limitations in 21 days after the application event.

If receiving water limitations for residual aquatic herbicide or Rhodamine WT or other monitoring parameters are exceeded at a monitoring station, monitoring must be conducted at least once per seven (7) days at that station until the discharger is in compliance with receiving water limitations for two consecutive monitoring events at the monitoring station, with the monitoring events occurring no more than seven (7) days apart.

If receiving water limitations for residual aquatic herbicide, Rhodamine WT or other monitoring parameters are exceeded at a receiving water or contingency monitoring station, receiving water monitoring must be extended to the next, nearest contingency monitoring station toward Lake Tahoe within the Main Lagoon specified on the "Contingency Monitoring Locations in Lake Tahoe" maps in Attachment C. Contingency monitoring must be extended out to the additional contingency monitoring stations within the Main Lagoon and into Lake Tahoe until the discharger demonstrates compliance with receiving water limitations and, if not in compliance with receiving water limits at a monitoring station, continue at a least once per seven (7) days at that station until the discharger is in compliance with receiving water limitations for two consecutive monitoring events a minimum of 48-hours apart.

The Discharger must collect all monitoring data specified in Table E-1 and E-2 below for all monitoring events including extended monitoring at contingency monitoring stations when one or more parameters exceed receiving water limits.

B. Visual, Physical, and Chemical Monitoring Requirements

Monitoring must take place at the receiving water monitoring locations that are described in the Discharger's approved APAP and LCAMP and contingency monitoring locations specified on the "Contingency Monitoring Locations in Lake Tahoe" map in Attachment C. Monitoring for all active ingredients and basic water quality parameters must include frequent and routine monitoring per the frequencies and requirements summarized in Tables E-1 and E-2 below:

.

Table E-1. Residual Aquatic Herbicide and Rhodamine WT Discharge Monitoring Requirements

Sample Type	Constituent/ Parameter	Units	Sample Method	Minimum Sampling Frequency	Sample Type Requirement	Required Analytical Test Method
Visual	1. Monitoring area description (lake, open waterway, channel, etc.) 2. Appearance of waterway (sheen, color, clarity, etc.) 3. Weather conditions (fog, rain, wind, etc.)	Not applicable	Visual Observation	[Reference Note 1 following Table E-1]	Background, Event and Post-event Monitoring	Not Applicable
Physical	Temperature	ºF	Grab [Reference Note 4 following Table E-1]	[Reference Note 5 following Table E-1]	Background, Event and Post-event Monitoring	[Reference Notes 2 and 6 following Table E-1]
Physical	pH	Number	Grab [Reference Note 4 following Table E-1]	[Reference Note 5 following Table E-1]	Background, Event and Post-event Monitoring	[Reference Notes 2 and 6 following Table E-1]
Physical	Turbidity	NTU	Grab [Reference Note 4 following Table E-1]	[Reference Note 5 following Table E-1]	Background, When Placing Turbidity Barriers and When Removing Turbidity Barriers	[Reference Notes 2 and 6 following Table E-1]

Sample Type	Constituent/ Parameter	Units	Sample Method	Minimum Sampling Frequency	Sample Type Requirement	Required Analytical Test Method
Chemical	Dissolved Oxygen	mg/L	Grab [Reference Note 4 following Table E-1]	[Reference Note 5 following Table E-1]	Background, Event and Post-event Monitoring	[Reference Note 2 and 6 following Table E-1]
Chemical	Chemical/Residue [Reference Note 7 following Table E-1]	µg/L	Composite [Reference Note 4 following Table E-1]	[Reference Note 5 following Table E-1]	Background, Event and Post-event Monitoring	[Reference Note 3 and 6 following Table E-1]

Notes:

1. Frequency of visual monitoring is to collect the specified visual information at each monitoring location for each monitoring event (i.e., background, event, and post-event).
2. Field testing with hand-held multiprobe for temperature, pH, dissolved oxygen and turbidity.
3. Certified Laboratory testing.
4. Grab sample or multi-probe measurements of temperature, pH, turbidity and dissolved oxygen to be taken as discrete measurements from the surface, mid-depth, and near bottom within the water column. Chemical/residue measurements must be collected as composited water samples consisting of samples of equal volume from near the surface (15-30 cm below surface), mid-depth, and 25-30 cm from the bottom mixed (combined) to form a composite sample.
5. Results from a minimum one sample from each monitoring location for background and event monitoring events must be analyzed and reported. Results from a minimum two samples from each monitoring location for post-event monitoring events collected no more than seven (7) days apart must be analyzed and reported. When receiving water limitations for residual aquatic herbicide or Rhodamine WT or other monitoring parameters are exceeded at a monitoring station, monitoring must be conducted at least once per seven (7) days at that station until the discharger is in compliance with receiving water limitations for two consecutive monitoring events a minimum of 48 hours apart at the monitoring station. Results from turbidity monitoring before placement, during placement and during removal of turbidity barriers must be analyzed and reported. Measurements must be hourly during placement/removal of the barriers and daily following placement/removal until compliance with the turbidity water quality objective is demonstrated.

6. Pollutants must be analyzed using the analytical methods described in 40 C.F.R. part 136. Where no methods are specified for a given pollutant, pollutants must be analyzed by a method proposed by the Discharger and approved by the Lahontan Water Board Executive Officer.
7. Endothall acid (CAS# 145-73-3), endothall dipotassium salt (CAS# 2164-07-0), triclopyr acid (CAS# 55335-06-3), TCP (CAS# 6515-38-4), 3,6-DCP (CAS# 57864-39-8), Rhodamine WT (CAS# 37299-86-8)

Table E-2. Monitoring Requirements for Lanthanum-Modified Clay Discharges

Sample Type	Constituent/ Parameter	Units	Sample Method	Minimum Sampling Frequency	Sample Type Requirement	Required Analytical Test Method
Visual	1. Monitoring area description 2. Appearance of waterway (sheen, color, clarity, etc.) 3. Weather conditions (fog, rain, wind, etc.)	Not applicable	Visual Observation	[Reference Note 1 following Table E-2]	Background, Event and Post-event Monitoring	Not Applicable
Physical	Temperature	ºF	Grab [Reference Note 4 following Table E-2]	[Reference Note 5 following Table E-2]	Background, Event and Post-event Monitoring	[Reference Note 2 and 6 following Table E-2]
Physical	pH	Number	Grab [Reference Note 4 following Table E-2]	[Reference Note 5 following Table E-2]	Background, Event and Post-event Monitoring	[Reference Note 2 and 6 following Table E-2]

Sample Type	Constituent/ Parameter	Units	Sample Method	Minimum Sampling Frequency	Sample Type Requirement	Required Analytical Test Method
Physical	Turbidity	NTU	Grab [Reference Note 4 following Table E-2]	[Reference Note 5 following Table E-2]	Background, Event and Post-event Monitoring	[Reference Note 2 and 6 following Table E-2]
Chemical	Dissolved Oxygen	mg/L	Grab [Reference Note 4 following Table E-2]	[Reference Note 5 following Table E-2]	Background, Event and Post-event Monitoring	[Reference Note 2 and 6 following Table E-2]
Chemical	Free Lanthanum – water	µg/L	Composite [Reference Note 4 following Table E-2]	[Reference Note 5 following Table E-2]	Background, Event and Post-event Monitoring	[Reference Note 3 and 6 following Table E-2]
Chemical	Total B– sediment	µg/kg	Grab [Reference Note 4 following Table E-2]	[Reference Note 7 following Table E-2]	Background, Event and Post-event Monitoring	[Reference Note 3 and 6 following Table E-2]
Chemical	Alkalinity	mg/L $CaCO_3$	Composite [Reference Note 4 following Table E-2]	[Reference Note 5 following Table E-2]	Background, Event and Post-event Monitoring	[Reference Note 3 and 6 following Table E-2]

Chemical	Total Suspended Solids	mg/L	Composite [Reference Note 4 following Table E-2]	[Reference Note 5 following Table E-2]	Background, Event and Post-event Monitoring	[Reference Note 3 and 6 following Table E-2]
Chemical	Free Reactive Phosphorus	mg/L	Composite [Reference Note 4 following Table E-2]	[Reference Note 5 following Table E-2]	Background, Event and Post-event Monitoring	[Reference Note 3 and 6 following Table E-2]
Chemical	Total Phosphorus – water	mg/L	Composite [Reference Note 4 following Table E-2]	[Reference Note 5 following Table E-2]	Background, Event and Post-event Monitoring	[Reference Note 3 and 6 following Table E-2]

Notes:

1. Frequency of visual monitoring is to collect the specified visual information at each monitoring location for each monitoring event (i.e., background, event and post-event).
2. Field testing with hand-held multiprobe for temperature, pH, dissolved oxygen and turbidity.
3. Certified Laboratory testing.
4. Grab sample or multi-probe measurements of temperature, pH, turbidity and dissolved oxygen to be taken as discrete measurements from the surface, mid-depth, and near bottom within the water column. Chemical/residue measurements must be collected as composited water samples consisting of samples of equal volume from near the surface (15-30 cm below surface), mid-depth, and 25-30 cm from the bottom mixed (combined) to form a composite sample. Sediment samples must be collected as grab samples using a Ponar sediment sampling device.
5. Results from a minimum one sample from each monitoring location for background and event monitoring events must be analyzed and reported. When receiving water limitations for residual aquatic herbicide or Rhodamine WT or other monitoring parameters are exceeded at a monitoring station, monitoring must be conducted at least once per seven (7) days at that station until the discharger is in compliance with receiving water limitations for two consecutive monitoring events a minimum of 48 hours apart at the monitoring station. Results from turbidity monitoring before placement, during placement and during removal of

turbidity barriers must be analyzed and reported. Measurements must be hourly during placement/removal of the barriers and daily following placement/removal until compliance with the turbidity water quality objective is demonstrated.

6. Pollutants must be analyzed using the analytical methods described in 40 C.F.R. part 136. Where no methods are specified for a given pollutant, pollutants must be analyzed by a method proposed by the Discharger and approved by the Lahontan Water Board Executive Officer.
7. To address variability in sediment quality, results from a minimum of two samples from each monitoring location for each monitoring event (background, event and post-event) must be analyzed and reported.

IV. OTHER MONITORING REQUIREMENTS

A. Biological Monitoring

The Discharger must characterize impacts of the chemical discharges on aquatic life uses in the treatment areas by using biomonitoring (bioassessment) techniques to document the assemblages of aquatic communities and condition of physical aquatic habitat. Biomonitoring must be conducted for each treatment area a minimum once before the application event and a minimum of annually thereafter. A qualified biologist must provide a certification assessing restoration of non-target aquatic life and benthic communities within treatment areas two years post-treatment. The biomonitoring must be conducted in accordance with the bioassessment protocols specified in the National Lakes Assessment 2017 Field Operations Manual, Version 1.1, April 2017, or equivalent methods approved by the Lahontan Water Board Executive Officer.

1. **Macroinvertebrate Monitoring.** The Discharger must conduct macroinvertebrate monitoring, including benthic macroinvertebrates, as described, above, and in Table E-3. Specific details on timing, frequency and duration of monitoring are as follows:

Table E-3. Macroinvertebrate Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Timing, Frequency and Duration
Macroinvertebrates	IBI	Not applicable	Background Event and Post-Event Monitoring, Annually for a Minimum Two Years

B. Sediment Monitoring

The Discharger must conduct background event- and post-event sediment monitoring for endothall and triclopyr residues in each treatment area. One pre-project and one-post project sediment sample must be collected from each herbicide treatment area and analyzed for Endothall acid, endothall dipotassium salt, triclopyr acid, TCP and 3,6-DCP.

Sediment samples must be collected as grab samples using a Ponar sediment sampling device. Post-event residual aquatic herbicide sediment samples must be collected 21 days after application or at a date no later than required to analyze and provide a Sediment Monitoring Report with the two (2) year post-biological monitoring report and certification. Specific details on frequency and timing are as follows. The Sediment Monitoring Report must include all Table E-4. Sediment Monitoring Requirements.

Table E-4. Sediment Monitoring Requirements

Parameter[1, 3, 4]	Units	Sample Type[2]	Minimum Sampling Frequency
Endothall Acid - sediment	µg/kg	Grab	Background and Post-Event Monitoring
Endothall Dipotassium Salt - sediment	µg/kg	Grab	Background and Post-Event Monitoring
Triclopyr Acid - sediment	µg/kg	Grab	Background and Post-Event Monitoring
TCP - sediment	µg/kg	Grab	Background and Post-Event Monitoring
3,6-DCP - sediment	µg/kg	Grab	Background and Post-Event Monitoring

Notes:

1. Certified Laboratory testing.
2. Sediment samples must be collected as grab samples using a Ponar sediment sampling device.
3. Pollutants must be analyzed using the analytical methods described in 40 C.F.R. part 136. Where no methods are specified for a given pollutant, pollutants must be analyzed by a method proposed by the Discharger and approved by the Lahontan Water Board Executive Officer.
4. To address variability in sediment quality, results from a minimum of two samples from each monitoring location for background and post-event monitoring events must be analyzed and reported.

C. Water Supply Monitoring

The Discharger must conduct background and post-event drinking water supply well monitoring at Tahoe Keys Water Company supply well numbers 2 and 3 illustrated on the “Treatment Areas, Barrier Locations, and Main Lagoon Monitoring Locations” map in Attachment C. One pre-application event and post-application event drinking water samples must be collected from each well and analyzed for Endothall acid, endothall dipotassium salt, triclopyr acid, TCP and 3,6-DCP.

Post-application event residual aquatic herbicide drinking water well samples must be collected 48-hours after application events and continue every 48-hours until 14-days after completion of application events. Results of monitoring must be submitted with the Annual Reports required per section V.C below. The Annual Report must include all Table E-5 Drinking Water Supply Monitoring Requirements. Specific details on timing, frequency and duration of monitoring are as follows:

Table E-5. Water Supply Monitoring Requirements

Parameter[1]	Units	Sample Type[2]	Minimum Sampling Timing, Frequency and Duration
Endothall Acid	µg/L	Grab	Background Event and Post-Event Monitoring, Every 48-hours for 14-Days Post-Application Events
Endothall Dipotassium Salt	µg/L	Grab	Background Event and Post-Event Monitoring, Every 48-hours for 14-Days Post-Application Events
Triclopyr Acid	µg/L	Grab	Background Event and Post-Event Monitoring, Every 48-hours for 14-Days Post-Application Events
TCP	µg/L	Grab	Background Event and Post-Event Monitoring, Every 48-hours for 14-Days Post-Application Events
3,6-DCP	µg/L	Grab	Background Event and Post-Event Monitoring, Every 48-hours for 14-Days Post-Application Events

Notes:

1. Certified Laboratory testing.
2. Pollutants must be analyzed using the analytical methods described in 40 C.F.R. part 136. Where no methods are specified for a given pollutant, pollutants must be analyzed by a method proposed by the Discharger and approved by the Lahontan Water Board Executive Officer.

D. Hydrologic Conditions

The Discharger must monitor the hydraulic gradient or flow of water between the Tahoe Keys and Lake Tahoe prior to herbicide application and at a weekly frequency during the treatment event.

V. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger must comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. The Discharger must submit Annual Monitoring Reports as specified, below. The reports must contain all data collected for the year and present the data in a tabular format. The report must also present in tabular and graphical formats, all data collected for the entire project (i.e., background event, event, and post-event monitoring). Any additional water quality monitoring samples collected and analyzed beyond requirements in this Order (e.g., parameters monitored that are not required to be monitored or parameters required but monitored longer or more frequently than required) must be reported by the Discharger in the Annual Report submissions specified in section E.V.C below.
3 For each parameter with a receiving water limitation listed in Section V of this Order, the Discharger must determine and report compliance status with respect to the receiving water limitation. Sampling results and receiving water limitations must be provided in a tabular format that allows for easy comparison of sample results and receiving water limitations. All exceedances of receiving water limitations must be identified within the table(s).
4. The Discharger must report to the Lahontan Water Board within 24 hours by phone followed by a written report within 5 days as specified in section E.V.G.1 and 2, any toxic chemical release data that are reported to the State Emergency Response Commission pursuant to section 313 of the "Emergency Planning and Community Right to Know Act" of 1986 (42 U.S.C. §11001 et. seq.).

B. Annual Information Collection

The Discharger must collect and retain all information on the previous reporting year beginning January 1 and ending December 31. The Discharger must submit the annual information in an Annual Report per the schedule specified in section E.V.C, below, and when otherwise requested by the Lahontan Water Board Executive Officer. Annual information collection must include the following:

1. An executive summary discussing compliance or violation of this Order and the effectiveness of the BMPs implemented in reducing or preventing non-compliance with this Order associated with aquatic herbicide, Rhodamine WT and lanthanum-modified clay applications.
2. Monitoring data and recommendations for improvements to the APAP including best management practices (BMPs) and the monitoring program based on evaluation of the monitoring results. All receiving water monitoring data must be compared to receiving water limitations and existing receiving water quality.
3. Identification of BMPs currently in use and a discussion of their effectiveness in meeting the requirements in this Order.
4. A discussion of any BMP modifications made to address violations of this Order.

5. Map(s) showing the location and size of each treatment area including locations of all monitoring conducted with unique monitoring station identifiers for each monitoring station, the specific aquatic herbicide applied to each treatment area denoted and treatment areas that received lanthanum-modified clay treatments denoted.
6. Quantity of aquatic herbicides, Rhodamine WT and lanthanum-modified clay applied to each application area during each application event.
7. Information utilized to establish target mixed chemical concentration and the quantity of each chemical discharged in each treatment area in the year of treatment including measurements and calculations of treatment area, volume, and any other information utilized for these calculations.
8. Information on the aquatic herbicide applied to each treatment area and plant survey data collected and include any other treatment (non-chemical or mitigation effort) performed on each area.
9. Information on the lanthanum-modified clay dosage for each treatment area treated with lanthanum-modified clay.
10. Sampling results must indicate the name of the sampling staff performing the sampling and their affiliation, detailed sampling location information (including latitude and longitude or township/range/section if available), detailed map showing each treatment area and associated treatment area and receiving water sampling locations, collection date, name of constituent/parameter and its concentration detected, minimum levels, method utilized, method detection limits for each constituent analysis, unique name or descriptor for each monitoring location sampled, and a comparison of monitoring results to applicable receiving water limits and description of the analytical Quality Assurance/Quality Control Plan measures implemented and results.
11. An application log containing, at a minimum, the following information: Date of application; Location of application; Name of applicator; Type and amount of aquatic herbicide, Rhodamine WT and/or lanthanum-modified clay used; application details, such as level of water body, time application started and stopped, aquatic herbicide application method, rate and concentration; visual monitoring assessment; and Certification that applicator(s) followed the APAP and implemented the minimum BMPs identified in VI.C.3 of this Order.
12. Records of all aquatic pesticide applicator and associated staff safety training including name of each team member trained, date/time of training and summary of training material covered. Training records are to include documentation of aquatic pesticide applicator daily, morning safety briefings in addition to any other one-time or routine training conducted.

C. Annual Report

The Discharger must submit to the Lahontan Water Board Executive Officer an annual report consisting of a summary of the past year's activities, and an assessment of compliance with all requirements of this Order. If there is no herbicide

and rhodamine application during the annual report period, the Discharger must provide the Executive Officer a certification that no discharge to any surface waters occurred during the reporting period. The annual report must contain the monitoring data and other required information specified in section E.V.B, above.

The Discharger must submit the annual report according to the following schedule:

Table E-6. Reporting Schedule

Reporting Frequency	Reporting Period	Annual Report Due
Annual	January 1 through December 31	March 15

D. Electronic Reporting

The Discharger must email all reports to Lahontan@waterboards.ca.gov and include TKPOA [Report Name] in the subject line. At any time during the term of this Order, the Lahontan Water Board Executive Officer may notify the Discharger of the requirement to submit electronically Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program (http://www.waterboards.ca.gov/ciwqs/index.html). The CIWQS website will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

E. Reporting Protocols

The Discharger must report with each sample result the applicable reported Minimum Level (ML) and the current Minimum Detection Limit, as determined by the procedure in 40 C.F.R. part 136 or alternate approved method.

The Discharger must report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

1. Sample results greater than or equal to the reported ML must be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
2. Sample results less than the Report Limit, but greater than or equal to the laboratory's MDL, must be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample must also be reported.

   For the purposes of data collection, the laboratory must write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (plus a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

3. Sample results less than the laboratory's MDL must be reported as "<" followed by the MDL.
4. The Discharger must instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
5. Multiple Sample Data: If two or more sample results are available, the Discharger must compute the arithmetic mean unless the data set contains one or more reported determinations of DNQ or "Not Detected" (ND). In those cases, the Discharger must compute the median in place of the arithmetic mean in accordance with the following procedure:
    a. The data set must be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
    b. The median value of the data set must be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value must be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
6. The Annual Report must comply with the following requirements:
    a. The Discharger must arrange all reported data in a tabular format. The data must be summarized to clearly illustrate whether the aquatic herbicide applications are conducted in compliance with effluent and receiving water limitations. The Discharger is not required to duplicate the submittal of data that are entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger must submit electronically the data in a tabular format as an attachment.
    b. The Discharger must attach a cover letter to the Annual Report that clearly identifies any violations of the Order; discusses corrective actions taken or planned; and provides a time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
    c. The Annual Report must be submitted to the Lahontan Water Board, signed and certified as required by the Standard Provisions (Attachment D).

F. Compliance Determination

Compliance with the receiving water limitations prescribed in Section V of this Order will be determined by assessment of the results of the event and post-event monitoring conducted in accordance with Attachment E.

The discharger must demonstrate compliance with receiving water limitations at all times outside of the treatment areas. The discharger must demonstrate compliance with receiving water limitations within the treatment area within 21 days after the application event. This demonstration must use sample reporting protocols defined in Attachment E and Attachment A of this Order. For purposes of reporting and enforcement by the Lahontan Water Board, the Discharger shall be determined to be out of compliance with receiving water limitations if residual aquatic herbicide, Rhodamine WT or lanthanum-modified clay discharges cause the pollutant concentrations, as reflected by monitoring sample results, to exceed receiving water limitations established in this Order and greater than or equal to the reporting level (RL).

G. Other Reporting Requirements

1. Twenty-Four Hour Report

   The Discharger must report to the Lahontan Water Board any noncompliance, including any unexpected or unintended effect of a discharge, that may endanger public health or the environment. Any information must be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances and must include the following information:

   a. The caller's name and telephone number;
   b. Applicator name and mailing address;
   c. Waste Discharge Identification (WDID) number;
   d. The name and telephone number of a contact person;
   e. How and when the Discharger become aware of the noncompliance;
   f. Description of the location of the noncompliance;
   g. Description of the noncompliance identified and the U.S. EPA pesticide registration number for each product the Discharger applied in the area of the noncompliance; and
   h. Description of any steps that the Discharger has taken or will take to correct, repair, remedy, cleanup, or otherwise address any adverse effects.

      If the Discharger is unable to notify Lahontan Water Board within 24 hours, the Discharger must do so as soon as possible and also provide the rationale for why the Discharger was unable to provide such notification within 24 hours.

2. Five-Day Written Report

   The Discharger must also provide a written report within five (5) days of the time the Discharger becomes aware of any noncompliance. The written submission must contain the following information:

   a. Date and time the Discharger contacted the Lahontan Water Board notifying of the noncompliance and any instructions received from the Lahontan Water

Board; information required to be provided in this Attachment E V.G.1 (24-Hour Reporting);

b. A description of the noncompliance and its cause, including exact date and time and species affected, estimated number of individual and approximate size of dead or distressed organisms (other than the pests to be eliminated);

c. Location of incident, including the names of any waters affected and appearance of those waters (sheen, color, clarity, etc.);

d. Magnitude and scope of the affected area (e.g., aquatic square area or total stream distance affected);

e. Chemical application rate, intended use site (e.g., banks, above, or direct to water), method of application, and name of chemical product, description of product ingredients, and U.S. EPA registration number;

f. Description of the habitat and the circumstances under which the noncompliance activity occurred (including any available ambient water data for aquatic herbicides applied);

g. Laboratory tests performed, if any, and timing of tests. Provide a summary of the test results within five days after they become available;

h. If applicable, explain why the Discharger believes the noncompliance could not have been caused by exposure to the aquatic herbicides from the Coalition's or Discharger's application; and

i. Actions to be taken to prevent recurrence of adverse incidents.

Lahontan Water Board staff may waive the above required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. Such a waiver must be provided in writing.

3. Hazardous Substance Spill Report

In addition to any other reporting requirements, pursuant to CWC section 13271, the Discharger must immediately notify the Governor's Office of Emergency Services (OES) of any hazardous substance discharged into or onto state waters. Pursuant to CWC section 13267, the Discharger must also notify the Lahontan Water Board's Lake Tahoe office of any spills reported to OES within 24 hours by telephone. CWC section 13271(a)(3) states that OES will immediately notify the Lahontan Water Board, local health officer, and administrator of environmental health. Immediately means: (1) as soon as there is knowledge of the discharge, (2) as soon as notification is possible, and (3) when notification can be provided without substantially impeding cleanup or other emergency measures. The reportable quantities for hazardous substances are those developed by the U.S. EPA contained in 40 C.F.R. part 302.

H. Summary of Reports

The following table summarizes all reports the Discharger is required to submit.

Table E-6 Summary of Reports

Report Name	Location of Requirement	Monitoring Period	Due Date
APAP and LMCAP with BMP Implementation Plans	Order section VI.C, and VII.C	N/A	30 -days after adoption of this Order
APAP and LMCAP with Year of Treatment, Treatment Area Locations	Order section VI.C., and VII.C	N/A	30 days prior to discharge
Annual Monitoring Report	MRP section V.C	January 1 through December 31	March 1 of each year
Pre-Biological Monitoring Report	MRP section IV.A	January 1 through December 31	March 1 of the year following pre-biological monitoring
Post-Biological Monitoring Report	MRP section IV.A	January 1 through December 31	March 1of the year following completion of post-biological monitoring
Sediment Monitoring Report	MRP section IV.B	January 1 through December 31	March 1 of the year following completion of post-biological monitoring

Attachment F – Fact Sheet

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Attachment F– Fact Sheet

As described in section II.B of this Order, the Lahontan Regional Water Quality Control Board (Lahontan Water Board) incorporates this Fact Sheet as findings of the Lahontan Water Board supporting the issuance of this Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in California. Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	6A091701001
Discharger	Tahoe Keys Property Owners Association
Name of Facility	Tahoe Keys Lagoons
Facility Address	356 Ala Wai Blvd., City of South Lake Tahoe, CA, 96150
Facility Contact, Title and Phone	Kirk Wooldridge, General Manager, (530) 542-6444
Authorized Person to Sign/Submit	Kirk Wooldridge, General Manager
Mailing Address	356 Ala Wai Blvd.
Billing Address	356 Ala Wai Blvd.
Type of Facility	Multi-Use Development
Major or Minor Facility	Minor
Threat to Water Quality	2
Complexity	C
Pretreatment Program	Not Applicable
Recycling Requirements	Not Applicable
Facility Permitted Flow	Not Applicable
Facility Design Flow	Not Applicable
Watershed	South Tahoe and the Tahoe Lake Body Hydrologic Areas

Receiving Water	Tahoe Keys Main Lagoon, Lake Tahoe, Tallac Lagoon and Pope Marsh
Receiving Water Type	Inland surface water

A. Tahoe Keys Property Owners Association (hereinafter Discharger or TKPOA) is a residential association of property owners in South Lake Tahoe, California. The Tahoe Keys Lagoons (hereinafter Facility) are artificial waterways that were created as part of a multi-use residential development. TKPOA is responsible for maintaining the Tahoe Keys Lagoons. TKPOA is responsible for implementing the Tahoe Keys Lagoons Aquatic Weed Control Methods Test (Project), including the discharge of aquatic herbicide residues, Rhodamine WT (dye tracer), and lanthanum-modified clay (phosphorus control).

   For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

B. The Discharger will discharge to the Tahoe Keys Lagoons and Lake Tallac, both waters of the United States, within the South Tahoe Hydrologic Area and the Tahoe Lake Body Hydrologic Area (CA Department of Water Resources No. 634.10 and 634.30, respectively). Attachment B provides a map of the area around the Facility. Attachment C provides a detailed map of the Facility.

C. The Discharger filed a Report of Waste Discharge (ROWD) and submitted an application for Waste Discharge Requirements (WDRs) and an NPDES permit on January 17, 2017. Supplemental information was provided on July 21, 2017, July 25, 2018, April 30, 2021, and May 6, 2021. The application was deemed complete on May 6, 2021.

D. Regulations at 40 C.F.R. section 122.46 limits the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. However, pursuant to California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. PROJECT DESCRIPTION

The Tahoe Keys residential development is situated on 372 acres of land and inland waterways accessible to Lake Tahoe. Common properties include private beaches, clubhouse, swimming pools, tennis courts, basketball court, navigable waterways, boat docks, pier, and park lands. Public service facilities include administrative offices, water wells and distribution system, corporation yard, and a lagoon water treatment and circulation facility (located at 2100 Texas Avenue in the City of South Lake Tahoe).

The Tahoe Keys Lagoons are comprised of three principal man-made water features: The Main Lagoon, the Lake Tallac Lagoon, and the Marina Lagoon. The Facility location is

shown in Attachment B and C. Information regarding each of the three lagoons is shown on Table F-2. TKPOA harvests aquatic weeds in the Main Lagoon, and the areas of the Marina Lagoon owned by TKPOA, the California Tahoe Conservancy (CTC), Tahoe Keys Marina (TKM), and the Tahoe Keys Beach and Harbor Association (TKB&HA) under the provisions of a settlement agreement.

TKPOA is a non-profit 1,529-member common interest residential subdivision development in the City of South Lake Tahoe (CSLT), El Dorado County, encompassing 1,194 single family residential units and 335 townhouse residential units. The Tahoe Keys property owners are represented by the TKPOA which is also responsible for the common properties. TKPOA operates and maintains the homeowner-owned portions of the Tahoe Keys Lagoons (i.e., the Main Lagoon and portions of the Marina Lagoon), which are located on TKPOA member's private property and its common properties.

The TKPOA area of jurisdiction is unique at Lake Tahoe because the entire area has a dense development of residential uses on land that is a man-modified, former wetland situated within the edge of Lake Tahoe. All properties within the TKPOA area drain to waters that are directly connected to Lake Tahoe.

Table F-2. Lagoon Information

Lagoon	Surface Area (Acres)	Lagoon Property Ownership	Connection to Lake Tahoe
Main Lagoon	110	• ~700 Private Owners • TKPOA Common Area	West Channel
Marina Lagoon	32	• Tahoe Keys Marina • TKPOA Common Area • Tahoe Keys Beach and Harbor Association • California Tahoe Conservancy	East Channel
Lake Tallac Lagoon	30	• 1 Major private owner (Lagoon Partners, Inc.) • ~120 private owners • TKPOA Common Area	Via Pope Marsh

The lagoon water treatment and water circulation facilities were built for water quality improvements following construction of the Facility. The lagoon water treatment facility using chemical coagulation and clarification is not currently in operation. The water circulation facility is operational and Lahontan Water Board requirements for its operation are specified in Order No. R6T-2014-0059 issued to the Discharger.

A. Description of Current Aquatic Weed Treatment and Controls

The Discharger is currently implementing Waste Discharge Requirements (Order No. R6T-2014-0059) adopted by the Lahontan Water Board on July 14, 2014. The Findings in Order No. R6T-2014-0059 state, in part, the following:

> *"Excessive growth of aquatic plants within the [Tahoe Keys] Facility impairs beneficial uses of water, such as Cold Freshwater Habitat, Navigation, Water Contact Recreation, Non-contact Water Recreation and possibly Rare, Threatened, or Endangered Species. The excessive aquatic plant growth has caused several adverse effects to cold water ecosystems: impaired navigation of vessels, potential health and safety risk associated with entanglement of swimmers in aquatic vegetation and lack of visibility of submerged swimmers, impairment of fishing and aesthetic quality, and increased predation of native fish species by invasive fish species."*

Order No. R6T-2014-0059 requires the Discharger to develop and implement a Non-Point Source Water Quality Management Plan (NPS Plan), and an Integrated Management Plan (IMP) to address aquatic weed management. The purpose of the IMP is to optimize aquatic weed management.

The Discharger has developed, implemented, and continues to refine the NPS Plan to address potential land-based sources of nutrients contributing to aquatic weed infestations and harmful algal bloom outbreaks. In addition, the Discharger has developed, implemented, and continues to refine an IMP to address the growth of aquatic weeds utilizing non-chemical methods to control three target aquatic weeds: Eurasian watermilfoil (*Myriophyllum spicatum*), curlyleaf pondweed (*Potamogeton crispus*), and coontail (*Ceratophyllum demersum*). Of these target species, Eurasian watermilfoil and curlyleaf pondweed are invasive species. The Discharger has been implementing seasonal harvesting and other mechanical controls since the mid-1980s with limited effect in terms of controlling the aquatic weed infestations. Recent aquatic plant surveys (2014, 2015, 2016, 2017) show that non-native (i.e., invasive) aquatic weed populations in the Tahoe Keys Lagoons have been growing rapidly with 85 percent to 90 percent of the available wetted surface in the lagoons infested with invasive aquatic weeds. The majority of aquatic weeds observed in these surveys are invasive species.

Currently, only non-herbicide control methods are approved for use under Order No. R6T-2014-0059. Approved and routinely implemented non-herbicide aquatic weed control methods utilized in greater Lake Tahoe consist primarily of mechanical harvesting conducted by TKPOA, small-scale local use of bottom barriers and suction-assisted diver hand pulling. In addition, TKPOA is currently testing laminar flow aeration and ultraviolet light treatment methods on a limited scale in the Main Lagoon. Due to the size, density, and dominance of the infestation in the Tahoe Keys Lagoons, routinely implemented control methods have produced limited results. In addition, the current primary control method, aquatic weed harvesting, produces large quantities of weed fragments. These fragments are capable of propagating new plants and may be

transported by wind, aquatic animals, waterfowl, and boat traffic from the lagoons into other areas of Lake Tahoe.

A bubble curtain at the West Channel entrance from the Main Lagoon to Lake Tahoe has been in place for over one season and was implemented to prevent plant fragments from the Main Lagoon entering Lake Tahoe. Plant fragments are entrained by the bubble curtain and transported to floating bins on the bulkhead sides of the bubble curtain that capture the fragments. Work by the Army Corps of Engineers on the Columbia River indicate bubble curtains retain aquatic herbicides and slow their migration over a bubble curtain boundary in a riverine environment. This measure will minimize target aquatic plant fragments entering Lake Tahoe as a result of treatment activities and minimize the potential for aquatic herbicide residuals to enter Lake Tahoe.

B. Discharge Description

This Order is intended to regulate the Discharger's proposal to conduct an aquatic weed control methods test that includes a one-time treatment event utilizing the aquatic pesticides endothall and triclopyr in multiple test plots (16.9 acres total) in the Tahoe Keys Lagoons (14 acres) and Lake Tallac (2.9 acres) The proposed test of aquatic pesticides and of two non-chemical treatment methods is intended to test effectiveness of initial treatment to provide rapid knock-down (i.e., death) of target aquatic weeds with aquatic pesticides alone or either one of the two non-chemical treatment methods alone or a combination treatment with aquatic pesticide and a non-chemical treatment methods followed by management with non-chemical methods. The test is intended to identify which method(s) can reduce aquatic invasive weed infestations enough to control subsequent aquatic invasive weed growth in years after initial knock-down with non-chemical control methods only to prevent extensive re-infestation of target plants within the lagoons. The discharger also proposes to apply lanthanum-modified clay to sequester phosphorus from the water column if treatment methods cause increases in phosphorus compared to control sites. This measure is intended to mitigate harmful algal blooms in treatment areas if they occur due to nutrient release from the death of the target aquatic weeds following treatment. Discharger also proposes to use Rhodamine WT, a phosphorescent dye, to assess containment measure effectiveness and trace aquatic herbicide residue migration from treatment areas.

1. Aquatic Herbicides

Through onsite mesocosm studies[1], endothall and triclopyr were selected by the Discharger based on their effectiveness at killing select target aquatic weeds, while minimizing impacts to non-target species. The mesocosm studies also demonstrated the effectiveness of the proposed application rates of 2 ppm for endothall and 1 ppm for triclopyr under mesocosm study conditions. These rates are less than one-half the maximum label application rates of 5 ppm for endothall and 2.5 ppm for triclopyr.

[1] TKPOA 20179. 2016 Mesocosm Study: Effect of Four Herbicides on Eurasian watermilfoil (Myriophyllum spicatum), Curlyleaf pondweed (Potamogeton crispus), Coontail (Ceratophyllum demersum) and Elodea (Elodea canadensis). Prepared by Dr. Lars Anderson and Sierra Ecosystem Associates.

Each proposed treatment area (i.e., test site) will receive either an application of endothall or an application of triclopyr at the above-noted application rates based on pre-application surveys during the year of treatment. The pre-application surveys will provide information to identify the best aquatic herbicide to utilize at each test site to maximize control efforts while minimizing non-target effects based on aquatic plant species present. Each herbicide at each test site will be applied in one treatment event, taking several days to complete all aquatic herbicide test applications. The discharger must demonstrate compliance with receiving water limitation at all times outside of the treatment areas. The discharger must demonstrate compliance with receiving water limitations within 21 days after the application event within the treatment areas.

Timing of aquatic herbicide applications is proposed during the spring snow-melt period when Lake Tahoe is filling faster than the Tahoe Keys Lagoons and water flow is from Lake Tahoe into the Tahoe Keys Lagoons. The spring timeframe typically produces stable water inflow into the Tahoe Keys Lagoons helping retain herbicide residues within the lagoon system[2] This time period also corresponds to the early stages of plant growth when treated aquatic weed biomass will be low compared to peak seasonal growth.

Aquatic herbicides will be applied as liquid formulations mixed with Rhodamine WT and discharged from boat-mounted tanks by pumping through drop hoses to discharge from mid-depth to the bottom of the water column in the application areas within each treatment area. Triclopyr will also be applied in a granular formulation with a granular spreader on the water surface to treat shallow areas near the edges of treatment areas. For granular aquatic herbicide applications, Rhodamine WT will be discharged following granular herbicide application to trace herbicide migration. Mixing will occur partially during the application event within the treatment areas; however, it is estimated that three (3) days will be required for the discharge to be fully mixed in each treatment area based on the amount of time for complete vertical mixing to occur observed in prior Rhodamine WT studies conducted in the Main Lagoon[3] [4]..

The aquatic herbicide chemical constituents (active ingredients and residues) include: Endothall acid (CAS# 145-73-3), endothall dipotassium salt (CAS# 2164-07-0), triclopyr acid (CAS# 55335-06-3), TCP (CAS# 6515-38-4) and 3,6-DCP (CAS# 57864-39-8).

Endothall: Endothall acts as a contact herbicide but is also mobile in plant tissues and when applied at lower label rates causes plant death through foliar absorption. A preferred form of endothall is dipotassium salt which in water dissociates to

[2] La Plante, A. 2008. Exchange between the Tahoe Keys Embayments and Lake Tahoe, California-Nevada. MS Thesis - UC Davis.
[3] Anderson 2011. Anderson, L.W.J. Use of Rhodamine wr as Surrogate for Herbicide Transport in the Tahoe Keys. Final Report to the Lahontan Regional Water Quality Control Board, Project No. R6T-2010-0037.
[4] Anderson 2016. Anderson, L.W.J. Rhodamine wr Dye Applications in the Tahoe Keys. Final Report to the Lahontan Regional Water Quality Control Board, Project No. R6T-2016-0028 (2016).

endothall acid and potassium cations**.** The most sensitive endpoint is the U.S. EPA National Primary Drinking Water Regulations established maximum contaminant level (MCL) of 100 ug/L. Acute aquatic life toxic concentration endpoints are at concentrations greater than the MCL and proposed aquatic herbicide treatment concentrations[5].

Triclopyr: Triclopyr causes uncontrolled cell division and growth resulting in vascular tissue destruction, when applied at low concentrations Triclopyr triethylamine salt dissociates in water to triclopyr acid which then degrades to TCP, DCP, 5-CLP, 6-CLP and other minor degradants. The most sensitive endpoint is the criteria for triclopyr dietary exposure from drinking water published in the Federal Register (https://www.federalregister.gov/d/2016-03910/p-42) of 400 ug/L. Acute aquatic life toxic concentration endpoints are at concentrations greater than the drinking water dietary exposure limit and proposed aquatic herbicide treatment concentrations[6].

Aquatic Herbicide Synergism: The Discharger does not propose to use endothall in any treatment area immediately adjacent to, or sharing a boundary with, a triclopyr treated treatment area and vice versa, and so no synergistic effects are expected.

2. Lanthanum-Modified Clay

The discharge of lanthanum-modified clay is proposed in aquatic herbicide treatment areas, post-treatment, to mitigate any increase in harmful algal blooms (HABs) triggered by increasing phosphorus concentrations due to aquatic vegetation die-off within treatment areas.

Lanthanum is a naturally occurring earth element and background concentrations are found in soils throughout the world including the United States[7]. Lanthanum is generally found in soil in a stable form (bound to an anion) and not chemically available for uptake in the soil or release into the water column. Background levels of lanthanum (bound in forms with chlorides, carbonates and phosphates) in water body sediments tested globally (US, Europe and Australia) have typically ranged from 12-36 mg/kg, with occasional extreme exceptional high and lows[8] .

Once lanthanum-modified clay has bound with the phosphate in the water column and any phosphate released from the sediments, it forms the insoluble mineral, rhabdophane. The low solubility product of rhabdophane makes it unlikely under environmental conditions that either the phosphorus or the lanthanum will be released over time.

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[5] *Environmental Fate and Ecological Risk Assessment of Endothall – Revised*, April 22, 2005, USEPA, EPA-HQ-OPP-2009-0081-0143

[6] *Triclopyr (Acid, Choline salt, TEA salt, BEE): Draft Ecological Risk Assessment for Registration Review,* September 30, 2019, USEPA, EPA-HQ-OPP-2014-0576-0026

[7] Shacklette, H.T., Boerngen, J.G.m 1984, Element concentrations in soils and other surficial materails of the conterminous United States. U.S. Department of the Interior, U.S. Geological Survey.

[8] https://www.sepro.com/media/2668/phoslock-technical-bulletin.pdf

The application rate for lanthanum-modified clay is calculated based upon the amount of phosphorus that is to be removed from the water column by binding to the lanthanum in the treatment area. Lanthanum-modified clay is applied as a liquid formulation from boat-mounted tanks or as a granular formulation utilizing a granular spreader and discharged to the surface of the waterbody in each test site. For liquid applications, lanthanum-modified clay granules are mixed into slurry in a tank on the application boat and broadcast evenly across the water's surface at a specific volume per acre. As the slurry or granules settle through the water column, the lanthanum-modified clay binds and inactivates free reactive phosphorous. The bound phosphorus settles to the bottom as a stable insoluble mineral ($LaPO_4$). The unbound lanthanum-modified clay product also settles to the lake bottom helping prevent internal phosphorus loading from the sediment to the waterbody and also binding any free reactive phosphorus that settles to the bottom of the waterbody.

Typical lanthanum-modified clay slurry application rates are less than 150 parts per million (ppm or milligrams per Liter or mg/L), with project-specific dosing based on the amount of phosphorus targeted for inactivation. Once applied, the treated water will exhibit elevated turbidity resulting from the lanthanum-modified clay suspension in the water column. The waterbody will have a cloudy or dull appearance for approximately 4-8 hours, and generally returns to normal water transparency in less than 24 hours.

The Phoslock™ brand of lanthanum-modified clay phosphorus locking technology by SePRO is National Sanitation Foundation (NSF)/American National Standards Institute (ANSI) Standard 60-certified for use in drinking water. This certifies that Phoslock™ applications, at the maximum use rate specified on the SePRO Corporation Phoslock™ label, does not contribute contaminants that could cause adverse human health effects. Phoslock™ is the only lanthanum-modified clay product known to be currently commercially available. The most sensitive toxicological endpoint for Phoslock™ is the lowest observed effect concentration of >1 mg/L for water flea (*Ceriodaphnia dubia*).

3. Rhodamine WT

The discharge of Rhodamine WT is proposed in each aquatic herbicide treatment area at the same time, and in the same manner, as the aquatic herbicide applications, in order to assess containment measure effectiveness and provide an easily measured tracer of aquatic herbicide residue migration.

Rhodamine WT will be applied as a liquid formulation mixed with the aquatic herbicide being discharged in each treatment area and as described above under F.II.B.1. For treatment areas receiving granular triclopyr applications, Rhodamine WT will be applied immediately after the application of the granular form of triclopyr.

Rhodamine WT is NSF/ANSI Standard 60-certified for use in drinking water. The most sensitive endpoint is the drinking water concentration limit near drinking water intakes of 10 ug/L specified in NSF/ANSI Standard 60. Aquatic life toxicity endpoints

are less stringent than the NSF/ANSI Standard 60 recommended limit near drinking water intakes and proposed treatment area target concentration of 10 ug/L [9].

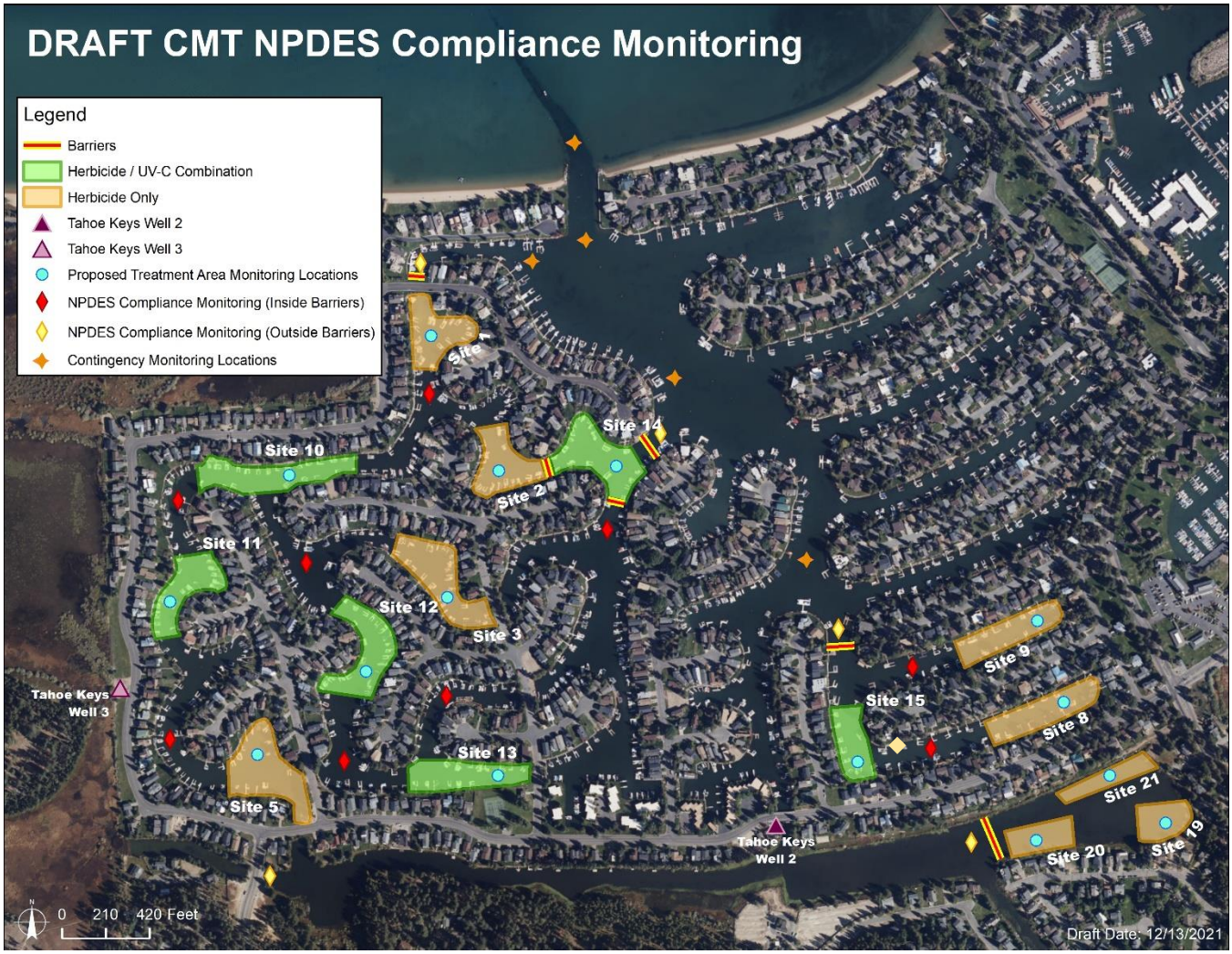
Minimum Best Management Practices (BMPs) required to be implemented to control discharges under this Order are described in F.IV.B below.

C. Discharge Points and Receiving Waters

The Discharger proposes to discharge residual aquatic herbicide, Rhodamine WT to 12 test sites in the Main Lagoon (average 1.2 acre/site) and three test sites in Lake Tallac (average 0.97 acre/site) and, if necessary, lanthanum-modified clay to any of the treatment test sites. Figure F-1 contains a map of proposed treatment site locations and table of treatment site details. Final treatment sites will be selected in the treatment year informed by spring macrophyte surveys and approved by the Lahontan Water Board Executive Officer prior to discharge as specified in this Order.

[9] *Material Safety Data Sheet for Rhodamine WT, November 15, 2013*

Figure F-1. Proposed Treatment Areas



Discharges to the Tahoe Keys Lagoons test sites are limited to the spring snow-melt period when hydraulic gradients are from Lake Tahoe filling the Tahoe Keys Lagoons. As a result, chemical constituents in the discharges will be pushed to the terminal ends of the Main Lagoon. Receiving waters for the discharges to the Tahoe Keys Lagoons test sites are the Tahoe Keys Main Lagoon and Lake Tahoe. Lake Tahoe and the Tahoe Keys Main Lagoon are within the Tahoe Lake Body Hydrologic Area (CA Department of Water Resources No. 634.30).

Receiving waters for discharges to Lake Tallac test sites are Pope Marsh located within the South Tahoe Hydrologic Area (CA Department of Water Resources No. 634.10). The Tahoe Keys Lagoons are discharge zones for groundwater and drinking water supply wells. The groundwater and drinking water wells are not considered to be influenced by surface water; therefore, groundwaters are not expected to be impacted by the discharges. This is based on depth of the wells (150-430 feet), prior Rhodamine

WT dye studies conducted in the Main Lagoon[10] [11] and absence of drinking water supply well bacteria violations on the three supply wells within the development.

Existing water quality, sediment quality, and biological data (fish and benthic macroinvertebrate surveys) for the Tahoe Keys Lagoons and Lake Tallac are provided in:

1. Final Summary of Results: Baseline Water Quality in Tahoe Keys Lagoons (Environmental Science Associates, 2019),
2. 2016 Baseline Water Quality Report for the Tahoe Keys Lagoons - Volume 1 (Sierra Ecosystem Associates, 2017),
3. 2017 Sediment Baseline Report for the Tahoe Keys Lagoons, (Sierra Ecosystem Associates, 2018), and
4. 2019 Fish and Benthic Macroinvertebrate Surveys in Tahoe Keys Lagoons (Sierra Ecosystem Associates, 2020).

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

A. Legal Authorities

This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (U.S. EPA) and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order.

B. California Environmental Quality Act

This action to adopt an NPDES permit is exempt from the provisions of chapter 3 of California Environmental Quality Act (CEQA, Public Resources Code sections 21000, et seq.), pursuant to section 13389 of the Water Code.

C. State and Federal Laws, Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Lahontan Water Board adopted a Water Quality Control Plan for the Lahontan Region (hereinafter Basin Plan) on March 31, 1995, as amended from time to time. The Basin Plan designates beneficial uses,

[10] Anderson 2011. Anderson, L.W.J. Use of Rhodamine wr as Surrogate for Herbicide Transport in the Tahoe Keys. Final Report to the Lahontan Regional Water Quality Control Board, Project No. R6T-2010-0037.
[11] Anderson 2016. Anderson, L.W.J. Rhodamine wr Dye Applications in the Tahoe Keys. Final Report to the Lahontan Regional Water Quality Control Board, Project No. R6T-2016-0028 (2016).

establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which establishes state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). Beneficial uses applicable to the Tahoe Keys Lagoons, Lake Tahoe and Lake Tallac are as follows:

Table F-3. Surface Water Basin Plan Beneficial Use

Receiving Water Name	Beneficial Use(s)
Tahoe Keys Main Lagoon Lake Tahoe, Lake Tallac Pope Marsh	Municipal and Domestic Supply (MUN); Agricultural Supply (AGR); Ground Water Recharge (GWR); Freshwater Replenishment (FRSH); Water-Contact Recreation (REC-1); Non-Water-Contact Recreation (REC-2); Navigation (NAV); Commercial and Sport Fishing (COMM); Cold Freshwater habitat (COLD); Wildlife Habitat (WILD); Preservation of Biological Habitats of Special Significance (BIOL); Migration of Aquatic Organisms (MIGR); Spawning, Reproduction and Development of Fish and Wildlife (SPWN); Preservation of Rare and Endangered Species (RARE), Water Quality Enhancement (WQE); and Flood Peak Attenuation/Flood Water Storage (FLD).

2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR applied in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.

3. **State Implementation Policy (Policy).** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (Policy). The Policy became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by U.S. EPA through the NTR and to the priority pollutant objectives established by the Water Boards in the Basin Plans. The Policy became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by U.S. EPA through the CTR. The State Water Board adopted amendments to the Policy on February 24, 2005 that became effective on July 13, 2005. The Policy establishes

implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the Policy.

4. **Alaska Rule.** On March 30, 2000, U.S. EPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes (65 Fed. Reg. 24641 [April 27, 2000]). New and revised standards submitted to U.S. EPA after May 30, 2000, must be approved by U.S. EPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to U.S. EPA by May 30, 2000, may be used for CWA purposes, whether or not approved by U.S. EPA.
5. **Antidegradation Policy.** Federal regulation 40 C.F.R. section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Resolution No. 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Lahontan Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. Lake Tahoe is designated as an Outstanding National Resource Water (ONRW). 40 C.F.R. section 131.12(a)(3) specifies that water quality of ONRWs shall be maintained and protected.
6. **Endangered Species Act.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code §2050 et. seq) or the Federal Endangered Species Act (16 U.S.C.A. §1531 et. seq). This Order requires compliance with effluent limitations, receiving water limitations, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.
7. **Consideration of California Water Code Section 106.3.** Water Code section 106.3 establishes a state policy that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes, and directs state agencies to consider this policy when adopting regulations pertinent to water uses described in the section, including the use of water for domestic purposes. This Order implements best management practices and requirements to meet established receiving water objectives that will maintain all designated beneficial uses of water. Therefore, the requirement to consider access to safe, clean and affordable water has been met by this Order.
8. **Impaired Water Bodies on CWA 303(d) List.** The Regional Water Quality Control Board, Lahontan Region (Regional Board) and the Nevada Division of

Environmental Protection (NDEP) developed the bi-state Lake Tahoe Total Maximum Daily Load (TMDL) to identify the pollutants responsible for deep water transparency decline, quantify the major pollutant sources, assess the lake's assimilative capacity, and develop a plan to reduce pollutant loads and restore Lake Tahoe's deep water transparency to meet the established standard. The TMDL presents the pollutant load estimates for all of the identified fine sediment particle, total nitrogen, and total phosphorus sources, including groundwater and shoreline erosion inputs.

The fine sediment particle (FSP) load reduction goal addressed in the Lake Tahoe TMDL allocates loads to major sources of FSP with the goal of reducing FSP that remains in the water column for long periods and can be transported from the nearshore environment of Lake Tahoe to deep water areas of the lake. The Lake Tahoe TMDL does not include explicit load reduction requirements for shoreline erosion and groundwater sources of fine sedimental particles because the Regional Board allowed those sources to continue at their baseline conditions.

This Order does not authorize the discharge of nitrogen or phosphorus to the Tahoe Keys Lagoons. This Order does authorize the discharge of lanthanum-modified clay resulting in deposition of clay mineral deposits (i.e., the mineral rhabdophane) on the bed of treated areas within the Main Lagoon. One commercially available form of lanthanum-modified clay currently consists of lanthanum activated bentonite clay (i.e., Phoslock™) with particle size ranges from 0.5-3mm and would not be classified as fine sediment; however, when mixed with water to form a slurry for application, Phoslock™ forms as fine sediment particles that do affect clarity as they settle through the water column for a short duration (i.e., 24-48 hours) following Phoslock™ application.

The potential discharge of lanthanum-modified clay to control harmful algal blooms (HABs) in treatment areas following treatment for public health protection is negligible with respect to the Lake Tahoe TMDL as discussed below.

i. Lanthanum-modified clay will only be discharged to a treatment area if a HAB outbreak occurs in the treatment area following application event. More than one application of lanthanum-modified clay is not expected to be made to any treatment area. While the discharge may increase one TMDL pollutant (i.e., FSP), it will reduce another TMDL pollutant (i.e., phosphorus).

ii. Assuming all treatment areas require one lanthanum-modified clay treatment, based on baseline phosphorus water column concentrations in the Main Lagoon water, the net result would be approximately 420 pounds (lbs) of the lanthanum-modified clay product, Phoslock™, being applied. This treatment would lock-up approximately 4.2 lbs. of phosphorus in the form of the mineral rhabdophane accounting for approximately 0.03% of estimated groundwater phosphorus inputs to Lake Tahoe. Assuming 1 pound of lanthanum-modified

clay equals one pound of fine sediment, approximately 2 x 10^{16} fine sediment particles would be discharged to the Main Lagoon representing 0.02% of existing shoreline erosion FSP load and 0.004% of total FSP load to Lake Tahoe. Even if all treatment areas require one lanthanum-modified clay treatment, the discharge of FSP is negligible with respect to the Lake Tahoe TMDL.

iii. Rhabdophane is chemically stable at environmentally relevant pH levels (i.e., pH = 5-11) and forms as a highly viscous suspension or gel in treated waters that quickly settles to the bed of treated waters as bed load. On the bed of treated waters, a thin (1-2 mm) colloidal hydrated aluminum silicate layer is deposited as the mineral rhabdophane. The lanthanum-modified clay bedload deposits are a chemical barrier, not physical barrier, that will continue to bind phosphorus released from native sediments. In riverine environments rhabdophane may be become mobilized and carried long distances down river due to hydraulic shear forces acting on bed load sediments; however in static water bodies like the Main Lagoon, remobilization and transport into the deeper water portions of Lake Tahoe is unlikely to occur. The dominant flux of bedload between Lake Tahoe and the Main Lagoon is from the lake nearshore toward the lagoons as shoreward wave action dominates the transport dynamics. For example, the West Channel entrance to the Main Lagoon requires dredging at times to maintain boat passage due to sand buildup at this Main Lagoon entrance. As a result of these factors, the potential for transport of FSP resulting from lanthanum-modified clay discharges to the deeper water portions of Lake Tahoe and affect lake transparency is unlikely.

There are sufficient remaining pollutant load allocation to allow the discharge. Furthermore, the existing discharges are subject to compliance schedules designed to bring the receiving water in compliance with WQS. The discharge is not expected to cause further degradation or pollution of Lake Tahoe's deep water transparency.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

Effluent limitations and toxic and pretreatment effluent standards established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality Related Effluent Limitations), 304 (Information and Guidelines), and 307 (Toxic and Pretreatment Effluent Standards) of the CWA and amendments thereto are applicable to the discharge.

The CWA requires point source dischargers to control the amount of conventional, nonconventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: (1) 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and (2) 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and

narrative water quality criteria to protect the beneficial uses of the receiving water where numeric water quality objectives have not been established.

The CWA mandates the implementation of effluent limitations that are as stringent as necessary to meet water quality standards established pursuant to state or federal law (33 U.S.C., §1311(b)(1)(C); 40 C.F.R. §122.44(d)(1)). NPDES permits must incorporate discharge limits necessary to ensure that water quality standards are met. This requirement applies to narrative criteria as well as to numeric criteria specifying maximum amounts of particular pollutants. Pursuant to 40 C.F.R. section 122.44(d)(1)(i), NPDES permits must contain limits that control all pollutants that "*are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any state water quality standard, including state narrative criteria for water quality.*" Section 122.44(d)(1)(vi) of 40 C.F.R. further provides that *"[w]here a state has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable state water quality standard, the permitting authority must establish effluent limits.*"

With respect to narrative objectives, the Lahontan Water Board must establish effluent limitations using one or more of three specified sources: (1) U.S. EPA's published water quality criteria; (2) a proposed state criterion (i.e., water quality objective) or an explicit state policy interpreting its narrative water quality criteria; or (3) an indicator parameter (i.e., 40 C.F.R. §122.44(d)(1)(vi)(A), (B) or (C)). The Basin Plan contains a narrative objective requiring that: "*All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life.*"

The Basin Plan requires the application of the most stringent objective necessary to ensure that surface water and groundwater do not contain chemical constituents, discoloration, toxic substances, radionuclides, or taste and odor producing substances that adversely affect beneficial uses. The Basin Plan states that material and relevant information, including numeric criteria, and recommendations from other agencies and scientific literature will be utilized in evaluating compliance with the narrative toxicity objective. The Basin Plan also limits chemical constituents in concentrations that adversely affect surface water beneficial uses. The Basin Plan further states that, to protect all beneficial uses, the Lahontan Water Board may apply limits more stringent than MCLs.

A. Discharge Prohibitions

1. In accordance with the Region-wide and Unit/Area-Specific Prohibitions in section 4.1 of the Water Quality Control Plan for the Lahontan Region (Basin Plan), unless a specific exemption is granted in writing by the Lahontan Water Board, the discharge of pesticides to surface or ground waters is prohibited in the Lahontan Region. On January 13, 2022, the Lahontan Water Board adopted Resolution No. R6T-2022-0003 granting an exemption for the discharge of two aquatic herbicides to waters of the Tahoe Keys Main Lagoon and Lake Tallac.

This prohibition is based on the Lahontan Water Board's region-wide waste discharge prohibition for discharge of pesticides to water. The Basin Plan specifies exemption criteria in section 4.1 to allow certain uses of aquatic pesticides.

2. The discharge of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay in a manner different from that described in this Order is prohibited.

   This prohibition is based on 40 C.F.R. 122.21(a), "Duty to Apply," and California Water Code section 13260, which requires filing a Report of Waste Discharge before discharges can occur. Discharges other than those described in the Report of Waste Discharge and authorized by this Order, are prohibited.

3. The discharge of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay shall not create a nuisance as defined in section 13050 of the California Water Code.

   This prohibition is based on Water Code section 13050 for water quality control for achieving water quality objectives.

4. The discharge of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay must not cause, have a reasonable potential to cause, or contribute to a receiving water excursion above any applicable standard or criterion promulgated by U.S. EPA pursuant to section 303 of the CWA, or water quality objective adopted by the State or Lahontan Water Board.

   This prohibition is based on CWA section 301 and California Water Code.

5. The discharge of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay to treatment areas not approved by the Lahontan Water Board Executive Officer (Executive Officer) prior to discharge is prohibited.

   This prohibition constrains the discharge to specific treatment areas approved prior to discharge by the Lahontan Water Board Executive Officer. This prohibition provides that treatment areas to be selected in the year of treatment are evaluated and approved by the Lahontan Water Board Executive Officer prior to the discharge.

6. The discharge of residual aquatic herbicides, Rhodamine WT and lanthanum-modified clay to each approved treatment area for more than one treatment event, and to greater than 14 acres of water surface area in the Tahoe Keys Main Lagoon and 2.9 acres of water surface area in Lake Tallac are prohibited.

   This prohibition constrains the discharge to the areal extents specified. This prohibition limits the discharge spatially consistent with the pesticide discharge prohibition exemption criteria specified in section 4.1 of the Basin Plan.

7. The discharge of residual aquatic herbicides, and Rhodamine WT to the Tahoe Keys Main Lagoon when the waters in the Main Lagoon are flowing to Lake Tahoe is prohibited.

This prohibition limits the discharge to minimize water quality impacts consistent with the pesticide discharge prohibition exemption criteria specified in section 4.1 of the Basin Plan.

The allowable discharge period in Lake Tahoe (i.e., when water flow is from Lake Tahoe to the lagoons, typically May – June is protective of the receiving water of greater Lake Tahoe. The allowable discharge period typically corresponds to the period when the Tahoe Keys Lagoons are filling from snow-melt runoff within the Lake Tahoe Basin. Hydraulic gradients during the snow-melt runoff time period are typically directed from Lake Tahoe into the Tahoe Keys Lagoons minimizing the potential for aquatic herbicide migration out of the lagoons and into Lake Tahoe. In addition, target aquatic plant biomass typically has not reached seasonal maximum density during this time frame. Water quality impacts resulting from treated, decaying plant biomass (e.g., dissolved oxygen demand, nutrient release to the water column) are minimized by minimizing the treated biomass. Minimizing water quality impacts is consistent with the pesticide discharge prohibition exemption criteria specified in section 4.1 of the Basin Plan.

8. The discharge of endothall products with the endothall N,N-dimethylalkylamine salt formulation of the endothall active ingredient is prohibited.

   This prohibition constrains the discharge to the dipotassium salt of endothall formulation of the active ingredient and prohibits discharge of the N,N-dimethylalkylamine salt formulation which poses a greater toxicological risk (both acute and chronic) than the endothall dipotassium salt formulation. Minimizing water quality impacts is consistent with the pesticide discharge prohibition exemption criteria specified in section 4.1 of the Basin Plan.

9. The discharge of triclopyr products with the triclopyr BEE formulation of the triclopyr active ingredient is prohibited.

   This prohibition constrains the discharge to the triclopyr acid (ACID), triclopyr choline salt (COLN), triclopyr triethylamine salt (TEA) formulations of the active ingredient and prohibits discharge of the triclopyr butoxyethyl ester (BEE) formulation which is classified as highly toxic to aquatic organisms on an acute exposure basis. Minimizing water quality impacts is consistent with the pesticide discharge prohibition exemption criteria specified in section 4.1 of the Basin Plan.

10. The discharge of adjuvants* or surfactants used to increase the effectiveness of aquatic herbicides on target plants is prohibited.

    This prohibition is based on 40 C.F.R. 122.21(a), “Duty to Apply,” and California Water Code section 13260, which requires filing a Report of Waste Discharge before discharges can occur. Discharges other than those described in the Report of Waste Discharge and authorized by this Order, are prohibited.

11. The discharge of Rhodamine WT not associated with an aquatic herbicide application event is prohibited.

This prohibition is based on 40 C.F.R. 122.21(a), "Duty to Apply," and California Water Code section 13260, which requires filing a Report of Waste Discharge before discharges can occur. Discharges other than those described in the Report of Waste Discharge and authorized by this Order, are prohibited.

12. The discharge of lanthanum-modified clay not associated with an aquatic herbicide, UV light or laminar flow aeration treatment event is prohibited.

    This prohibition is based on 40 C.F.R. 122.21(a), "Duty to Apply," and California Water Code section 13260, which requires filing a Report of Waste Discharge before discharges can occur. Discharges other than those described in the Report of Waste Discharge and authorized by this Order, are prohibited.

13. Where any numeric or narrative water quality objective contained in the Basin Plan is already being violated, the discharge of waste that causes further degradation or pollution is prohibited.

    This prohibition is a regionwide waste discharge prohibition specified in section 4.1 of the Basin Plan. This prohibition is consistent with 40 C.F.R. section 131.12(a)(3) which specifies that water quality of ONRWs shall be maintained and protected.

B. Effluent Limitations

1. Technology-Based Effluent Limitations

Section 301(b) of the CWA and implementing U.S. EPA permit regulations at 40 C.F.R. section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements in accordance with 40 C.F.R. section 125.3.

The CWA requires that technology-based effluent limitations be established based on several levels of controls:

a. Best practicable treatment control technology (BPT) represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.

b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including biochemical oxygen demand (BOD), TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering a two-part reasonableness test. The first test compares the relationship between the costs of attaining a reduction in effluent discharge and the resulting benefits. The second test examines the cost

and level of reduction of pollutants from the discharge from publicly owned treatment works to the cost and level of reduction of such pollutants from a class or category of industrial sources. Effluent limitations must be reasonable under both tests.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires U.S. EPA to develop effluent limitations, guidelines and standards (ELGs) representing application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 C.F.R. section 125.3 authorizes the use of BPJ to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial categories and/or pollutants of concern. Where BPJ is used (i.e., where no applicable ELGs exist), the Lahontan Water Board must consider specific factors outlined in 40 C.F.R. section 125.3.

The intent of technology-based effluent limitations in NPDES permits is to require a minimum level of treatment of pollutants prior to discharge based on available treatment technologies while allowing the Discharger to use any available control technique to meet the limitations. In the case of aquatic herbicide residue, lanthanum-modified clay and Rhodamine WT discharges, U.S. EPA has not developed national effluent limitations guidelines and standards other than the requirement to follow the labels when applying pesticides. Aquatic herbicides and lanthanum-modified clay are designed for direct application to water bodies to remedy a known water quality concern, in this case, aquatic invasive weed infestations and elevated phosphorus concentrations in the water body. Rhodamine WT is designed for direct application to the water body to trace environmental transport of aquatic herbicide residues as a monitoring measure intended to trigger additional BMPs to protect beneficial uses. As a result, it is not appropriate to establish technology-based effluent limitations for these discharges. Therefore, the effluent limitations contained in this Order are narrative and include requirements to develop and implement best management practices to comply with numeric receiving water limitations.

The BMPs required herein constitute BAT and BCT and will be implemented to minimize the area and duration of impacts caused by the discharge of residual aquatic herbicides, lanthanum-modified clay and Rhodamine WT in the treatment area and to allow for restoration of water quality and protection of beneficial uses of the receiving waters to pre-application quality following completion of a treatment event. In addition, the Discharger must provide certification by a qualified biologist that the receiving water beneficial uses have been restored to pre-project conditions.

The development of BMPs provides the flexibility necessary to establish controls to minimize the areal extent and duration of impacts caused by the discharge of residual aquatic herbicides, lanthanum-modified clay and Rhodamine WT. This

flexibility allows the Discharger to implement appropriate BMPs for different types of applications and treatment area conditions.

For aquatic herbicides, much of the BMP development has been incorporated into the aquatic herbicide regulation process by U.S. EPA and DPR. The Discharger must utilize a DPR licensed, with a Category F certificate for aquatic herbicide application, aquatic herbicide applicator when conducting treatment events per the requirements of this Order. The aquatic herbicide use must be consistent with the aquatic herbicide label instructions.

U.S. EPA and DPR scientists review aquatic herbicide labels to ensure that a product used according to label instructions will cause no harm (or “adverse impact”) on non-target organisms that cannot be reduced (or “mitigated”) with protective measures or use restrictions. Many of the label directions constitute BMPs to protect water quality and beneficial uses. Label directions may include: precautionary statements regarding toxicity and environmental hazards; directions for proper handling, dosage, application, and disposal practices; prohibited activities; spill prevention and response measures; and restrictions on type of water body and flow conditions. Additional BMPs required in this Order provide additional protections to protect receiving waters not typically employed for aquatic weed control projects including measures to mitigate aquatic herbicide migration to receiving waters, measures to respond to harmful algal bloom outbreaks within treated areas following treatment events, and measures to ensure compliance with the Basin Plan dissolved oxygen water quality objective in treatment areas following the treatment event and in receiving waters at all times.

For Rhodamine WT discharges, the BMPs required in this Order will be implemented to minimize the area and duration of impacts caused by the discharge of Rhodamine WT in the treatment area and to allow for restoration of water quality and protection of beneficial uses of the receiving waters to pre-application quality following completion of a treatment event.

For lanthanum-modified clay discharges, the BMPs required in this Order will be implemented to minimize the area and duration of impacts caused by the discharge of lanthanum-modified clay in the treatment area and to allow for restoration of water quality and protection of beneficial uses of the receiving waters to pre-application quality following completion of a treatment event.

The APAP and LMCAP describe the time period for application. This information is needed to ensure that the application of aquatic herbicides, Rhodamine WT or lanthanum-modified clay does not occur in times of heavy recreational use as a precaution to limit public exposure or during storm events causing excessive volume fluctuations in the receiving waterbody that would require altering product application rates.

The APAP and LMCAP describe the application rates for each aquatic herbicide, Rhodamine WT and lanthanum-modified clay product discharged. The information in the APAP is needed to ensure that the aquatic herbicide and rhodamine dye

application rates do not exceed product label requirements or the proposed target treatment concentrations for the herbicides or rhodamine dye. The LMCAP information is needed to ensure that only enough lanthanum-modified clay is used to bind the free phosphorus in the waterbody and applications do not result in lanthanum in receiving waters above background concentrations.

The APAP and LMCAP describe BMPs necessary to prevent residual aquatic herbicide, lanthanum-modified clay and Rhodamine WT discharges to receiving waters outside of treatment areas. The application should be timed during periods when conditions minimize potential for residual aquatic herbicide to migrate outside of treatment areas, such as avoiding precipitation events. One control method to prevent the discharges from migrating to receiving waters will be the use of barrier curtains. This Order does not replace or excuse any applicable CWA §404 and §401 requirements associated with barrier curtain placement.

The Discharger must monitor treatment areas and receiving waters in compliance with Attachment E. This monitoring gives the Discharger the information that is needed on the effectiveness of the application and the overall effectiveness of the BMPs. Using this information, the Discharger can adapt and modify their practices as warranted to protect water quality and beneficial uses.

The APAP and LMCAP describe “good-housekeeping” measures to prevent spills, leaks, and unintended discharges. Spills, leaks, and unintended discharges result in an unintended application of aquatic herbicides, lanthanum-modified clay and Rhodamine WT to the waterbody which would constitute a violation of this Order. Spill and leaks of aquatic herbicide, lanthanum-modified clay and Rhodamine WT products in staging areas could result in unintended discharges during precipitation events.

The APAP and LMCAP describe personnel training for the proper application of aquatic herbicides, lanthanum-modified clay and Rhodamine WT. Training is especially important for site personnel responsible for the application of these products because they are the ones implementing the BMPs to protect water quality. Successful implementation of BMPs is dependent on effective training of site personnel. Without successful implementation, water quality would not be adequately protected.

The Discharger submitted an APAP on April 30, 2021. The APAP addresses many of the requirements noted above; however, the LMCAP and implementation plans for all BMPs required by this Order were not included in the April 30, 2021 submittal. Amendments to the APAP will be required to be submitted prior to the discharge and incorporate year of treatment aquatic plant surveys to: 1) select final treatment areas that have the least coverage of non-target aquatic plants and highest coverage of target aquatic plants and 2) to select which aquatic herbicide will be used in each treatment area based on target aquatic plants present in each treatment area in order to minimize impacts to non-target plant species. The APAP amendments addressing requirements of this Order are required to be submitted for Lahontan

Water Board Executive Officer approval within the time frames noted in section VI.D of this Order. The LMCAP addressing requirements of this Order is required to be submitted for Lahontan Water Board Executive Officer approval within the time frames noted in section VII.C of this Order. The minimum required BMPs in this Order are summarized in sections VI.C and VII.B.

2. Water Quality-Based Effluent Limitations (WQBELs)

a. **Scope and Authority**

Section 122.44(d)(1)(i) of 40 C.F.R. mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) U.S. EPA criteria under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 C.F.R. section 122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

Section 122.44(k)(3) of 40 C.F.R. allows the use of other requirements such as BMPs in lieu of numeric effluent limits if the latter are infeasible. It is infeasible for the Lahontan Water Board to establish numeric effluent limitations in this Order because:

i. The application of aquatic herbicides is not necessarily considered a discharge of pollutants according to the *National Cotton Council of America v. U.S. EPA*[12] and other applicable case law. The Sixth Circuit Court of Appeals ruled that the residues of the pesticides associated with the application of pesticides at, over, or near water constitute pollutants within the meaning of the CWA and that the discharge must be regulated under an NPDES permit.

ii. This Order regulates the discharge of residual aquatic herbicides used for aquatic weed control to waters of the United States, lanthanum-modified clay used for control of phosphorus concentrations in waters of the United States, and Rhodamine WT for tracing transport of aquatic herbicide residues to guide BMP implementation to protect receiving water quality and beneficial uses. Herbicide products with DPR registration labels,

[12] 553 F.3d 927 (6th Cir., 2009)

lanthanum-modified clay, and Rhodamine WT products explicitly allow direct application to water bodies. In aquatic herbicide applications to control invasive aquatic weeds, the aquatic herbicide residue or degradation byproduct that is deposited in waters of the United States is a pollutant.

iii. The point at which an aquatic herbicide becomes a residue is not precisely known and varies depending on the type of aquatic herbicides, application method and quantity, water chemistry, etc. Therefore, in the application of aquatic herbicides, the exact effluent is unknown.

iv. For the application of lanthanum-modified clay, no known water quality criterion has been promulgated for lanthanum or its byproducts.

v. Aquatic herbicides, lanthanum-modified clay and Rhodamine WT are designed for direct application to water. It would be impractical to provide effective treatment of the aquatic herbicides, lanthanum-modified clay and Rhodamine WT prior to discharge to protect water quality given treatment may render these products useless for their intended purposes.

Therefore, as stated in Technology-Based Effluent Limitations, Section V.B.1 above, the effluent limitations contained in this Order are narrative and require development and implementation of BMPs to comply with receiving water limitations.

b. **Receiving Water Beneficial Uses**

Aquatic herbicide, lanthanum-modified clay and Rhodamine WT applications for the aquatic weed control methods test project may potentially deposit residual aquatic herbicides, lanthanum residuals and Rhodamine WT residuals to receiving waters. Beneficial uses of receiving waters for discharges covered under this Order are specified in Table F-3. Requirements of this Order implement the Lahontan Basin Plan.

c. **Determining the Need for WQBELs**

Water quality standards include Basin Plan beneficial uses and narrative and numeric water quality objectives, State Water Board adopted standards, and federal standards, including the CTR and NTR, as well as antidegradation policies. The Basin Plan includes numeric site-specific water quality objectives and narrative objectives for toxicity, chemical constituents, and tastes and odors. The narrative toxicity objective states: "*All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life.*" With regard to the narrative water quality objectives for chemical constituents, the Basin Plan states that waters shall not contain chemical constituents in concentrations that adversely affect beneficial uses. At minimum, waters *"designated as MUN shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) or secondary maximum contaminant level (SMCL)*" in

title 22 of the California Code of Regulations. The narrative tastes and odors objective states: "*Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish or other edible products of aquatic origin, that cause nuisance, or that adversely affect the water for beneficial uses.*"

Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. As stated in Technology-Based Effluent Limitations, Section V.B.1, above, the effluent limitations contained in this Order are narrative and include requirements to develop and implement BMPs to comply with receiving water limitations.

d. **Antidegradation Policy**

State and federal antidegradation policies require that existing water quality be maintained unless degradation is justified based on specific findings. State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality in California*, sets forth California's antidegradation policy. Consistent with 40 C.F.R section 131.12, Resolution No. 68-16 incorporates the federal antidegradation policy. In 1980, pursuant to federal antidegradation regulations (40 Code of Federal Regulations § 131.12), the State Water Board designated Lake Tahoe as an Outstanding National Resource Water (ONRW). Pursuant to 40 C.F.R. section 131.12(a)(3), where high quality waters constitute an Outstanding National Resource, that water quality shall be maintained and protected. The Basin Plan implements, and incorporates by reference, the state and federal antidegradation policies. Permitted discharges must be consistent with these policies.

State antidegradation policy in State Water Board Resolution No. 68-16, "Statement of Policy With Respect to Maintaining High Quality of Waters in California", specifies in substantial part that: "Whenever the existing quality of water is better than the quality established in policies… such existing high quality will be maintained until it has been demonstrated to the state that any change will be consistent with maximum benefit to the people of the state, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies. "Any activity…which proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the state will be maintained." The Administrative Procedures Update titled *Antidegradation Policy Implementation for NPDES Permitting* (APU 90-004, July 2, 1990) provides guidance for Regional Boards implementing State Water Board Resolution No. 68-16 and the

Federal Antidegradation Policy, as set forth in 40 CFR 131.12 as applied to the NPDES permitting process.

Federal antidegradation policy specifies for ONRWs (i.e., Tier 3 Waters): "Where high quality waters constitute an Outstanding National Resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected." Federal guidance on implementing federal antidegradation policy is contained in the U.S. EPA Water Quality Standards Handbook (EPA-823-B-12-002, 2012). U.S EPA in Section 4.7 of the USEPA Water Quality Standards Handbook notes that the state can allow activities that result in temporary and short-term changes in the water quality of an ONRW (i.e., Tier III water) provided those changes do not permanently degrade water quality or result in water quality lower than that necessary to protect the existing uses in the ONRW. The term "temporary and short-term" is undefined and is dependent on the activity involved. However, the USEPA Water Quality Standards Handbook notes that in rather broad terms, "EPA's view of temporary is weeks and months, not years. The intent of EPA's provision clearly is to limit water quality degradation to the shortest possible time."

As indicated in the antidegradation analysis in Attachment G, the permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

CWA section 303(a-c), requires states to adopt water quality standards, including criteria necessary to protect beneficial uses. *The Porter-Cologne Water Quality Control Act defines "water quality objectives" as the allowable "limits or levels of water quality constituents or characteristics that are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area."* The Basin Plan includes numeric and narrative water quality objectives that are protective of multiple beneficial uses identified in the Basin Plan for Lake Tahoe and Lake Tallac.

The discharge of residual aquatic herbicides, lanthanum-modified clay and Rhodamine WT must meet applicable water quality criteria and objectives. The receiving water limitations ensure that an application event does not result in an exceedance of a water quality standard in the receiving water.

To protect all designated beneficial uses of the receiving water, the most stringent (lowest) and appropriate (to implement the CTR criteria and WQOs in the Basin Plans) criteria should be selected as the permit limitation for a particular water body and constituent. In many cases, water quality standards include narrative, rather than numerical, water quality objectives. In such cases, numeric water quality limits

from the literature or publicly available information may be used or developed from such information to ascertain compliance with water quality criteria.

Basin Plan water quality objectives include objectives for chemical constituents, toxicity, and tastes and odors. The toxicity objective requires that surface water be maintained free of toxic substances in concentrations that produce detrimental physiological responses in humans, plants, animals, or aquatic life. The chemical constituent objective requires that surface water and groundwater not contain chemical constituents in concentrations that adversely affect any beneficial use or that exceed the MCLs set forth in title 22, California Code of Regulations. The tastes and odors objective states that surface water and groundwater shall not contain taste- or odor-producing substances in concentrations that cause nuisance or adversely affect beneficial uses.

This Order contains receiving water limitations based on the Basin Plan's numerical and narrative water quality objectives for bio-stimulatory substances, chemical constituents, color, temperature, floating material, settleable substances, suspended material, tastes and odors, and toxicity. This Order also requires compliance with any amendment or revision to the water quality objectives contained in the Basin Plan adopted by the State Water Board or Lahontan Water Board subsequent to adoption of this Order. The discharger must initiate receiving water compliance monitoring a minimum of seven (7) days following the application event consistent with the requirements of section 4.1 of the Basin Plan. The discharger must demonstrate compliance with receiving water limitations within 21 days after the application event. The 21-day time period to achieve compliance represents the treatment duration and is established based on endothall and triclopyr half-lives and the number of days following an application event endothall and triclopyr are at concentrations in treatment areas that are lethal to target aquatic weeds. Compliance with the receiving water limitations will be determined by assessment of the results of the monitoring conducted in accordance with Attachment E.

1. **Receiving Water Limitations**

   The instantaneous maximum receiving water limitations are based on water quality objectives adopted by the Lahontan Water Board. This Order provides receiving water limitations based on the most stringent water quality criteria/objectives to protect all designated beneficial uses of the receiving water. The rationale for each chemical specific limitation is summarized below.

   Endothall: The 100 µg/L endothall receiving water limit is based on the established maximum contaminant level (MCL) for endothall specified in title 22, California Code of Regulations, division 15, chapter 15, article 5.5, § 64444(a), maximum contaminant levels for volatile organic chemicals. Endothall will begin to degrade from the time of initial application and dilution will occur as endothall residuals migrate away from the treatment areas. Field dissipation studies indicate median disappearance time for endothall acid in lakes and reservoirs of

seven days[13]. The proposed test sites are bounded by untreated receiving waters that do not receive a discharge. The volume of receiving water in the Main Lagoon that is available for dilution is approximately four-fold (approximately 140 acre-feet treated water versus approximately 600 acre-feet of untreated receiving waters). The nearest community public drinking water intakes in Lake Tahoe are near Lakeside Marina approximately four miles to the east of the West Channel entrance to Lake Tahoe from the Main Lagoon. The nearest private drinking water sources are reported to be located in the Jameson Beach community north of Pope Marsh approximately one mile west of the West Channel entrance[14]. The estimated concentration of endothall at the nearest drinking water intake is less than 0.9 µg/L. As a result of degradation and dilution of endothall, endothall concentrations would be below the receiving water limit if endothall migrates outside of the Main Lagoon to potable water intakes which ensures the MUN water quality objective is protected.

Triclopyr: The chemical specific receiving water limitation for triclopyr was derived from the narrative toxicity objective. The 400 µg/l triclopyr receiving water limit is based on triclopyr pesticide tolerances, specifically triclopyr dietary exposure from drinking water published in the Federal Register (https://www.federalregister.gov/d/2016-03910/p-42).[15] U.S. EPA determined that for acute and chronic dietary risk assessments, a receiving water concentration value of 400 µg/l at potable water intakes near triclopyr application areas is protective for dietary exposure. Triclopyr will begin to degrade from the time of initial application and dilution will occur if triclopyr residuals migrate away from treatment areas. Field dissipation studies conducted in static and non-static lakes indicates dissipation half-life of triclopyr acid ranges from 0.5-5 days in non-static lakes and 7-9 days in static lakes[16].The dilution available within the Main Lagoon receiving waters and the proximity of the discharge to drinking water intakes noted above for endothall also apply to triclopyr. The estimated concentration of triclopyr at the nearest drinking water intake is less than 0.9 µg/L. As a result of degradation and dilution of triclopyr, triclopyr concentrations would be below the receiving water limit if triclopyr migrates outside of the Main Lagoon to potable water intakes which ensures the MUN water quality objective is protected.

Rhodamine WT: The chemical specific receiving water limitation for Rhodamine WT is derived from the narrative toxicity objective. The 10 ug/l receiving water limit for Rhodamine WT is based on National Sanitation Foundation (NSF) Standard 60[17]. The NSF Standard 60 is an industry standard and certification or

[13] *Environmental Fate and Ecological Risk Assessment of Endothall – Revised*, April 22, 2005, USEPA, EPA-HQ-OPP-2009-0081-0143
[14] Draft EIR/EIS for the Tahoe Keys Lagoons Aquatic Weed Control Methods Test, July 6, 2020.
[15] Triclopyr; Pesticide Tolerances, Federal Register, Vol. 81, No. 37, p. 9353, February 25, 2016
[16] *Triclopyr (Acid, Choline salt, TEA salt, BEE): Draft Ecological Risk Assessment for Registration Review,* September 30, 2019, USEPA, EPA-HQ-OPP-2014-0576-0026

[17] NSF/ANSI Standard 60: Drinking Water Treatment Chemicals – Health Effects

compliance with it is required for nearly all water treatment chemical manufacturers selling chemicals utilized in drinking water systems in the U.S. The National Sanitation Foundation (NSF) Standard 60 establishes a concentration limit of 10 ug/l for Rhodamine WT near potable water intakes. The NSF Standard 60 also establishes a concentration limit of 0.1 ug/l in drinking water. The half-life of Rhodamine WT (Rhodamine WT) is temperature dependent and ranges from 15.3 to 21.9 days based on studies under natural sunlight at 30 degrees north latitude[18] The Rhodamine WT receiving water limitation in this Order is based on the 10 ug/l near drinking water system intake limit and provides for dilution and degradation as described above for endothall and triclopyr to ensure concentrations of Rhodamine WT would be below the receiving water limit if Rhodamine WT migrates outside of the Main Lagoon to potable water intakes which ensures the MUN water quality objective is protected.[19]

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

CWA section 308 and 40 C.F.R. sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Lahontan Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring, reporting, and recordkeeping requirements that implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

Water Code section 13267 specifies that the burden, including costs, of technical or monitoring program reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. The Lahontan Water Board finds that the costs associated with the monitoring and reporting requirements in this Order are necessary to characterize receiving water quality, determine compliance with applicable effluent limitations (i.e., BMP implementation) and receiving water limitations and protect beneficial uses.

A. MRP Goals

The goals of the MRP are to:

1. Identify and characterize aquatic herbicide, lanthanum-modified clay and Rhodamine WT application projects conducted by the Discharger;
2. Determine compliance with the receiving water limitations and other requirements specified in this Order;
3. Evaluate the effectiveness of BMPs;

[18] PubChem (Chemical Id# 37718), https://pubchem.ncbi.nlm.nih.gov/compound/Rhodamine-WT
[19] Announcement of the Drinking Water Contaminant Candidate List, Federal Register V63, No. 40, Part III, Page 10274, 10283, March 2, 1998.

4. Assess the chemical, physical, and biological impacts on receiving waters resulting from aquatic herbicide, lanthanum-modified clay and Rhodamine WT applications;
5. Assess the overall health and evaluate trends in receiving water quality after the permitted discharges;
6. Demonstrate that water quality of the receiving waters following completion of the aquatic herbicide, lanthanum-modified clay and Rhodamine WT applications is restored to pre-application conditions; and
7. Ensure that monitoring is representative of all aquatic herbicide, lanthanum-modified clay and Rhodamine WT applications conducted by the Discharger.

   The MRP in the Attachment E of this Order is considered as baseline monitoring requirements. The monitoring by Discharger must meet applicable requirements of this Order. Any additional water quality monitoring conducted beyond that required by this Order must be submitted in the Annual Reports required per Attachment E.

B. Effluent Monitoring

Pursuant to the requirements of 40 C.F.R. section 122.44(i), effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and assess the impacts of the discharge on the receiving water and groundwater.

The application of pesticides for pest control is not necessarily considered a discharge of pollutants according to the *National Cotton Council of America v. U.S. EPA* decision and other applicable case law. The regulated discharge is the discharge of residual pesticides (i.e. residual aquatic herbicides). At what point the pesticide becomes a residue is not precisely known. Therefore, in the application of pesticides, the exact effluent is not known. Thus, the effluent monitoring requirement is not applicable for aquatic herbicide applications.

In addition, aquatic herbicides, lanthanum-modified clay and Rhodamine WT are designed for direct application to water. It would be impractical to provide effective treatment of the aquatic herbicides, lanthanum-modified clay and rhodamine dye prior to discharge to protect water quality given treatment may render these products useless for their intended purposes.

C. Receiving Water Monitoring

Receiving water monitoring is necessary to determine the impacts of the discharge on the receiving waters, and to evaluate compliance with receiving water limitations that are intended to protect beneficial uses. This Order requires receiving water monitoring in receiving waters adjacent to treatment areas and within treatment areas after the treatment event.

To ensure that beneficial uses of waters of the state are protected, the Basin Plan lists numeric objectives that are applicable to: all surface waters and specific applicable receiving surface waters. Waterbody-specific objectives also apply to waters that are tributary to the waterbody specified for the numeric objective. This is called the "tributary rule." Numeric objectives that apply to the Tahoe Keys Lagoons include numeric objectives that are applicable to Lake Tahoe. These receiving water limitations serve to protect the beneficial uses designated for the receiving waters that will be impacted by the discharge. This Order includes receiving water monitoring requirements for temperature, pH, turbidity, dissolved oxygen, and chemicals/chemical residues (Endothall acid, endothall dipotassium salt, triclopyr acid, TCP, 3,6-DCP, Rhodamine WT, phosphorus and lanthanum and total suspended solids).

D. Other Monitoring Requirements

1. Best Management Practices (BMP) Plan Reporting

This Order requires monitoring and reporting of BMP effectiveness, implementation details and certification by applicators that the BMP Plans to meet the requirements of this Order are being implemented.

2. Biological Monitoring

This Order requires pre- and post-treatment macroinvertebrate and aquatic vegetation monitoring with post-treatment monitoring conducted no later than two years after the application event to characterize the impacts of applications on aquatic life uses in the receiving waters.

3. Sediment Monitoring

This Order requires pre- and post-treatment sediment monitoring with post-treatment monitoring conducted and reported no later than two years after the application event to characterize the impacts of aquatic herbicide discharges on sediment quality in the receiving waters.

3. Visual Observations

The Order requires visual monitoring at all treatment sites to determine, in conjunction with physical and chemical monitoring, compliance with receiving water limitations V.A.2.g, V.A.2.I, and V.A.2.q.

VII. RATIONALE FOR AQUATIC PESTICIDE, LANTHANUM-MODIFIED CLAY AND RHODAMINE AQUATIC DYE USE REQUIREMENTS

A. Application Schedule

The Discharger must provide the contact phone number or other specific contact information or online resource containing schedule information to all persons who request the Discharger's application schedule

B. Application Notification Requirements

Section 4.1 of the Basin Plan, pesticide discharge prohibition exemption criteria, and this Order require the Discharger to notify potentially affected parties who may use the potentially affected water for any beneficial use. The notification must include any associated water use restrictions or precautions. In addition, the Discharger must also: 1) provide via certified mail, or equivalent, notice of the proposed pesticide applications to water purveyors whose source water relies on the surface water and/or groundwater wells designated under the direct influence of the surface water; 2) provide to the Lahontan Water Board comments written from, and written responses to, the water purveyors notified pursuant to the notification; and 3) provide water purveyors and the Lahontan Water Board an estimate of the maximum foreseeable concentrations of pesticide components in the nearest surface water intake used for drinking water supplies located within the receiving waters.

C. APAP and LMCAP

This Order contains narrative effluent limitations implemented with the minimum BMPs described in the sections VI.C and VI.B of this Order. See Section VI, Rationale for Effluent Limitations and Discharge Specifications for a more detailed explanation of how effluent limits are implemented with BMPs for discharges of this nature.

D. APAP and LMCAP Processing, Approval, and Modifications

The Discharger must submit two APAP amendments. The first APAP amendment addressing items VI.C.1-3 must be submitted <u>within 45 days after</u> the adoption date of this Order. The Second APAP amendment addressing items VI.C.4-6 must be submitted <u>30 days before</u> the expected day of first application of aquatic herbicides and Rhodamine WT.

The first APAP amendment must be submitted within 45 after the adoptions of this Order and include the following information Best Management Practices (BMPs): 1) BMPs to prevent pesticide migration to Lake Tahoe, 2) BMPs to prevent spills while handling the herbicide, including a hazardous material response team that will be under agreement to respond to possible spill (provide the name of the contracted company 30 days prior), 3) require that application staff be trained on the pesticide to be used at least 30 days prior to application, 4) BMPs to prevent a harmful algal bloom and mitigation measures, and 5) BMPs to prevent low dissolved oxygen content in the water and mitigation measure to be taken.

The second APAP amendment is required 30 days prior to expected application and must provide the following information: 1) the final map of the proposed treatment areas and 2) proposed dates of treatment for each treatment site.

Upon receipt of each of the two amendments to the APAP, Lahontan Water Board staff will review the plan for completeness. If Lahontan Water Board staff determines the amendments to the APAP are acceptable, staff will recommend to the Executive Officer approval of the amendments to the APAP. If either of the amendments to the APAP are determined to be incomplete, the Discharger must address Lahontan Water

Board staff comments and resubmit the amendment. The amendment must be approved by the Executive Officer prior to any aquatic herbicide and Rhodamine WT applications.

E. Application Logs

Application logs to record all aquatic herbicide, lanthanum-modified clay and Rhodamine WT applications is necessary. These application logs will help Dischargers and the Lahontan Water Board staff to investigate any exceedance of receiving water limitations.

VIII. RATIONALE FOR PROVISIONS

A. Standard Provisions

1. Standard Provisions in Attachment D

Standard Provisions, which apply to all NPDES permits in accordance with 40 C.F.R. section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 C.F.R. section 122.42, are provided in Attachment B. The Discharger must comply with applicable standard provisions and with those additional conditions that are applicable under 40 C.F.R. section 122.42.

Sections 122.41(a)(1) and (b) through (n) of 40 C.F.R. establish conditions that apply to all state-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. Section 123.25(a)(12) of 40 C.F.R. allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 C.F.R. Section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 C.F.R. section 122.41(j)(5) and (k)(2) because the enforcement authority under the California Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference California Water Code section 13387(e).

B. Special Provisions

1. Reopener Provisions

This Order may be reopened for modification and reissuance in accordance with the provisions contained in 40 C.F.R. §122.62, and for the following reasons:

a. Violation of any terms or conditions of this Order;

b. Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts;

c. A change in any condition that requires either a temporary or permanent reduction or elimination of the discharge subject to waste discharge requirements;

d. Promulgation of new or amended regulations by the State Water Board, Lahontan Water Board or U.S. EPA, including revisions to the Basin Plan;

e. Receipt of U.S. EPA guidance concerning regulated activities, judicial decision, or in accordance with the provisions of 40 CFR 122, 123, 124, and 125;

f. If U.S. EPA develops biological opinions regarding pesticides included in this Order, this Order may be re-opened to add or modify Receiving Water Limitations for residual pesticides of concern, if necessary.

The filing of a request by the Discharger for modification, revocation and reissuance or termination of this Order or a notification of planned change in or anticipated noncompliance with this Order does not stay any condition of this Order from the Lahontan Water Board.

2. Special Studies, Technical Reports, and Additional Monitoring Requirements

a. Additional Investigation

This Order requires Dischargers to conduct additional investigations if the monitoring results exceed the receiving water monitoring limitations. These investigations are necessary in order to address the exceedance caused by the aquatic herbicide, lanthanum-modified clay or Rhodamine WT application and meet the Order's limitations and requirements including the Basin Plan's narrative water quality objective of no toxics in toxic amount.

b. Qualified Biologist Certification Following Project Completion

Section 4.1 of the Basin Plan, pesticide discharge prohibition exemption criteria, and this Order require the Discharger to assess the restoration of non-target aquatic life and benthic communities within the treated waters within two years post-discharge, and if, based on the monitoring data, the evidence demonstrates, certify in writing that all affected non-target biological communities have been fully restored to pre-project conditions. The certification is required to be accompanied by a report detailing the pre-project and post-project monitoring, including detailed explanation of the assessment methods used and the rationale for the certification.

3. Corrective Action

If receiving water limitations are exceeded, the Discharger must assess the cause of exceedance and take appropriate actions if necessary to prevent occurrence or to abate the problem.

Low dissolved oxygen in the water could occur from the decay of large amounts of biomass. If the Project is conducted early in the growing season, as proposed, it will kill plants with the minimal amount of biomass, minimizing the potential of depressed dissolved oxygen in the water. The Discharger will be monitoring the dissolved oxygen content in all treatment area and controls site. If the dissolved oxygen falls to below 5mg/L (for a mean of seven days) and below the control site's dissolved oxygen, then the Discharger must abate the condition. The Discharger has proposed mechanical aeration as one method to be implemented to increase the dissolved oxygen in the water.

HAB are presently being detected at warning and cautions levels in the Tahoe Key Lagoons for 2019 and 2020. Decaying biomass could increase nutrients in the water column and stimulate either a HAB outbreak, earlier outbreak or increase the intensity of the bloom. For inland waters one of the limiting factors is the availability of phosphorus in the water column. The Discharger has proposed the use of lanthanum modified clay, if phosphorus levels are elevated in the treatment sites over levels of the control sites and the HAB visual and testing indicate presence above warning levels.

IX. COMPLIANCE DETERMINATION

This Order specifies that compliance be based on event and post-event sampling results. The minimum effective concentration and time needed to effectively kill or control target aquatic weeds varies due to site-specific conditions, such as target species, water chemistry, and type of aquatic herbicides used. This Order requires the discharger to demonstrate compliance with receiving water limitation at all times outside of the treatment areas. The discharger must demonstrate compliance with receiving water limitations within 21 days after the application event. This demonstration must use sample reporting protocols defined in Attachment E and Attachment A of this Order.

For purposes of reporting and enforcement by the Lahontan Water Board, the Discharger shall be determined to be out of compliance with receiving water limitations if residual aquatic herbicide, Rhodamine WT or lanthanum-modified clay discharges cause the pollutant concentrations, as reflected by monitoring sample results, to exceed receiving water limitations established in this Order and greater than or equal to the reporting level (RL).

A. Instantaneous Maximum Receiving Water Limitations

If the analytical result of a single grab sample is higher than the instantaneous maximum receiving water limitation for a parameter, the Discharger may be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken different times within a calendar day that both exceed the instantaneous maximum receiving water limitation would result in two instances of non-compliance with the instantaneous maximum receiving water limitation). Duplicate samples taken at the same time and location for QA/QC purposes will not be considered in determining the total number of exceedances. QA/QC includes splitting a sample and/or collection of duplicate samples for analysis by a different laboratory. Reanalysis of samples after re-calibration and maintenance of field test instruments will not be considered in determining the total number of exceedances.

X. PUBLIC PARTICIPATION

The Lahontan Water Board has considered the issuance of this WDR that will serve as an NPDES permit for the Tahoe Keys Lagoons Aquatic Weed Control Methods Test Project. As a step in the WDR adoption process, the Lahontan Water Board staff developed a tentative and proposed WDR and has encouraged public participation in the WDR adoption process.

A. Notification of Interested Parties

The Lahontan Water Board notified the Discharger and interested agencies and persons of its intent to prescribe a WDR for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through **web posting on the Lahontan Water Board website** on September 15, 2021.

The public had access to the agenda and any changes in dates and locations through the Lahontan Water Board's website at: http://www.waterboards.ca.gov/lahontan

B. Written Comments

Interested persons were invited to submit written comments concerning the tentative and proposed WDR as provided through the notification process. Comments were due either in person or by mail to the Executive Officer at the Lahontan Water Board at the address on the cover page of this Order.

To be fully responded to by staff and considered by the Lahontan Water Board, the written comments were due at the Lahontan Water Board office by 5:00 p.m. on Nov 1, 2021**.**

C. Public Hearing Opportunity

The Lahontan Water Board posted a Notice of a Public Hearing announcement on the Water Board's website on December 9, 2021 and a public hearing was held at the January 12-13, 2022 Board meeting.

The Lahontan Water Board held a public meeting and provided an opportunity for interested parties to testify in a public hearing on the proposed WDR and permit during its regular Board meeting on the following date and time and at the following location:

Date:	**January 12, 2022, and if necessary, January 13, 2022.**
Time:	**10:00 am**
Location:	**Video and Teleconference Only**

Interested persons were invited to attend. At the public meeting, the Lahontan Water Board heard any testimony pertinent to the discharge, WDRs, and permit.

D. Reconsideration of Waste Discharge Requirements

Any aggrieved person may petition the State Water Board to review the decision of the Lahontan Water Board regarding the final WDR. The petition must be received by the State Water Board at the following address within 30 calendar days of the Lahontan Water Board's action:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

For instructions on how to file a petition for review, see http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml

E. Information and Copying

The ROWD, draft Order, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Lahontan Water Board by calling (530) 542-5400.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDR and NPDES permit should contact the Lahontan Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Russell Norman at (530) 542-5435

Attachment G – Antidegradation Analysis

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Attachment G– Antidegradation Analysis

As described in section F.IV.B.2.d of this Order, the Lahontan Water Board incorporates this Antidegradation Analysis as findings of the Lahontan Water Board supporting the issuance of this Order.

I. INTRODUCTION

Federal regulations at 40 CFR section 131.12 require that state water quality standards include an antidegradation policy consistent with federal requirements. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California"). Where the federal antidegradation policy is applicable, the State Water Board has interpreted Resolution No. 68-16 to incorporate the federal antidegradation policy. The Lahontan Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16. Resolution No. 68-16 and 40 CFR section 131.12 require that the water quality of waters designated as Outstanding National Resource Waters (ONRW) be maintained and protected. In 1980, pursuant to federal antidegradation regulations (40 Code of Federal Regulations § 131.12), the State Water Resources Control Board designated Lake Tahoe as an ONRW for its recreational and ecological value.

The Tahoe Keys Lagoons Aquatic Weed Control Methods Test (Project) will include discharges into the Tahoe Keys Lagoon and Lake Tallac. The Tahoe Keys Lagoons are connected to Lake Tahoe. Lake Tahoe is designated as an ONRW. While permanent degradation to a non-ONRW is allowed when found consistent with the antidegradation policies, permanent degradation of the ONRW is not allowed. The scope of the ONRW analysis is limited to those discharges that could reach the ONRW and the change in water quality in the ONRW. The Tahoe Keys Lagoons are treated as a water of the U.S and are hydrologically connected to Lake Tahoe. For purposes of the antidegradation analysis for this project, discharges into the Tahoe Keys Lagoons are treated as discharges into the ONRW (i.e., "Tier III" waters under antidegradation policies). Lake Tallac is a feature of an un-named tributary to Pope Marsh draining an area of the City of South Lake Tahoe. Pope Marsh is known to directly flow to Lake Tahoe during periods of high inflow to Pope Marsh. For the purposes of this analysis, discharges into Lake Tallac are also treated as possible discharges into Tier III waters. Tier III waters are provided the highest protection under State and federal antidegradation policies.

The Lahontan Water Board finds that the permitted discharges authorized by this Order are consistent with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16, as set forth herein.

The following report discusses:

1. Antidegradation Policy Background

2. A description of the discharge
3. Baseline Water Quality
4. Changes to Water Quality
5. Description of how waste discharge requirements result in the best practicable treatment or control of the discharge
6. Description of how the highest water quality consistent with maximum benefit to the people of the State will be maintained.

II. ANTIDEGRADATION POLICY BACKGROUND

State antidegradation policy contained in State Water Board Resolution No. 68-16 specifies in substantial part that:

> *"Whenever the existing quality of water is better than the quality established in policies… such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.*
>
> *Any activity…which proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained."*

Federal antidegradation policy at 40 C.F.R section 131.12(a)(3) specifies for Tier III waters (i.e., ONRWs):

> *"Where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected."*

The Administrative Procedures Update titled *Antidegradation Policy Implementation for NPDES Permitting* (APU 90-004, July 2, 1990) provides guidance for Regional Boards implementing State Water Board Resolution No. 68-16 and the Federal Antidegradation Policy, as set forth in 40 CFR 131.12 as applied to the NPDES permitting process. Additional guidance on the federal antidegradation policy is contained in the USEPA Water Quality Standards Handbook (EPA-823-B-12-002, 2012) and other documents prepared by USEPA Region 9. Outstanding National Resource Waters (ONRWs) are provided the highest level of protection under the antidegradation policy. The water quality of ONRWs must be "maintained and protected." U.S EPA in Section 4.7 of the USEPA Water Quality Standards Handbook notes that the state can allow activities that result in temporary and short-term changes in the water quality of an ONRW (i.e., Tier III waters) provided those changes do not permanently degrade water quality or result in water quality lower

than that necessary to protect the existing uses in the ONRW. The term “temporary and short-term” is undefined and is dependent on the activity involved. However, the USEPA Water Quality Standards Handbook notes that in rather broad terms, “EPA’s view of temporary is weeks and months, not years. The intent of EPA's provision clearly is to limit water quality degradation to the shortest possible time.”

As indicated in the Lahontan Basin Plan, “[t]he State Board designated Lake Tahoe an Outstanding National Resource Water (ONRW) in 1980, both for its recreational and its ecological value, and stated: ‘Viewed from the standpoint of protecting beneficial uses, preventing deterioration of Lake Tahoe requires that there be no significant increase in algal growth rates. Lake Tahoe's exceptional recreational value depends on enjoyment of the scenic beauty imparted by its clear, blue waters. ...Likewise, preserving Lake Tahoe's ecological value depends on maintaining the extraordinarily low rates of algal growth which make Lake Tahoe an outstanding ecological resource.’” In interpreting what water quality of ONRWs must be “maintained and protected,” the Lahontan Water Board has interpreted “water quality” in terms of the characteristics for which the water body was selected to be an ONRW. Those characteristics must always be maintained and protected. However, other characteristics may be degraded when determined to be consistent with the Antidegradation Policies. As indicated in the Basin Plan, the characteristics that make Lake Tahoe an exceptional recreational and ecological resource are related to its clear, blue waters. These are the characteristics that must be maintained and protected.

Available state and federal antidegradation guidance focus on procedures for conducting antidegradation analysis in waters that are not designated as ONRW. In waters that are not designated as ONRW, when the baseline quality of a waterbody for a given constituent “exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected” through the requirements of the order unless certain findings are made by the Regional Board. The guidance focuses on the findings that must be demonstrated in high quality waters that are not “maintained and protected” (i.e., those discharges that result in long-term and permanent lowering of water quality). In contrast, water quality in waters designated as ONRWs must be “maintained and protected.” Therefore, in showing that a discharge will lead to only “temporary and short-term” changes to water quality in an ONRW, and thus that the water quality of an ONRW will be “maintained and protected”, the Lahontan Water Board is not required to make findings consistent with 40 C.F.R section 131.12(a)(2) and State Water Board Resolution 68-16 to allow a lowering of water quality. However, while not required under the Antidegradation Policies, for purposes of informing the public, the analysis below does contain information on how the “temporary and short-term” changes are necessary to accommodate economic or social development in the area. The analysis also includes a description on how waste discharge requirements result in the best practicable treatment or control of the discharge.

As indicated in APU 90-004, the Lahontan Water Board may determine that a complete antidegradation analysis is unnecessary and instead conduct a "simple" antidegradation analysis. The Lahontan Water Board may reach this determination if the Lahontan Water Board decides that the discharge will not be adverse to the intent and purpose of the Antidegradation Policies. A complete antidegradation analysis is not required when a lowering of water quality is temporally limited and will not result in any long-term deleterious effects on water. The Lahontan Water Board determines that the findings made below meet the requirements of a simple antidegradation analysis. However, while not required, for purposes of informing the public, the antidegradation analysis includes additional information and findings beyond the requirements of a simple antidegradation analysis.

The Basin Plan notes at page 4.1-4 that if an aquatic pesticide project is allowed to occur, the Regional Board must find that the discharge complies with antidegradation policies. The Basin plan acknowledges that during the treatment event of the pesticide application, a spatial and temporal zone of impacts exists in which water quality and beneficial uses are temporarily not protected. The Basin Plan permits this temporary impact to occur in waterbodies throughout the Lahontan Region, including waterbodies that are designated as ONRWs. For discharges of residual pesticides, the Basin Plan indicates that if residues escape the treatment area, the impact from the residue is not expected to degrade water quality, and will not be permitted to violate water quality objectives that are established at levels protective of beneficial uses in the receiving waters. Further discussion on page 4.1-5 of the Basin Plan notes that any water quality degradation within the receiving water "is expected to be temporary, since pesticide residues escaping the treatment area breakdown through degradation mechanisms (volatilization, photolysis, etc.) and are not expected to persist beyond hours or days."

III. DISCHARGE DESCRIPTION

The purpose of the Project is to evaluate the effectiveness of chemical and non-chemical control methodologies for three target aquatic weeds: Eurasian watermilfoil (*Myriophyllum spicatum*), curlyleaf pondweed (*Potamogeton crispus*), and coontail (*Ceratophyllum demersum*) in the Tahoe Keys Main Lagoon and Lake Tallac. Two aquatic herbicides, endothall and triclopyr, will be applied to multiple test sites (i.e., treatment areas) in the Tahoe Keys Main Lagoon and Lake Tallac. The individual treatment areas average approximately one (1) acre in size with 14 acres being treated in the Tahoe Keys Main Lagoon and 2.9 acres being treated in Lake Tallac. Total, with a combined treatment area of 16.9 acres. The Project also includes the application of Rhodamine WT at all aquatic herbicide treatment areas. Each aquatic herbicide treatment area is proposed to be treated one time with one aquatic herbicide (i.e., endothall or triclopyr) and Rhodamine WT. Each aquatic herbicide, laminar flow aeration, and ultraviolet light treatment areas may receive one or more applications of lanthanum-modified clay, as necessary to mitigate for harmful algal blooms that are triggered by increasing phosphorus concentrations due to plant die off in treatment areas. The treatment areas are bounded by untreated receiving waters that do not receive any aquatic herbicide application. The receiving waters

outside of the test sites in the Tahoe Keys Main Lagoon will provide an approximately 4:1 dilution ratio for treated waters (approximately 600 acre-feet of untreated receiving waters versus approximately 140 acre-feet of treated waters). The permitted discharges authorized by this Order are the discharge of residual aquatic herbicides, Rhodamine WT, and lanthanum-modified clay.

A. Chemical Constituents

The chemical constituents that constitute the discharge include: endothall acid (CAS# 145-73-3), endothall dipotassium salt (CAS# 2164-07-0), triclopyr acid (CAS# 55335-06-3), TCP (CAS# 6515-38-4), 3,6-DCP (CAS# 57864-39-8), lanthanum-modified clay (lanthanum & bentonite clay), and Rhodamine WT (CAS# 37299-86-8).

B. Application Rates and Methods

Endothall Dipotassium Salt

Endothall is proposed to be applied to obtain a 2 mg/L (i.e., 2 ppm) concentration of endothall within test sites. The maximum allowable rate of application of endothall per the approved pesticide label is 5 mg/L (i.e., 5 ppm).

Triclopyr TEA

Triclopyr is proposed to be applied to obtain a 1 mg/L (i.e., 1 ppm) concentration of triclopyr within test sites. The maximum allowable rate of application of triclopyr per the approved pesticide label is 2.5 mg/L (i.e., 2.5 ppm).

Application of the aquatic herbicides is proposed as liquid formulations. To assist in herbicide mixing and attainment of the target herbicide concentrations, the liquid herbicides will be applied from boat-mounted tanks by pumping through drop hoses to deliver the herbicides from mid-depth to the bottom of the water column as the boat traverses the test site. Triclopyr is also proposed to be used in shallow, rocky areas around the perimeter of the test sites in a granular formulation. Granular triclopyr will be spread using a granular spreader to deliver the herbicide granules to the water surface in these areas.

Rhodamine WT

Rhodamine WT is proposed to be applied to obtain a 10 µg/L or less concentration of Rhodamine WT in each aquatic herbicide treatment area. Application of Rhodamine WT is proposed as a liquid formulation applied as described above for the liquid herbicide formulations.

Lanthanum-Modified Clay

Lanthanum-modified clay is proposed to be applied as needed to address harmful algal blooms in aquatic herbicide, laminar flow aeration, and ultraviolet light treatment areas and at the application rate consistent with label instructions. In no case shall the quantity of lanthanum-modified clay discharged be greater than the amount necessary to reduce the phosphorus in the waterbody to attain the target range of total phosphorus concentration. Lanthanum-modified clay is

typically applied at a rate of 55 to 100 lbs per ac-ft of water. Lanthanum-modified clay is applied as a liquid slurry from boat-mounted tanks to the water surface at a rate that produces a 50-150 mg/L lanthanum concentration in the treatment area.

IV. BASELINE WATER QUALITY

In accordance with APU 90-004, the potential for degradation to the water quality baseline is evaluated by comparing baseline water quality to the receiving water quality likely to result from the discharge. Baseline water quality is the best quality of the receiving water that has existed since 1968 (or since 1975 under federal antidegradation), unless the relevant objective was adopted at a later date, or degradation was already authorized in a previous board action through an appropriate antidegradation analysis. Baseline water quality is chemical specific. Pollutants in the discharge that could lower water quality are the endothall aquatic herbicide active ingredient and degradants (i.e., endothall dipotassium salt, endothall acid), triclopyr aquatic herbicide active ingredient and degradants (i.e., triclopyr triethylamine salt, triclopyr acid, TCP and 3,6-DCP), free lanthanum, and Rhodamine WT. Changes in water quality could also result from the application of endothall aquatic herbicide active ingredient and the triclopyr aquatic herbicide active ingredient

Endothall has never been permitted in the Tahoe Keys Lagoons and waters of Lake Tahoe. Receiving water quality data on endothall in Lake Tahoe is not available. However, endothall is a man-made substance that does not persist in the environment. Therefore, the baseline water quality for endothall is considered non-detect.

There are no relevant water quality objectives for triclopyr and Rhodamine WT. Triclopyr discharges have never been permitted in the Tahoe Keys Lagoons and waters of Lake Tahoe. While discharges of Rhodamine WT have occurred in Tahoe Keys Lagoons, degradation has not been authorized in a previous board action. Triclopyr and Rhodamine WT are man-made substances that do not persist in the environment. Therefore, for purposes of this analysis and to determine whether any water quality changes are short-term and temporary, baseline water quality with respect to triclopyr and Rhodamine WT is assumed to be the best (i.e., lowest) that has existed since 1968 and 1975 at non-detect.

There are no relevant water quality objectives for lanthanum. Lanthanum discharges have never been permitted in the Tahoe Keys Lagoons and waters of Lake Tahoe. Lanthanum is a naturally occurring earth element and background concentrations are found in soils throughout the world including the United States[1] . Lanthanum is generally found in soil in a stable form (bound to an anion) and not chemically available for uptake in the soil or release into the water column. Therefore, for purposes of this analysis and to determine whether any water quality changes are

[1] Shacklette, H.T., Boerngen, J.G.m 1984, Element concentrations in soils and other surficial materails of the conterminous United States. U.S. Department of the Interior, U.S. Geological Survey.

short term and temporary, baseline water quality with respect to lanthanum is assumed to be the best (i.e., lowest) that has existed since 1968 and 1975 at non-detectable.

V. CHANGES IN WATER QUALITY

The application of endothall, triclopyr, Rhodamine WT and lanthanum-modified clay will change water quality within the treatment areas and potentially within receiving waters during Project implementation. However, as is demonstrated, below, these changes in water quality will be temporary and short-term and the Project will not result in any permanent water quality degradation and beneficial uses will be protected.

As discussed in the Baseline Water Quality section, above, there have been no permitted discharges of endothall, triclopyr, Rhodamine WT or lanthanum-modified clay in which degradation was already authorized to the Tahoe Keys Lagoons or to the waters of Lake Tahoe. Baseline concentrations for the endothall, triclopyr, Rhodamine WT, and lanthanum-modified clay are assumed to be the best since 1968 and 1975 at non-detectable. The application of these products to the Tahoe Keys Main Lagoon and Lake Tallac will increase concentrations above baseline water quality conditions, resulting in a change in water quality. However, as is demonstrated below, the change in water quality will be temporary and short-term, with no permanent water quality degradation and beneficial uses will be protected.

A. Endothall[2]

Duration of Change to Water Quality Endothall is the common name for endothall acid and a preferred un-hydrated form for aquatic herbicide use is endothall dipotassium salt. Endothall dipotassium salt breaks down to endothall acid (the active ingredient) and potassium cations upon contact with water. Endothall acid degrades to unextractable residues and carbon dioxide (CO_2) with median field dissipation half-lives of 8.5 days (range: 4.1 to 30 days) in laboratory studies, 4.1 days (range: 0.5 to 20 days) in studies on ponds, and 1.2 days (range: 0.24 to 8.5 days) in studies on lakes. Field dissipation studies indicate median disappearance time for endothall acid in lakes and reservoirs of seven (7) days. For untreated areas lacking the bacteria to degrade endothall acid, there may be a several week lag period before endothall starts actively degrading. Endothall may leach to ground waters but endothall's rapid degradation rates would limit depth of leaching. Sediment dissipation half-lives of 2.5 to 8.9 days have been observed for endothall dipotassium salt. Observed half-lives in sediment of endothall dipotassium salt are reported to range from 9 to 14.5 days.

The proposed application would be conducted in distinct treatment events in select locations. At a proposed 2 mg/L treatment concentration, concentrations of endothall in treatment area water and sediment are expected to be on the

[2] *Environmental Fate and Ecological Risk Assessment of Endothall – Revised*, April 22, 2005, USEPA, EPA-HQ-OPP-2009-0081-0143

order of 1 mg/L or less within approximately three weeks of treatment and 0.063 mg/L or less within 30 days of treatment based on field dissipation half-lives and assuming a degradation lag time of several weeks. These time frames are on the scale of weeks and months, not years, and representative of temporary and short-term changes.

The information above demonstrates how there will be no permanent water quality degradation associated with applying Endothall.

Beneficial Use Protection - The discharge of endothall dipotassium salt may result in impacts to non-target aquatic plants within treatment areas. To minimize impacts to non-target plant species and optimize selectivity for target aquatic plants, the Discharger has conducted mesocosm studies to select the Project's two aquatic herbicides and application rates that are less than the allowable maximum. The Discharger will also conduct pre-treatment aquatic plant surveys to select final treatment sites that have highest coverage of target plants and ensure control sites are selected with similar target aquatic weed composition. Eliminating target invasive aquatic plant species is expected to reduce competition for native species and provide conditions more suitable for native plant recolonization at levels of coverage equal to or greater than pre-treatment conditions. The entire water body is not proposed to be treated therefore any migration of endothall outside treatment areas would be subject to dilution and impacts to non-target plants will be spatially limited within the waterbody. Given the low application rates of 2 mg/L, containment within treatment areas and dilution available in adjacent untreated waters, damage to or loss of non-target plants in receiving waters is not expected.

The most sensitive acute aquatic life toxicity concentration (i.e., LC_{50}) for endothall is 9.15 mg/L for Rainbow trout (*Oncorhynchus mykiss*). Therefore, no toxic effects upon aquatic life (i.e., fish, benthic macroinvertebrates) within treatment areas or adjacent receiving waters are expected with the proposed application rate of 2 mg/L endothall. The exposure from the discharge would not elicit chronic toxic effects to aquatic life.

Treatment areas with an application rate of 2 mg/L endothall will temporarily exceed the drinking water maximum contaminant level (MCL) for endothall of 0.1 mg/L. Based upon the information regarding endothall's half-life, above, it is anticipated that endothall concentrations within treatment areas will return to levels less than the MCL within a month, but could occur within several days. Best management practices (BMPs) identified, below, are also designed to prevent exceeding the MCL for endothall in the receiving waters surrounding the treatment areas, and by doing so, will protect and maintain the Municipal and Domestic Supply (MUN) beneficial use in the receiving waters. Additionally, the Tahoe Keys Water Supply Company's three (3) drinking water supply wells located around the Tahoe Keys Main Lagoon are not expected to be impacted based upon the well monitoring data documenting no Rhodamine WT detections

while conducting Rhodamine WT studies in the lagoons[3]. In addition, the lagoons are not known to influence the drinking water supply wells and the depth to the well extraction zones (i.e., 150-430 feet) and hydrogeology create additional barriers between the Tahoe Main Lagoon and the well extraction zones, further protecting the MUN beneficial use.

Therefore, the Project will not result in the water quality of the Tahoe Keys Main Lagoon, Lake Tallac, and Lake Tahoe being lower than necessary to protect their existing beneficial uses.

The information, above, combined with the temporary and short-term nature of the water quality changes resulting from endothall discharges, supports the finding that water quality will be maintained and protected.

B. Triclopyr[4]

Duration of Change to Water Quality - Triclopyr triethylamine salt (also referred to as TEA) dissociates in water to triclopyr acid, which then degrades to TCP, DCP, 5-CLP, 6-CLP, and other minor degradants. Triclopyr acid may be found in both water and sediment; however, its chemical properties indicate a low tendency to absorb to soil and, as a result, a separate sediment exposure assessment was not triggered for triclopyr acid. Bioconcentration of triclopyr TEA and triclopyr acid are noted as not of primary concern based on their chemical properties. Triclopyr is classified as mobile in groundwater and shallow groundwaters are vulnerable to triclopyr leaching.

Triclopyr acid half-lives of 0.4-26 days have been observed in aerobic soil/aquatic systems and 69 to >1,000 days in anerobic soil/aquatic systems. Field dissipation studies conducted in static and non-static lakes indicate dissipation half-life of triclopyr acid ranges from 0.5-5 days in non-static lakes and 7-9 days in static lakes, and only small amounts of triclopyr acid partitioned into sediments with half-lives ranging from 3-7 days in non-static lakes and 4-5 days in static lakes.

Major degradants of triclopyr acid are TCP and 3,6-DCP. TCP formation levels observed in laboratory studies range from 24-33% with an estimated half-life of 20-70 days. 3,6-DCP formation levels in laboratory studies range from 21% in some anerobic systems to 52% in aerobic aquatic systems and exhibited stability showing only slight decline. Studies examining these degradants and other degradation byproducts (i.e., residues of concern or ROCs) demonstrated half-lives of ROCs of 0.4 to 183.1 days in aerobic soil/aquatic systems and stability in anaerobic soil/aquatic systems.

At a proposed 1 mg/L initial treatment concentration, concentrations of triclopyr including ROCs in treatment area water and sediment are expected to be on the

[3] *Draft Environmental Impact Report/Final Environmental Impact Statement for the Tahoe Keys Lagoons Aquatic Weed Control Methods Test*, July 6, 2020.
[4] *Triclopyr (Acid, Choline salt, TEA salt, BEE): Draft Ecological Risk Assessment for Registration Review,* September 30, 2019, USEPA, EPA-HQ-OPP-2014-0576-0026

order of 0.5 mg/L or less within 7 days of treatment and 0.25 mg/L within 14 days of treatment based on field dissipation studies. These time frames are on the scale of weeks and months, not years, and representative of temporary and short-term changes. The information, above, also demonstrates how there will be no permanent water quality degradation associated with applying Triclopyr.

Beneficial Use Protection - The discharge of triclopyr may result in impacts to non-target aquatic plants within treatment areas. To minimize impacts to non-target plant species and optimize selectivity for target aquatic plants, the Discharger has conducted mesocosm studies to select the Project's two aquatic herbicides and application rates that are less than the allowable maximum. The Discharger will also conduct pre-treatment aquatic plant surveys to select final treatment sites that have highest coverage of target plants and ensure control sites are selected with similar target aquatic weed composition. Eliminating target invasive aquatic plant species is expected to reduce competition for native species and provide conditions more suitable for native plant recolonization at levels of coverage equal to or greater than pre-treatment conditions. The entire water body is not proposed to be treated; therefore, any migration of triclopyr outside treatment of areas would be subject to dilution and impacts to non-target plants will be spatially limited within the waterbody. Given the low application rates of 1 mg/L, containment within treatment areas and dilution available in adjacent untreated waters, damage to or loss of non-target plants in receiving waters outside of treatment areas is not expected.

The most sensitive acute aquatic life toxicity concentration (i.e., LC_{50}) for the TCP residue of triclopyr is 10.4 mg/L for water flea (*Daphnia magna*). Therefore, no toxic effects upon aquatic life (i.e., fish, benthic macroinvertebrates) within treatment areas or adjacent receiving waters are expected with the proposed application rate of 1 mg/L triclopyr TEA. The proposed application would be conducted in distinct events in select locations. As a result, the exposure from the discharge would not elicit chronic toxic effects to aquatic life.

Treatment areas with an application rate of 1 mg/L triclopyr will temporarily exceed the dietary exposure limit for drinking water of 0.4 mg/L. Using a field dissipation half-life of seven (7) days, it is anticipated that triclopyr concentrations within treatment areas will return to levels less than the dietary exposure limit within two weeks. Best management practices (BMPs) identified, below, are also designed to prevent exceeding the dietary exposure limit for triclopyr in the receiving waters surrounding the treatment areas, and by doing so, will protect and maintain the Municipal and Domestic Supply (MUN) beneficial use in the receiving waters. Additionally, the Tahoe Keys Water Supply Company's three (3) drinking water supply wells located around the Tahoe Keys Main Lagoon are not expected to be impacted based upon the well monitoring data documenting no Rhodamine WT detections while conducting Rhodamine WT studies in the lagoons[4]. In addition, the lagoons are not known to influence the drinking water supply wells and the depth to the well extraction zones (i.e., 150-430 feet) and

hydrogeology create additional barriers between the Tahoe Main Lagoon and the well extraction zones, further protecting the MUN beneficial use.

Therefore, the Project will not result in the water quality of the Tahoe Keys Main Lagoon, Lake Tallac, and Lake Tahoe being lower than necessary to protect their existing beneficial uses.

The information, above, combined with the temporary and short-term nature of the water quality changes resulting from triclopyr discharges, supports the finding that water quality will be maintained and protected.

C. Rhodamine WT

Duration of Change to Water Quality - The half-life of Rhodamine WT is temperature dependent and ranges from 15.3 to 21.9 days based on studies under natural sunlight at 30 degrees north latitude[5]. There are no degradation byproducts of concern identified for Rhodamine WT. Prior Rhodamine WT applications in 2011 at a 100 µg/L application rate in the lagoons indicate disappearance times for un-contained discharges from more than 6 days to more than 45 days[6]. Prior Rhodamine WT applications in 2016 at a 10 µg/L application rate in the lagoons indicate approximately 1% of the total Rhodamine WT had moved from the injection site after two weeks when contained with double containment curtains[7]. This study also detected approximately 1,000 feet of movement of the Rhodamine WT outside the original contained area when the curtains were removed at 15 to 25 ppt (parts per trillion). Based upon the information, above, and an application rate of 10 ug/L, Rhodamine WT concentrations are expected to diminish to non-detect over a period of weeks to months, representing a temporary and short-term change in water quality. The information, above, also demonstrates how there will be no permanent water quality degradation associated with applying Rhodamine WT.

Beneficial Use Protection - The discharge of Rhodamine WT is not expected to result in damage to or loss of target and non-target plants in treatment areas and receiving waters. For aquatic life, the most sensitive acute aquatic life toxicity concentration (i.e., LC_{50}) for Rhodamine WT is 170 mg/L for water flea (*Daphnia magna*)[8]. Therefore, no toxic effects upon aquatic life (i.e., fish, benthic macroinvertebrates) within treatment areas or adjacent receiving waters are expected.

Rhodamine WT is proposed to be applied to obtain a 10 µg/L or lower concentration in each aquatic herbicide treatment area. The 10 ug/L receiving

[5]PubChem (Chemical Id# 37718), https://pubchem.ncbi.nlm.nih.gov/compound/Rhodamine-WT
[6] Anderson 2011. Anderson, L.W.J. Use of Rhodamine wr as Surrogate for Herbicide Transport in the Tahoe Keys. Final Report to the Lahontan Regional Water Quality Control Board, Project No. R6T-2010-0037.
[7] Anderson 2016. Anderson, L.W.J. Rhodamine wr Dye Applications in the Tahoe Keys. Final Report to the Lahontan Regional Water Quality Control Board, Project No. R6T-2016-0028 (2016).

[8] Material Safety Data Sheet for Rhodamine WT, November 15, 2013.

water limit for Rhodamine WT is based on National Sanitation Foundation (NSF) Standard 60[9]. The use of this industry standard is considered appropriate to protect surface waters near drinking water intakes. The nearest drinking water intake is approximately one mile from the discharge locations of Rhodamine WT.[4] Based on proximity to the nearest drinking water intakes (i.e., approximately one mile and the rate of application, the discharge will not unnecessarily affect the Municipal and Domestic Supply (MUN) beneficial use. Water intakes will be further protected by the BMPs required in the order and discussed, below. Additionally, the Tahoe Keys Water Supply Company's three (3) drinking water supply wells located around the Tahoe Keys Main Lagoon are not expected to be impacted because well monitoring data indicated no Rhodamine WT detections in well monitoring data during prior Rhodamine WT studies in the Tahoe Key Lagoons[4]. In addition, the lagoons are not known to influence the drinking water supply wells and the depth to the well extraction zones (i.e., 150-430 feet) and hydrogeology create additional barriers between the Tahoe Main Lagoon and the well extraction zones, further protecting the MUN beneficial use.

The application of Rhodamine WT is not expected to have an observable effect upon water color within treatment areas or receiving waters. Rhodamine WT becomes barely visible at a concentration of 50 ug/L. This is five times the Rhodamine WT concentration of 10 µg/L or lower to be obtained in each aquatic herbicide treatment area. The application of Rhodamine WT is not expected to cause exceedances of the water quality objective for Color for surface waters.

Therefore, the Project will not result in the water quality of the Tahoe Keys Main Lagoon, Lake Tallac, and Lake Tahoe being lower than necessary to protect their existing beneficial uses.

The information, above, combined with the temporary and short-term nature of the water quality changes resulting from Rhodamine WT discharges, supports the finding that water quality will be maintained and protected.

D. Lanthanum-Modified Clay

Duration of Change to Water Quality –Lanthanum-modified clay, if necessary, will be applied to the water surface as a slurry within one or more treatment areas. Lanthanum-modified clay is proposed to be applied as needed to address harmful algal blooms in any project treatment area (aquatic herbicide, laminar flow aeration, and ultraviolet light treatment). Lanthanum-modified clay is typically applied at a rate of 55 to 100 lbs per ac-ft of water. In no case shall the quantity of lanthanum-modified clay discharged be greater than the amount necessary to reduce the phosphorus in the waterbody to attain the target range of total phosphorus concentration.

Lanthanum-modified clay binds with free phosphorus and quickly (within approximately 24 hours) settles to the bottom of the waterbody as the insoluble mineral rhabdophane. Any changes to water clarity are restored to pre-

[9] Federal Register V63, No. 40, Part III, Page 10283, March 2, 1998.

application conditions once the lanthanum-modified clay has settled. The 24-hour settling process resulting in restoration of water quality to pre-application conditions is on the scale of hours, and representative of temporary and short-term changes. The information, above, also demonstrates how there will be no permanent water quality degradation associated with applying lanthanum-modified clay.

Beneficial Use Protection - The discharge of lanthanum-modified clay is not expected to result in damage to or loss of target and non-target plants in treatment areas and receiving waters. For aquatic life, the acute LOEC for water flea (*Ceriodaphnia dubia*) is greater than 50 mg/L lanthanum-modified clay. Lanthanum-modified clay would be applied as a granular formulation or as a 50-150 mg/L slurry discharged to the water surface from a slurry tank and only the minimum amount of lanthaum-modified clay would be discharged to achieve the target phosphorus reduction. When lanthanum modified clay is discharged as a granular formulation or liquid slurry it rapidly settles to the bed of the treatment area over 24-hours. As a result, aquatic life in the water column would be briefly exposed to the discharge concenterations. Therefore, no toxic effects upon aquatic life (i.e., fish, benthic macroinvertebrates) within treatment areas or adjacent receiving waters are expected. Additionally, the application of lanthanum-modified clay is not expected to lead to any human health impacts.

Lanthanum-modified clay treated areas will see elevated turbidity and suspended solids concentrations, but are expected to return to pre-application levels within 24 hours. Best management practices (BMPs) identified, below, are also designed to prevent exceeding the turbidity and suspended solids water quality objectives in the receiving waters surrounding the treatment areas. The use of lanthanum-modified clay is intended to reduce phosphorus concentrations, which should eliminate or reduce HAB intensity. Eliminating or reducing HAB intensity will protect both contact and Non-contact Water Recreation beneficial uses.

As discussed, above, the lanthanum-modified clay binds with free phosphorus to form the mineral, rhabdophane. Any unbound lanthanum-modified clay that settles to the bed of the water body will also bind to free phosphorus in the sediment pore water. Rhabdophane has a very low solubility and is unlikely to dissociate to phosphate and free lanthanum under environmental conditions over time[10]. Therefore, a release of free lanthanum as a result of applying lanthanum-modified clay is not expected.

Therefore, the Project will not result in the water quality of the Tahoe Keys Main Lagoon, Lake Tallac, and Lake Tahoe being lower than necessary to protect their existing beneficial uses.

The information, above, combined with the temporary and short-term nature of the water quality changes resulting from Lanthanum-modified clay discharges, supports the finding that water quality will be maintained and protected.

[10] PubChem (Chemical Id# 3081422), https://pubchem.ncbi.nlm.nih.gov/compound/Rhabdophane

E. Monitoring Water Quality Changes

As indicated in this attachment, surface waters will be maintained and protected. This Order also requires the Discharger to monitor and report water quality data and other information as indicated in Attachment E. The required monitoring and reporting will confirm that water quality is maintained and protected.

VI. BEST PRACTICABLE TREATMENT OR CONTROL

The Order requires BMPs that ensure appropriate use, notification/communications, and spill prevention and that constitute Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technology (BCT).

The Discharger will deploy the following BMPs:

A. Ensure Appropriate Use

1. Utilize qualified pesticide applicators licensed by the California Department of Pesticide Regulation (DPR).
2. Follow pesticide label requirements, project permit requirements, and approved project plans.
3. Conduct pre-project macrophyte surveys to select final treatment locations/test sites to optimize aquatic herbicide selection for each test site to minimize non-target species impacts and optimize treatment of target aquatic plant species.
4. Conduct treatment events in spring snow melt period when the lagoon water levels are lower than Lake Tahoe water levels resulting in water flowing from the lake into the lagoons.
5. Conduct treatment events in spring snow melt period before plant growth has reached peak biomass to minimize levels of dead biomass post-treatment and associated impacts of biomass decomposition to water quality.

B. Spill Prevention

1. Transport only the quantity of herbicide on the water needed for site being treated.
2. Implement a Spill Prevention, Response and Notification Plan.
3. Install double turbidity curtains adjacent to all treatment areas connected to or abutting the main forebay of the Main Lagoon and the West Channel entrance to Lake Tahoe.
4. Operate the bubble curtains at the Main Channel entrance from the Main Lagoon to Lake Tahoe.
5. Conduct treatment events in spring snow melt period when the lagoon water levels are lower than Lake Tahoe water levels resulting in water flow from the lake into the lagoons.

C. Herbicide Residue Tracking

1. Utilize Rhodamine WT aquatic dye tracing at time of aquatic herbicide application to trace herbicide residue migration and dissipation, and as a surrogate to provide fast assessment of herbicide residue presence in receiving waters.
2. Conduct real-time water quality monitoring including Rhodamine WT, DO, pH and Turbidity to target adjustments to the methods or pace of work necessary to maintain compliance with water quality objectives in receiving waters.
3. Monitor drinking water wells in the Tahoe Keys community for aquatic herbicide residues.

D. Communications

Alert the public and water purveyors if aquatic herbicide residues are detected in receiving waters outside of treatment areas.

E. Contingency Measures

Implement drinking water well treatment (i.e. filtration) if aquatic herbicide residues are detected in monitoring wells.

F. Aeration

Install aeration or other measures in treatment areas and receiving waters following treatment events, if necessary, to mitigate decreases in dissolved oxygen concentrations due to decomposition of dead plants associated with the Project. This Order establishes criteria under which implementing this mitigation measure would be required.

G. Harmful Algal Bloom Prevention and Mitigation

Apply lanthanum-modified clay to mitigate harmful algal blooms triggered by the Project by reducing free available phosphorus in the water column in treatment areas following aquatic herbicide, UV light or laminar flow aeration treatment. This Order establishes criteria under which implementing this mitigation measure would be required.

H. Additional BMPs Typically not Employed for Aquatic Weed Control Projects Using Aquatic Herbicides

1. Utilizing containment (i.e., turbidity barriers and bubble curtains);
2. Timing the treatments to minimize impacts to receiving waters;
3. Water tracing to quickly track chemical residue migration;
4. Basing applications on field studies to target herbicide selection and dosing to minimize non-target impacts;
5. Implementing contingency measures for drinking water supply well treatment if detections of herbicide residues occur in the well water;

6. Aeration of treatment areas and receiving waters to maintain the dissolved oxygen water quality objective; and,
7. Utilizing lanthanum-modified clay to lower phosphorus levels in treatment areas as needed to prevent harmful algal blooms, post-treatment event.

These measures constitute best practicable treatment and control and are incorporated as requirements of this Order. Therefore, these waste discharge requirements will result in best practicable treatment or control of the discharge to assure that (a) pollution or nuisance will not occur and (b) the highest water quality consistent with the maximum benefit of the people of the State will be maintained as further described below.

VII. MAXIMUM BENEFIT TO THE PEOPLE OF THE STATE

The following three benefits indicate that the short-term and temporary change in water quality resulting from the permitted discharge will be to the maximum benefit to the people of the state:

1. Eliminate target aquatic plant species to improve water quality and native species diversity and habitat. In the Basin Plan, the Regional Board recognizes that certain activities involving the application of pesticides (defined above) may be in the public interest because they protect public health and safety or provide ecological preservation. The discharge is proposed to improve water quality and beneficial use attainment through reduction of aquatic invasive and nuisance plants.
2. Protect greater Lake Tahoe from the proliferation of aquatic invasive weed infestations originating from the Tahoe Keys Lagoons by evaluating the effectiveness of chemical and non-chemical control methodologies for three target aquatic weeds: Eurasian watermilfoil (*Myriophyllum spicatum*), curlyleaf pondweed (*Potamogeton crispus*), and coontail (*Ceratophyllum demersum*) in the Tahoe Keys Main Lagoon and Lake Tallac. This may save taxpayers from future costs associated with the control of these species.
3. Inform private, state, and federal aquatic resource managers conducting similar aquatic invasive species control projects on Lake Tahoe.
4. Protection of the Outstanding Features of the ONRW. Aquatic invasive weed infestations threaten Lake Tahoe’s ecosystem, water quality, iconic clarity, and $5 billion recreation-based economy. Lake Tahoe's exceptional recreational value depends on the enjoyment of the scenic beauty imparted by its clear, blue waters. Any short-term and temporary water quality changes resulting from the application of aquatic herbicides will be to the maximum benefit of the people of state in preserving the features of Lake Tahoe that make it outstanding.

The temporary change in water quality resulting from the discharge is consistent with the maximum benefit to the people of the state since the discharge is proposed for environmental protection, specifically to determine an effective

method or combination of methods to improve water quality, beneficial use attainment and aquatic habitat for native aquatic plant, fish and aquatic macroinvertebrate species through the reduction of target aquatic plants.

VIII. SUMMARY OF ANTIDEGRADATION FINDINGS

The permitted discharge is consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. Due to the one-time nature, duration, effect, and low volume of discharge expected from the application of endothall, triclopyr, Rhodamine WT and lanthanum-modified clay regulated under this Order, water quality changes in the ONRW will be short-term and temporary, will not permanently degrade water quality, and will protect the existing uses in the ONRW. Therefore, the water quality of the ONRW is maintained and protected.