

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION**

**BOARD ORDER NO. R6V-2015-0057-A2
WDID NO. 6B152004001**

**AMENDED WASTE DISCHARGE REQUIREMENTS
FOR**

**U.S. BORAX, INC., RIO TINTO MINERALS,
CLEAN ENERGY FUELS COMPANY, BORON FACILITY**

Kern County

The California Regional Water Quality Control Board, Lahontan Region, hereafter (Water Board), finds:

1. Discharger

On May 23, 2018, and June 28, 2018, U.S. Borax, Inc. submitted information that collectively constitutes a complete amended Report of Waste Discharge (RWD) to support a proposed amendment to Waste Discharge Requirements (WDRs), Board Order No. R6V-2015-0057. U.S. Borax, Inc., a subsidiary of Rio Tinto Minerals, owns and operates the U.S. Borax Mine in Boron, California. Clean Energy Fuels Company (CEFC) is an independent clean energy producer that operates a liquid natural gas plant which produces cooling tower blowdown. U.S. Borax, Inc., Rio Tinto Minerals, and CEFC are hereinafter collectively referred to as the "Discharger." The Discharger submitted an amended RWD for proposed changes in waste discharges to incorporate an additional engineered alternative liner system for the retrofit of Reclamation Ponds (R-Ponds) 3 through 5 surface impoundments at the Boron Facility.

2. Reasons for Action

The Discharger is proposing an additional engineered alternative liner system for the R-Ponds 3 through 5 surface impoundments retrofits that is easier to construct, more economically feasible, and still protective of water quality, including compliance with the requirements of California Code of Regulations (CCR), title 27. Board Order No. R6V-2015-0057- A1, Finding 10, describes the accepted engineered alternative liner systems for the Group A and B surface impoundments known as the R-Ponds 1 through 7 and BAPs 1 through 7. Finding 10 is being amended herein to allow the Discharger to construct an additional engineered alternative liner system for retrofit of R-Ponds 3 through 5 surface impoundments.

3. California Environmental Quality Act Compliance

This amendment to Board Order No. R6V-2015-0057 is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with CCR, title 23, section 15301. The amendment consists of permitting an existing facility with no expansion of use beyond that which is

already existing, and therefore, fits within the Class 1 exemption. No exceptions to the exemptions, as set forth in CCR, title 14, section 15300.2, have been identified.

4. Notice to Interested Parties and Public

The Water Board has notified the Discharger and all known interested parties and persons of its intent to issue amended WDRs for the Boron facility.

5. Consideration of Comments

The Water Board, in a public meeting, heard and considered all comments pertaining to the discharges.

IT IS HEREBY ORDERED that Waste Discharge Requirements, Board Order No. R6V-2015-0057-A1 is amended by the following modifications:

1. Amend the "R-Ponds" portion of Finding No. 10 to read as follows, all other language in Finding No. 10 will remain unmodified:

R-Ponds

R-Ponds 1 through 7 contain Group A and B mining waste, defined in CCR, title 27, section 22480, subdivision (b)(1) and (b)(2), respectively, from the sources described in Table 1. The R-Ponds also receive groundwater from the groundwater pump and treat operations at the Boron site, liquid from tailings in Former Pond 5, and stormwater runoff from Former Ponds 1, 2, 3, and Former Ponds A through E.

R-Ponds 1 through 6 were constructed with a compacted 15-inch-thick clay liner with a permeability of 1.9×10^{-9} centimeters per second (cm/sec). Subdrain systems installed below the clay liner of each pond are connected to leachate collection sumps. The existing structure is proposed to remain in place during retrofit activities.

The Discharger has constructed new surface impoundment R-Pond 7 to contain the Group A and B discharges while the remaining R-Ponds are either systematically taken out of service or retrofitted. The R-Pond 7 surface impoundment liner system is constructed from bottom to top with a compacted subgrade below the bottom liner, which is moisture conditioned and compacted to 90% of the maximum dry density per American Society for Testing and Materials (ASTM) Standard D1557; a geosynthetic clay liner (GCL); a secondary geonet leakage collection layer; a secondary 60-mil high density polyethylene (HDPE) geomembrane liner; a primary geonet leakage collection layer; a primary 60-mil HDPE geomembrane liner, and incorporating a dual drainage system (eastern and western) for the primary and secondary leachate collection and recovery system (LCRS).

Since constructing R-Pond 7, the Discharger has begun systematically removing R-Ponds 1 through 6 from service, either permanently or for retrofit. Retrofit activities have been completed in the footprint of the existing R-Pond 6, which consist of the same liner system as R-Pond 7. R-Pond 2 has been permanently taken out of service, and R-Pond 1 will be taken permanently out of service in late 2018. Retrofit activities begin by first removing the sacrificial sandy material that is currently on the upper portion of the liner that functions as a protectant for the clay layer during harvesting operations. Following clay subgrade preparation, the engineered alternative liner system is constructed.

In December 2017, the Discharger submitted a proposal for additional engineered alternative liner systems for the retrofit of R-Ponds 3 through 5. Proposed Liner System Alternative 1, from bottom to top, is a GCL, a 60-mil HDPE Drain Liner[®] geomembrane, and an 80-mil HDPE (single sided textured, with textured side facing up). Proposed Liner System Alternative 2, from bottom to top, is a GCL, 60-mil smooth HDPE geomembrane, a geonet, and an 80-mil HDPE geomembrane (single sided texture, with textured side facing up). The Discharger proposes these additional engineered alternative liner systems due to a number of factors including ease of construction and economic feasibility. These proposed engineered alternative liner systems are protective of water quality and are in compliance with the requirements of CCR, title 27.

In May 2018, the Discharger submitted a proposal for an additional engineered alternative liner system for the retrofit of R-Ponds 3 through 5. The additional proposed alternative liner system, from bottom to top, is a GCL, a 60-mil smooth HDPE geomembrane, a geonet leakage collection layer, and a 60-mil HDPE geomembrane (single sided texture, with textured side facing up). The Discharger is proposing this additional engineered alternative liner system due to ease of construction and economic feasibility. This proposed engineered alternative liner system is protective of water quality and is in compliance with the requirements of CCR, title 27.

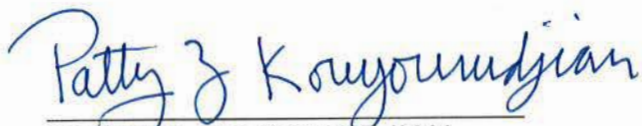
R-Ponds 3 through 5 may be proposed to be retrofitted using a dual drainage system, so that each R-Pond will have an eastern and western primary LCRS. Depending on the liner system constructed, the R-Pond may also be constructed with an eastern and western secondary LCRS. Each LCRS will be comprised of gravel enveloped by geotextile with HDPE liner with dual access pipes.

This Board Order approves the following proposed engineered alternative liner systems for retrofitting of R-Ponds 3 through 5 surface impoundments: 1) GCL, a geonet leakage collection layer, a 60-mil HDPE geomembrane liner, a geonet leakage collection layer, and a 60-mil HDPE geomembrane liner; 2) GCL, a 60-mil HDPE Drain Liner[®] geomembrane, and an 80-mil HDPE (single sided texture, with textured side facing up); 3) GCL, a 60-mil smooth HDPE geomembrane, a geonet, and an 80-mil HDPE geomembrane (single sided texture, with textured side facing up); and 4) GCL, a 60-mil smooth HDPE geomembrane, a geonet leakage

collection layer, and a 60-mil HDPE geomembrane (single sided texture, with textured side facing up).

During final design evaluation, the Discharger may propose to retrofit R-Ponds 3 through 5 surface impoundments in the manner described by any of the above proposed engineered alternatives. Regardless of the liner system, each finished R-Pond will be approximately 22 acres in size with approximately 200-acre feet of capacity. A final design is required to be submitted as part of this Order.

I, Patty Z. Kouyoumdjian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Lahontan Region, on November 14, 2018.



PATTY Z. KOUYOUMDJIAN
EXECUTIVE OFFICER