

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION**

**ORDER R7-2018-0007  
WASTE DISCHARGE REQUIREMENTS  
FOR  
EARTHRISE NUTRITIONALS, LLC, MICROALGAE PRODUCTION FACILITY  
EVAPORATION POND 8 CLASS II SURFACE IMPOUNDMENT  
North of Calipatria – Imperial County**

The California Regional Water Quality Control Board, Colorado River Basin Region (Colorado River Basin Water Board), finds that:

1. Earthrise Nutritionals, LLC (Discharger) owns and operates a microalgae production facility (Facility) located at 113 East Hooper Road in an unincorporated portion of Imperial County, north of Calipatria, California, 92233. The Facility produces Spirulina algae and a natural blue pigment derived therefrom, known as Linablue®, for food, biochemical, and pharmaceutical use.
2. The Facility includes 37 open lined ponds used to grow the algae, harvesting and production facilities, and wastewater evaporation ponds. Wastewater generated during production is not currently discharged offsite, but is retained onsite in seven existing evaporation ponds.
3. The Discharger proposes to expand production at the Facility and to construct a new evaporation pond (EVP-8) to retain the increased volume of wastewater generated by increased production at the Facility. Due to the high concentrations of salts and nutrients in the wastewater, the Discharger intends to construct the new pond in compliance with requirements under title 27 of the California Code of Regulations (Title 27) for a Class II surface impoundment. This Order is limited to the construction and operation of EVP-8.
4. The Discharger submitted an original Report of Waste Discharge (ROWD) on May 2, 2017. After receiving comments by Colorado River Basin Water Board staff, the Discharger submitted a revised ROWD dated December 1, 2017, increasing the size of EVP-8 and containing additional details concerning its construction. Colorado River Basin Water Board staff provided the Discharger with comments regarding the revised ROWD on January 8, 2018. On January 18, 2018, the Discharger submitted an amended ROWD Supplement in response to staff's comments.
5. The Facility has not previously been regulated under Waste Discharge Requirements (WDRs). The Colorado River Basin Water Board has determined that WDRs are required for the new evaporation pond, particularly because there will be elevated concentrations of salts and nutrients in the wastewater. This Order is focused exclusively on EVP-8 and monitoring requirements relating thereto, and does not address the existing wastewater evaporation ponds. The Facility and these WDRs are assigned California Integrated Water Quality System (CIWQS) No. CW-727317, Waste Discharge Identification (WDID) No. 7A130133001, and GeoTracker ID No. GT-WDR100028549.

### **Site Description**

6. The Facility is located on Assessor's Parcel Number (APN) 022-140-015-0000, comprising approximately 160 acres at 113 East Hooper Road, located in an unincorporated portion of Imperial County, north of Calipatria, California, as shown in Figure 1 and attached hereto. The Facility is in the southeast quarter of Section 33 and a portion of the southwest quarter of Section 34 lying west of the east line of the Southern Pacific Railway right-of-way, Township 11 South, Range 14 East, San Bernardino Base and Meridian, Imperial County.
7. The area covered by the Facility is zoned "Agricultural," i.e., "A-2G, General Agriculture" with a Geothermal Overlay, according to the Imperial County General Plan. Imperial County considers the Facility to be an agricultural land use operation. Surrounding land uses include industrial and agricultural uses; the Southern Pacific Railroad and Calipatria Prison are to the east, agricultural fields and the City of Niland are to the north, agricultural fields and the Salton Sea are to the west, and the City of Calipatria is to the south.
8. The California Department of Public Health has inspected and approved the Facility for food production.
9. The Facility maintains an aquaculture license from the California Department of Fish and Wildlife, which oversees the Facility and regulates algal species.
10. Algae are produced in 37 variously-sized, racetrack-style aquaculture ponds where the water chemistry is adjusted and optimized to promote algal growth through the addition of nutrients. The Facility cultivates Spirulina in several open lined-ponds with an alkaline aqueous medium that is rich in nutrient salts. The growth medium consists of water, sodium carbonate, nitrates, phosphates, and sulfates.
11. The production ponds are equipped with plastic liners to prevent water infiltration. Water from the aquaculture ponds is circulated through a filter to harvest the algae and then put back into the aquaculture ponds. When water in the aquaculture ponds becomes too saline for optimal conditions, a portion is discharged into the evaporation ponds and replaced with fresh water. The production process does not utilize pesticides, herbicides, genetically modified organisms (GMOs), or preservatives. The U.S. Food and Drug Administration issued the Facility a "Generally Recognized As Safe" (GRAS) status.
12. Process water is supplied to the Facility by the Imperial Irrigation District (IID) through an agricultural account. The water is obtained from the Colorado River via an adjacent canal, and has a Total Dissolved Solids content of about 750 mg/L.

### **Hydrogeologic Conditions**

13. The Imperial Valley is located in the southeastern half of the Salton Trough and is bound by the San Andreas Fault and Chocolate Mountains to the northeast, and the Peninsular Range and faults of the San Jacinto Fault Zone to the southwest. The Salton Trough is a broad, northwest-trending basin that represents the northward extension of the Gulf of California. Tectonic activity that formed the trough continues at a high rate, as evidenced

by deformed young sedimentary deposits and high levels of seismicity in the general vicinity.

14. Marine and non-marine sediments in the vicinity of the Facility are as much as 20,000 feet thick. Uppermost soils are lacustrine deposits from Ancient Lake Cahuilla, comprised of interbedded lenticular and tabular silt, sand and clay layers that are Late Pleistocene to Holocene in age, probably less than 100 feet thick, and derived from periodic flooding of the Colorado River into the Salton Basin. These deposits create confined groundwater conditions in some areas.
15. Older deposits below the lacustrine sediments consist of Miocene to Pleistocene non-marine and marine sediments deposited during incursions of the Gulf of California. Two major aquifers are present in the Facility vicinity. The upper aquifer is between 200 and 450 feet thick, and the lower aquifer averages 380 feet thick and has a maximum thickness of 1,500 feet. These two aquifers are separated by a semi-permeable aquitard that is 60 to 280 feet thick. Water quality in these aquifers is reported to be poor due to high salt concentrations.
16. The average annual precipitation in the Imperial Valley is about 3 inches per year. The average annual evapotranspiration rate is about 67 inches per year. Maximum evaporation from EVP-8 is anticipated to total about 58 acre feet per year (about 18.9-million gallons per year).
17. A geotechnical investigation was performed as part of the ROWD. A total of 10 borings to a maximum depth of 50 feet were drilled, including 6 within the footprint of the proposed EVP-8. Soils at the Facility were observed to be composed primarily of silt and clay, with occasional interbedded clayey sand layers.
18. Groundwater was first encountered in the borings at a depth of between 12.5 and 16.5 feet below ground surface. After well installation, groundwater in the wells rose to a depth of about 10 to 13.3 feet below ground surface. Two additional borings were drilled to an elevation of 807 feet (all elevations are relative to mean sea level, plus 1,000 feet), which is 5.5 feet below the lowest elevation of the proposed EVP-8. These additional borings were left open for two days to evaluate whether five feet of separation is present between the proposed pond and groundwater. Free water did not accumulate in the borings, indicating that uppermost groundwater was "confined" under EVP-8, and five feet of separation is present between the waste and uppermost groundwater.
19. Hydraulic conductivity testing was performed on five soil samples comprised of clay. In-place hydraulic conductivity testing was performed in five shallow borings and four monitoring wells. The conductivity (K) of the soil samples ranged from 7.46E-09 to 9.59E-09 centimeters per second (cm/sec), which is very low. K values obtained from the in-place testing ranged from 5.67E-3 to 4.6E-07 cm/sec. The higher K values from the in-place testing are likely due to secondary porosity (such as cracks and root-holes) or soil heterogeneity.
20. Six groundwater monitoring wells have been installed at the Facility, numbered MW-1, MW-2, MW-3, MW-4, MW-5, and MW-6, but only five currently exist (MW-4 was installed on the eastern side of the Facility, but was subsequently destroyed). These wells are located in the general area of the production ponds. None are located hydrologically

down-gradient of the proposed EVP-8 location. The groundwater table slopes uniformly to the west at a gradient of about 0.006 feet per foot.

21. Groundwater samples were collected from monitoring wells MW-1, MW-2, W-3, MW-5, and MW-6 in September 2017. The most significant testing results for these samples were as follows (all concentrations are in milligrams per liter (mg/L)):

Location	TDS <sup>1</sup>	Total Nitrogen	Total Phosphorous	BOD <sup>2</sup>	TOC <sup>3</sup>
MW-1	28,000	<20*	0.388	183	10
MW-2	20,000	<20*	2.49	148	10
MW-3	22,000	<20*	0.339	126	7.4
MW-5	11,000	<20*	0.935	55.6	5.1
MW-6	22,000	<20*	0.432	101	3.9

\* = sample was diluted due to high salinity, raising the detection limit

These results indicate groundwater quality under the site is poor due to high salts.

22. The depth to the highest groundwater-bearing strata is approximately 8.1 to 13.5 feet below the bottom of the proposed LCDS sump. Section 20240, subdivision (c) of Title 27 requires a minimum separation of five feet between the waste (bottom of the LCRS sump) and the highest anticipated groundwater elevation.
23. The shallow depth to groundwater and low hydraulic conductivity of the soil may result in the vadose zone being saturated by the capillary fringe. The high electrical conductivity of the existing groundwater and the low hydraulic conductivity prevent effective monitoring of the vadose zone, and vadose zone monitoring is considered infeasible.

### Waste and Unit Classification

24. Spirulina biomass is harvested from the ponds primarily during the summer months using filters inside the Spirulina Harvesting Plant (SHP). The water from the ponds is pumped to the SHP, where filters are used to remove biomass from the pond water. The pond water is then pumped back to the production pond. The filtered algae is dewatered and then dried in a warm air tower, where it is turned into powder and packaged for shipment. An air scrubber ensures that no algae are released into the environment. Wastewater produced in the dewatering process is routed to the evaporation ponds.
25. The Facility also produces Linablue®, which is a blue, food-grade dye extracted from the algae. The extraction process requires potable water, which is produced from the IID canal water using a 50 gallon per minute reverse osmosis water treatment system. Backwash from the reverse osmosis process is routed to the evaporation ponds. The

<sup>1</sup> Total Dissolved Solids

<sup>2</sup> Biological Oxygen Demand

<sup>3</sup> Total Organic Carbon

Linablue® production process uses a filter press and chemicals to separate the liquid dye from the biomass in an area referred to as the Linablue® Extraction Plant (LEP) building. The solid biomass is then dried using a pulse dryer for disposal to an approved landfill. Wastewater generated by the extraction process is routed to the evaporation ponds.

26. Wastewater at each of the two production areas, SHP and LEP, is collected and temporarily stored in 2,000 gallon concrete pits. Comingling of the wastewater produced at each production area occurs in the concrete pits. The wastewater in the pits is periodically pumped to the evaporation ponds by pumps that are operated by a float valve. The wastewater is conveyed to the evaporation ponds by subsurface pipes. The sludge and water generated when cleaning the production ponds are also collectively conveyed to the existing lined evaporation ponds. A general schematic of the production process is attached as Figure 2.
27. Domestic wastewater and non-hazardous laboratory wastewater from the Facility are disposed of into an onsite septic system that was permitted by Imperial County.
28. Other wastewater generated at the Facility, such as during equipment cleaning and pond cleaning, is also routed to the evaporation ponds.
29. Seven disposal ponds are currently being used at the Facility, totaling approximately 78.7 acres. The existing wastewater evaporation ponds have plastic liners but were not constructed with a Leachate Collection and Detection System (LCDS). Colorado River Basin Water Board staff is presently assisting the Discharger in bringing those ponds into compliance with Title 27. Approximately 28.7 million gallons per year are disposed of into the existing evaporation ponds.
30. The chemical constituents of the wastewater generated at the site were characterized through the collection of samples from the existing wastewater evaporation ponds, one sample from SHP concrete-lined pit, and two samples from the LEP concrete-lined pit. The most significant analytical testing results for these samples were as follows:

Sample	TDS	Total Nitrogen	Total Phosphorous	BOD	TOC
SHP	6,240	24	15	260	84
LEP-1	7,630	120	98	1,500	730
LEP-2	4,240	94	72	1,200	510

31. Designated waste is defined in Water Code section 13173 and section 20210 of Title 27 as a nonhazardous waste consisting of or containing pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or reasonably expected to affect beneficial uses of the waters of the state.
32. The potential discharge to EVP-8 of wastewater from the Facility, which contains elevated concentrations of salts and nutrients, poses a significant threat to the water quality of the underlying groundwater and areal surface waters. Therefore, the

discharge is a designated waste and, as such, must be discharged to a Class II surface impoundment as required by Title 27.

### **Waste Management Unit Design**

33. Wastewater from both the SHP and LEP will be disposed to EVP-8 via 6-inch PVC pipes, and is expected to total 16.6 million gallons per year. The wastewater will be retained in EVP-8 until it evaporates. EVP-8 must be a Class II surface impoundment under Title 27, and the Discharger proposes to build, operate, and maintain it as such.
34. EVP-8, including berms, will cover approximately 14 acres and is proposed to be 1,380 feet long, 345 feet wide and 6 to 8 feet deep (not including the 2-foot of free-board). EVP-8 will be divided into five cells by interior berms. At the water-line, the surface area will total approximately 10.9 acres (including the interior berms). The total design storage capacity of EVP-8 is 14,542,130 gallons (44.63 acre-feet [AF]). The average monthly discharge to EVP-8 will be 4,800 cubic meters (1.268.000 gallons).
35. EVP-8 will be constructed as a Class II surface impoundment under Title 27, consisting of the following layers (from bottom to top):
  - a. Native soil compacted to 90% maximum density.
  - b. A 45-mil-thick, reinforced, low-density polyethylene (LDPE) geomembrane.
  - c. A high-density polyethylene (HDPE) geonet, or geocomposite with an equivalent conductivity under the proposed use conditions, as a leak collection layer.
  - d. A 45-mil-thick, reinforced LDPE geomembrane or a 60-mil HDPE geomembrane as the primary (uppermost) barrier.
36. The EVP-8 will have a leachate collection and detection system (LCDS). The liner will be constructed with a 1% slope toward ten sumps located along the perimeter of EVP-8 (two in each cell). The sumps will include access pipes to allow evaluation of whether fluids from the ponds are reaching the LCDS layer. Despite the flat gradient, the LCDS design is anticipated to convey a leak to the collection sump in less than 3 hours.
37. The surface impoundment will be equipped with a leachate collection and removal system (LCRS), which is a lined sump installed below the lowest portions of the primary liner. The LCRS allows for detection of the vertical migration of liquids and removal of a water sample for testing.

### **Control Systems/Monitoring Programs**

38. **Leachate Collection/Detection System (LCDS)** – The liner system is comprised of a geonet drainage layer between the primary and secondary geomembranes. The primary geomembrane is designed to contain the wastewater within the pond. The underlying geonet and secondary geomembrane serve as components of the leak collection layer. Any leakage that occurs through the primary geomembrane will be

contained above the secondary liner and will flow within the permeable geonet toward the leak collection sump. It should be noted that the secondary liner is underlain by the existing low permeable clay, which in combination, function as a composite barrier. The leak collection layer and the leak collection sump comprise the LCDS. The floor of the pond has a minimum of 1 percent slope to enable the drainage of any leak toward the sump. The leak collection sump is approximately 64 square feet by two feet deep and is filled with permeable gravel. A 10-inch diameter HDPE riser will extend from the sump beneath the primary liner to the surface. The riser pipe is slotted within the sump area. The riser pipe enables routine inspection to assess whether any liquids accumulate within the sump, which may indicate a leak in the primary liner.

- 39. Monitoring and Reporting Program (MRP)** – Monitoring systems are outlined in the attached Monitoring and Reporting Program (MRP) No. R7-2018-0007 and include visual inspections, groundwater monitoring, and leak detection monitoring.
- 40. Groundwater Monitoring** – The groundwater monitoring system includes up-gradient and downgradient monitoring wells to evaluate the quality of the groundwater within the vicinity of EVP-8. Specifically, up-gradient monitoring locations will represent the background water quality for EVP-8, and the downgradient monitoring wells are intended to detect a potential release from EVP-8 into the groundwater. The monitoring program is designed to meet the applicable requirements of sections 20415 and 20420 of Title 27. The background and detection monitoring wells are described as follows:
- **EVP-8 background monitoring wells:** A new background monitoring well will be installed east of the existing pond area and used to monitor background water quality.
  - **Detection Monitoring Wells:** Three new monitoring wells will be installed downgradient of EVP-8, at the locations shown on Figure 4 of the Order. In general, these wells are northwest, west, and south of EVP-8. These wells will be used to monitor for releases from EVP-8.
  - **Groundwater elevation monitoring wells:** Five monitoring wells currently exist east of EVP-8, referred to as MW-1, MW-2, MW-3, MW-5, and MW-6 (see Figure 4). These wells are located between existing production ponds, and it is unclear if these wells have been influenced by leakage from those ponds. Therefore, these wells will be used to evaluate the groundwater elevation and gradient but will not be used for chemical testing.
- 41. Surface Water Monitoring** – No surface water monitoring is required. All waste must be contained within the surface impoundment.

#### **Basin Plan, Beneficial Uses, and Related Regulatory Considerations**

- 42.** The Water Quality Control Plan for the Colorado River Basin (Basin Plan), which was adopted on November 17, 1993 and amended on March 7, 2017, designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (including amendments adopted by the Colorado River Basin Water Board to date). Pursuant to section 13263(a) of the Water Code, waste discharge requirements must implement the Basin Plan and take into consideration the beneficial uses to be protected, the water

quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Water Code section 13241.

43. The Facility is located in the Imperial Hydrologic Unit designated in the Basin Plan. The beneficial uses of ground waters in the Imperial Hydrologic Unit are:
  - a. Municipal and domestic supply (MUN)
  - b. Industrial service supply (IND).
44. Surface waters in the area of the Facility consist of the IID irrigation canals and surface drains (Imperial Valley Drains). The beneficial uses of the Imperial Valley Drains are:
  - a. Fresh Water replenishment of Salton Sea (FRSH)
  - b. Non-contact Water Recreation (REC II)
  - c. Warm Water Habitat (WARM)
  - d. Wildlife Habitat (WILD)
  - e. Preservation of Endangered or Threatened Species (END).
45. This Order establishes waste discharge requirements (WDRs) pursuant to division 7, chapter 4, article 4 of the Water Code (for discharges that are not subject to regulation under section 402 of the Clean Water Act (33 U.S.C. § 1342)).
46. These WDRs implement numeric and narrative water quality objectives for ground and surface waters established by the Basin Plan. The numeric objectives for groundwater designated for municipal and domestic supply are the Maximum Contaminant Levels (MCLs) and bacteriological limits specified in section 64421 et seq. of title 22 of the California Code of Regulations. The Basin Plan states that groundwater for use as domestic or municipal water supply (MUN) must not contain taste or odor-producing substances in concentrations that adversely affect beneficial uses as a result of human activity.
47. It is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
48. Section 13267 of the Water Code authorizes the Colorado River Basin Water Board to require technical and monitoring reports. The monitoring and reporting requirements in Monitoring and Reporting Program (MRP) R7-2018-0007 are necessary to determine compliance with this Order. The State Water Board's electronic database, GeoTracker Information Systems, facilitates the submittal and review of monitoring and reporting documents. The burden, including costs, of this MRP bears a reasonable relationship to the need for that information and the benefits to be obtained from that information.



49. Pursuant to Water Code section 13263(g), the discharge of waste is a privilege, not a right, and adoption of this Order does not create a vested right to continue the discharge.

### **Groundwater Degradation**

50. State Water Board Resolution 68-16, entitled *Statement of Policy with Respect to Maintaining High Quality Waters in California* (Antidegradation Policy), generally prohibits the Colorado River Basin Water Board from authorizing discharges that will result in the degradation of high-quality waters, unless it is demonstrated that any change in water quality will (a) be consistent with maximum benefit to the people of the state, (b) not unreasonably affect beneficial uses, and (c) not result in water quality less than that prescribed in state and regional policies (e.g., the violation of one or more water quality objectives). The discharger must also employ best practicable treatment or control (BPTC) to minimize the degradation of high quality waters.
51. The Antidegradation Policy does not apply to the proposed discharge of waste to EVP-8. The WDRs in this Order are designed to ensure that any such wastes remain contained at the Facility and will not reach waters of the state. The requirements reflect the Discharger's best efforts to control such wastes, and also constitute BPTC for the prevention of surface water and groundwater degradation.

### **CEQA and Public Participation**

52. The Colorado River Basin Water Board is the Lead Agency for this project under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). As Lead Agency, the Colorado River Basin Water Board conducted an Initial Study in accordance with title 14, section 15063 of the California Code of Regulations. Based on the Initial Study, the Colorado River Basin Water Board prepared a Mitigated Negative Declaration.
53. On March 7, 2018, the Colorado River Basin Water Board notified interested agencies and persons of its intent to adopt a Mitigated Negative Declaration (MND) for this project and filed a notice of intent to adopt an MND with the State Clearinghouse. The Colorado River Basin Water Board provided interested agencies and persons with an opportunity to submit comments on the draft MND during a 30-day comment period that ended on April 5, 2018. (Cal. Code Regs., tit. 14, §§ 15072, 15073).
54. On April 12, 2018, the Colorado River Basin Water Board held a public hearing to consider adoption of the draft MND. After considering documents and comments on the draft MND, the Colorado River Basin Water Board adopted the MND finding, on the basis of the whole record before it, that there was no substantial evidence that the proposed Project, with mitigation, would have a significant effect on the environment.
55. CEQA requires that the Lead Agency adopt a program for monitoring and reporting on any mitigation measures it has imposed in a negative declaration to assess efficacy and

to ensure compliance. (Pub. Res. Code, § 21081.6.) The Colorado River Basin Water Board has developed a mitigation monitoring and reporting program (MMRP) to implement all mitigation measures identified in the MND as necessary to mitigate or avoid significant environmental effects.

56. The Colorado River Basin Water Board has notified the Discharger and all known interested agencies and persons of its intent to draft WDRs for the proposed discharge outlined in this Order, and has provided them with an opportunity for a public meeting and to submit comments.
57. The Colorado River Basin Water Board, in a public meeting, heard and considered all comments pertaining to this discharge.

**IT IS HEREBY ORDERED**, that in order to meet the provisions contained in division 7 of the Water Code and the regulations adopted thereunder, the Discharger shall comply with the following:

**A. Discharge Prohibitions**

1. The discharge of “hazardous waste” is prohibited. For the purposes of this Order, the term “hazardous waste” is as defined in California Code of Regulations, title 27, section 20164.
2. The treatment or disposal of wastes from the Facility shall not cause pollution or nuisance as defined in sections 13050(l) and 13050(m) of the Water Code.
3. Discharge of wastewater to EVP-8 in a manner other than as described in Findings 26 and 2 is prohibited.
4. The discharge of any wastewater from the Facility to any surface waters or surface drainage courses is prohibited.
5. Bypass, overflow or spill of untreated or partially treated waste is prohibited.
6. Discharge to EVP-8 is prohibited until the following tasks are completed:
  - a. Installation of an approved groundwater quality monitoring network; and
  - b. Submission to the Colorado River Basin Board of the remainder of the data pertaining to EVP-8 requested by staff on January 8, 2018.
7. The following shall be submitted to the Colorado River Basin Water Board within 60 days of completing construction of EVP-8:
  - a. A construction quality assurance report for EVP-8, signed by a California-registered professional in responsible charge of the construction of EVP-8; and
  - b. The remainder of the data requested on January 8, 2018 not previously submitted.

**B. Discharge Specifications**

1. EVP-8 shall be constructed as described in the amended ROWD Supplement dated January 18, 2018, except for changes approved by the Colorado River Basin Water Board Executive Officer.
2. A minimum depth of freeboard of two (2) feet shall be maintained at all times in EVP-8.
3. Public contact with wastewater shall be precluded through such means as fences, signs, and other acceptable alternatives. Conspicuous signs shall be posted in a prominent location in each area where wastewater is stored on-site.
4. The discharge shall not cause degradation of any water supply.
5. Objectionable odors originating at this Facility shall not be perceivable beyond the limits of the wastewater disposal area.
6. Except for the initial eight months of discharge, the average monthly flow discharged to EVP-8 shall not exceed 6,000 cubic meters (1,585,000 gallons).

**C. Waste Management Unit Specifications**

1. EVP-8 shall be constructed, operated, maintained, and eventually closed in accordance with Title 27 prescriptive requirements.
2. At least two feet of free-board shall be maintained in EVP-8 at all times.
3. EVP-8 and related containment structures shall be constructed and maintained to prevent inundation, erosion, slope failure, washout, and overtopping under 1,000-year, 24-hour precipitation conditions, and shall be designed to contain the 100-year, 24-hour precipitation without using the required two feet of freeboard.
4. The surface impoundment(s) shall be designed, constructed, and maintained to prevent scouring and/or erosion of the liners and other containment features at points of discharge to the impoundments and by wave action at the water line.
5. The monitoring system shall be capable of identifying the earliest possible detection of a release from the surface impoundment.
6. The LCDS shall be designed, constructed, and maintained to prevent the buildup of hydraulic head on the underlying liner at any given time. The depth of the fluid in any LCDS sump shall be kept at the minimum and at no time shall the depth of fluid in the LCDS exceed 12 inches.
7. If leachate is detected in the LCDS sump of EVP-8 (indicating a leak in the containment structures), the Discharger shall either implement an Executive Officer approved Response Action Plan or shall:

- a. Immediately cease discharge of waste, excluding leachate to that portion of the surface impoundment, until the leak(s) can be found and repaired.
- b. Immediately collect a grab sample of the fluid in the sump and analyze it for constituents listed in Part I, Section E(4) of the MRP R7-2018-0007, which is a part of this Order (see Section E(2), below).
- c. Verbally notify Colorado River Basin Water Board staff within 24 hours of the apparent leak.
- d. Submit written notification of the release to Colorado River Basin Water Board staff within seven days, the notification should include plans for corrective measures and a time schedule to repair the containment structures.
- e. Cease the discharge of wastes to that portion of the surface impoundment until the Executive Officer has determined that repairs to the liners are complete and there is no further threat to water quality.

If the leak is determined to be significant according to the Response Action Plan, or if the Discharger does not have an Executive Officer approved Response Action Plan, the Discharger shall implement measures (a) through (e), above.

8. Leachate removed from the surface impoundment's primary LCDS shall be discharged back into the impoundment. If the surface impoundment liner is being repaired, the discharger may discharge leachate into an intact portion of the surface impoundment, another Executive Officer-approved containment structure, or as otherwise outlined in an Executive Officer-approved Response Action Plan.
9. If the Discharger needs to remove the solids that accumulate in EVP-8 to maintain minimum freeboard requirements and to maintain adequate capacity, sufficient samples of such solids shall be taken for their characterization and classification pursuant to article 2, subchapter 2, chapter 3, division 2 of Title 27. The rationale for the sampling protocol used, the results of this sampling, and a rationale for classification of the solids shall be submitted in a workplan to the Colorado River Basin Water Board for review. Before any disposal of solids, the Discharger shall obtain concurrence on the disposal method from the Colorado River Basin Water Board Executive Officer.
10. Prior to the removal of solids from EVP-8, the Discharger shall submit a solids removal plan to Colorado River Basin Water Board for review. The plan shall include provisions for removing solids without causing liner damage. Prior to removing any solids from the surface impoundment, the Discharger shall obtain written approval from the Colorado River Basin Water Board Executive Officer.

#### **D. Water Quality Protection Standards**

1. The discharge of waste shall not cause a statistically significant difference in water quality above background concentrations for each monitoring parameter at the point of compliance, pursuant to MRP No. R7-2018-0007. The Discharger shall maintain concentration limits for as long as the waste poses a threat to water quality.

2. Pursuant to section 20405 of Title 27, the point of compliance is a vertical surface located at the hydraulically downgradient limit of a surface impoundment that extends through the uppermost aquifer underlying the surface impoundment.
3. The discharge of waste shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Colorado River Basin Water Board or the State Water Board.
4. Monitoring parameters for groundwater are listed in MRP No. R7-2018-0007. Monitoring points and background monitoring points shall be those specified in MRP No. R7-2018-0007.

#### **E. Provisions**

1. The Discharger shall comply with all of the conditions of this Order. Noncompliance is a violation of the Porter-Cologne Water Quality Control Act (Water Code, § 13000 et seq.), and is grounds for enforcement action.
2. The Discharger shall comply with MRP R7-2018-0007 and future revisions thereto, as specified by the Colorado River Basin Water Board Executive Officer, which is incorporated by this reference and attached hereto.
3. Prior to any modifications in the Facility that would result in any material change in the quality or quantity of wastewater treated or discharged, or any material change in the location of discharge, the Discharger shall report all pertinent information in writing to the Colorado River Basin Water Board and obtain revised requirements before any such modifications are implemented.
4. Prior to any change in ownership or management of the Facility, the Discharger shall transmit a copy of this Order to the succeeding owner/operator, and forward a copy of the transmittal letter to the Colorado River Basin Water Board.
5. The Discharger shall ensure that all site-operating personnel are familiar with the content of this Order, and shall maintain a copy of this Order at the site.
6. Annually, prior to the anticipated rainy season, any necessary erosion control measures to precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the site.
7. **Two-weeks** prior to constructing each phase of EVP-8 (e.g., preparing foundation, installing liner, installing leak detection system, etc.), the Discharger shall notify the Colorado River Basin Water Board Executive Officer in writing.
8. Prior to beginning discharge of waste into EVP-8, the Discharger must receive a final inspection and written approval from the Executive Officer.
9. **By July 15, 2018**, the Discharger shall establish and maintain suitable Financial Assurance Instruments (Instruments) for corrective action, waste management unit (WMU) closure, and post-closure maintenance as required by Title 27. The Instruments shall be acceptable to the Colorado River Basin Water Board Executive Officer. The Discharger

shall submit to the Colorado River Basin Water Board evidence of compliance with this Task by **August 30, 2018**, and thereafter, shall demonstrate compliance with all financial instruments to the Colorado River Basin Water Board at a minimum of every five years.

10. The Discharger shall allow the Colorado River Basin Water Board, or an authorized representative, upon presentation of credentials and other documents as may be required by law, to:
  - a. Enter upon the premises regulated by this Order, or the place where records must be kept under the conditions of this Order;
  - b. Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this Order;
  - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Board Order; and
  - d. Sample or monitor any substances or parameters at the Facility at reasonable times, for the purpose of assuring compliance with this Order or as otherwise authorized by the Water Code.
11. The Discharger shall, at all times, properly operate and maintain all systems and components of treatment and control, including, but not limited to, sludge disposal facilities which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance includes, but is not limited to, effective performance, adequate process controls, adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of this Order. All systems, both those in service and reserved, shall be inspected and maintained on a regular basis. Records shall be kept of the inspection results and maintenance performed and made available to the Colorado River Basin Water Board upon demand.
12. The Discharger shall report any noncompliance that may endanger human health or the environment. Information shall be provided orally to the Colorado River Basin Water Board office and the Office of Emergency Services within 24 hours of when the Discharger becomes aware of the incident. If noncompliance occurs outside of business hours, Discharger shall leave a message on the Colorado River Basin Water Board office voice recorder. A written report shall also be provided within five (5) business days of the time the Discharger becomes aware of the incident. The written report shall contain a description of the noncompliance and its cause, the period of noncompliance, the anticipated time to achieve full compliance, and the steps taken or planned, to reduce, eliminate, and prevent recurrence of the noncompliance.
13. The Discharger shall ensure that all operating personnel are familiar with the contents of this Order.
14. The Discharger is the responsible party for the WDRs and the monitoring and reporting program for the Facility. The Discharger shall comply with all conditions of these WDRs.

Violations may result in enforcement actions, including Colorado River Basin Water Board Orders or court orders, requiring corrective action or imposing civil monetary liability or the modification or revocation of these WDRs by the Colorado River Basin Water Board.

15. The Discharger shall, within 48 hours of a significant earthquake event, submit to the Colorado River Basin Water Board a detailed post-earthquake report describing any physical damage to the containment features, groundwater monitoring and/or leachate control facilities and a corrective action plan to be implemented at the Facility, if there is damage caused by such significant earthquake event.
16. One (1) year prior to the anticipated closure of EVP-8, or any portion thereto, the Discharger shall submit a final closure and post-closure maintenance plan in accordance with Title 27 to the Colorado River Basin Water Board, for review and approval by the Executive Officer. The final closure and post-closure maintenance plan shall include seismicity studies. Closure of EVP-8 shall require the removal of all residual wastes, including liquids, sludge, precipitates, settled solids, liner materials, and adjacent natural geologic materials polluted by wastes. The removed waste shall be discharged to a waste management unit approved by Colorado River Basin Water Board Executive Officer. If after reasonable attempts, the Discharger demonstrates the removal of all remaining contamination attributable to EVP-8 is infeasible, EVP-8 shall be closed as a landfill.
17. All monitoring shall be conducted pursuant to title 27 of the California Code of Regulations.
18. The Discharger shall furnish, under penalty of perjury, technical monitoring program reports, and such reports shall be submitted in accordance with chapter 30, division 3, title 23 of the California Code of Regulations, as groundwater raw data uploads electronically over the internet into the State Water Board's GeoTracker database, found at: <https://geotracker.waterboards.ca.gov/>. Documents that are normally mailed by the Discharger, such as regulatory documents, narrative technical monitoring program reports, and such reports submissions, materials, data, and correspondence, to the Colorado River Basin Water Board shall also be uploaded into GeoTracker in the appropriate Microsoft software application, such as word, excel, or an Adobe Portable Document Format (PDF) file. Large documents are to be split into manageable file sizes appropriately labelled and uploaded into GeoTracker. The Facility is assigned GeoTracker Global ID No. WDR100028549.
19. In accordance with Business and Professions Code sections 6735, 7835, and 7835.1, engineering and geologic evaluations and judgments shall be performed by or under the direction of California registered professionals (i.e., civil engineer, engineering geologist, geologist, etc.) competent and proficient in the fields pertinent to the required activities. All technical reports required under this Order that contain work plans, that describe the conduct of investigations and studies, or that contain technical conclusions and recommendations concerning engineering and geology shall be prepared by or under the direction of appropriately qualified professional(s), even if not explicitly stated. Each technical report submitted by the Discharger shall contain a statement of qualifications of the responsible licensed professional(s) as well as the professional's signature and/or stamp of the seal. Additionally, all field activities are to be conducted under the direct supervision of one or more of these professionals.

20. All technical reports required in conjunction with this Order shall include a statement by the Discharger, or an authorized representative of the Discharger, certifying under penalty of perjury under the laws of the state of California, that the reports were prepared under his or her supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluated the information submitted, and that based on his or her inquiry of the person or persons who manage the system, the information submitted is, to the best of his or her knowledge and belief, true, complete, and accurate.
21. This Order does not authorize violation of any federal, state, or local laws or regulations.
22. This Order does not convey property rights of any sort, or exclusive privileges, nor does it authorize injury to private property or invasion of personal rights, or infringement of federal, state, or local laws or regulations.
23. This Order may be modified, revoked and reissued, or terminated. The filing of a request by the Discharger for an Order modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any Order condition. Causes for modification include, but are not limited to, the promulgation of new regulations, modification of land application plans, adoption of new regulations by the State Water Board, and other revisions of the Basin Plan.

I, Jose L. Angel, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Order adopted by the California Regional Water Quality Control Board, Colorado River Basin Region, on April 12, 2018.

  
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JOSE L. ANGEL, P.E.  
Executive Officer



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION

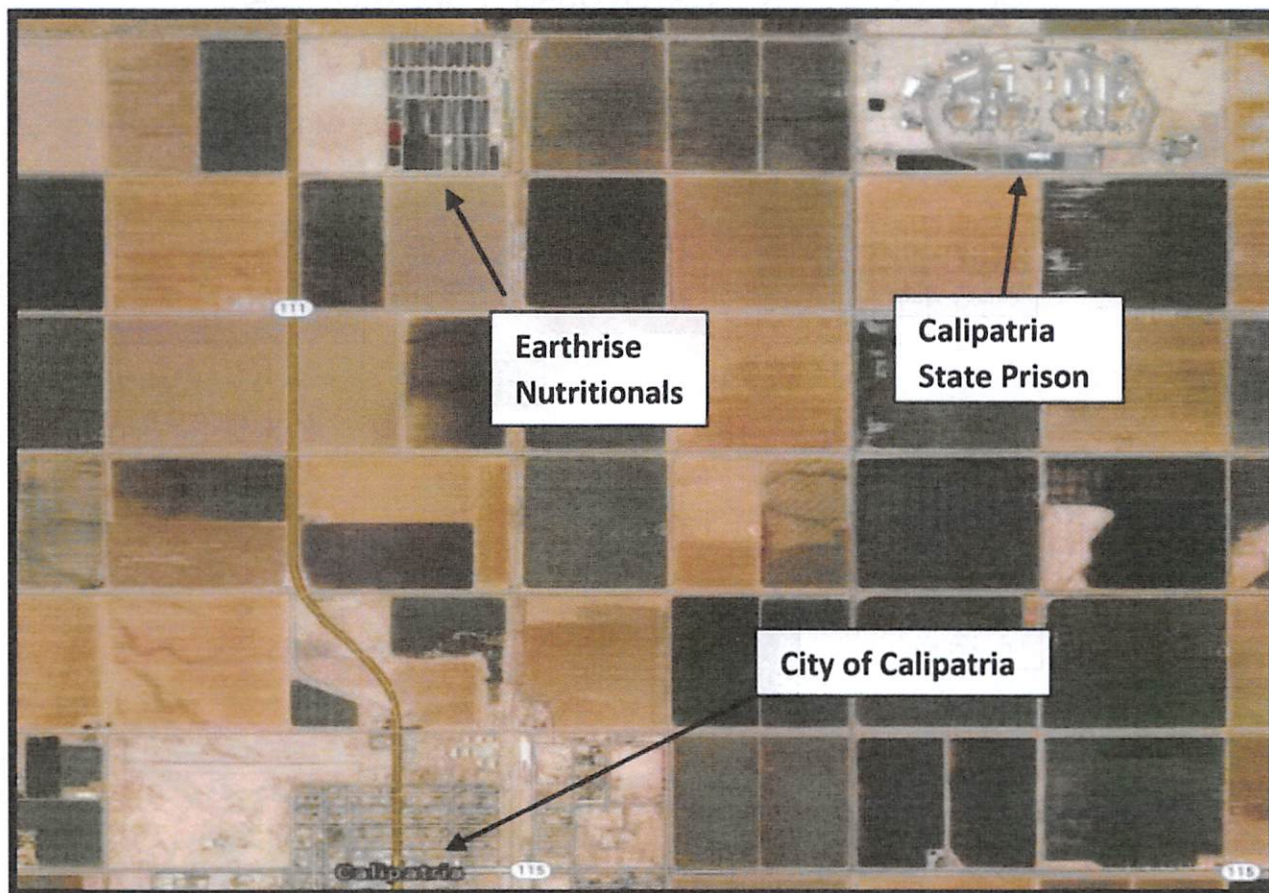


Figure 1 – Site Location and Vicinity

EARTHRISE NUTRITIONALS, LLC, OWNER/OPERATOR  
IMPERIAL VALLEY BIO-PRODUCTS FACILITY  
Calipatria – Imperial County  
S/E ¼ of Section 33, and portion of SW ¼ of Section 34, T11S, R14E, SBB&M

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
COLORADO RIVER BASIN REGION

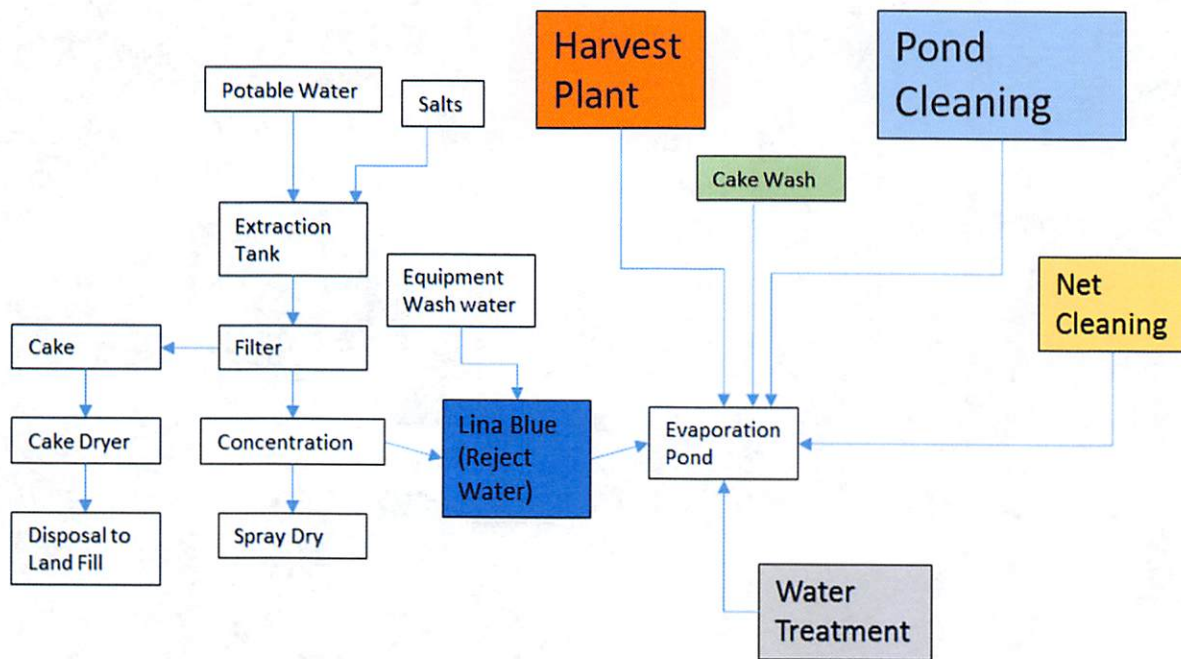


Figure 2 – Schematic Diagram of Wastewater Production Process

EARTHRISE NUTRITIONALS, INC., OWNER/OPERATOR  
IMPERIAL VALLEY BIO-PRODUCTS FACILITY  
Calipatria – Imperial County  
S/E ¼ of Section 33, and portion of SW ¼ of Section 34, T11S, R14E, SBB&M



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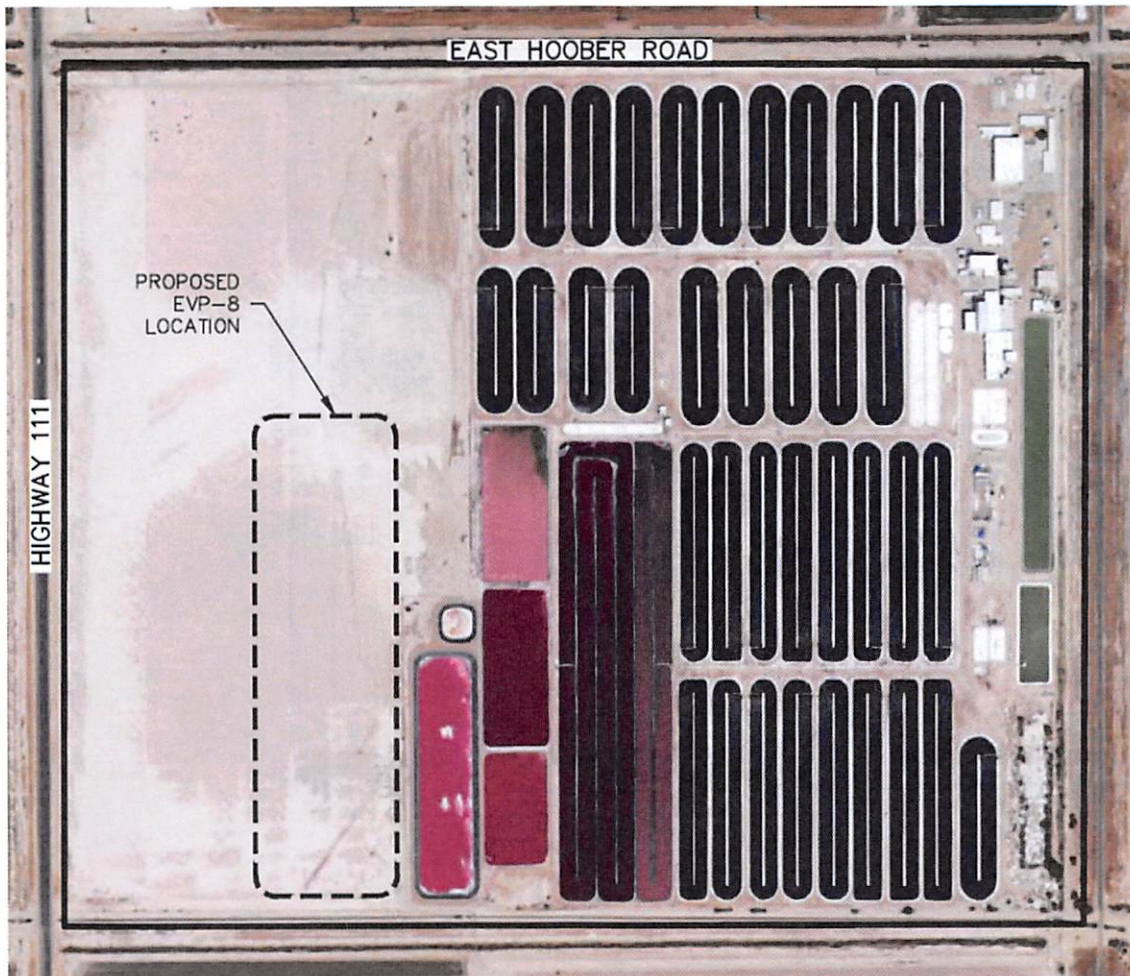


Figure 3 – Proposed Facility Layout

EARTHRISE NUTRITIONALS, INC., OWNER/OPERATOR  
IMPERIAL VALLEY BIO-PRODUCTS FACILITY  
Calipatria – Imperial County  
S/E ¼ of Section 33, and portion of SW ¼ of Section 34, T11S, R14E, SBB&M

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
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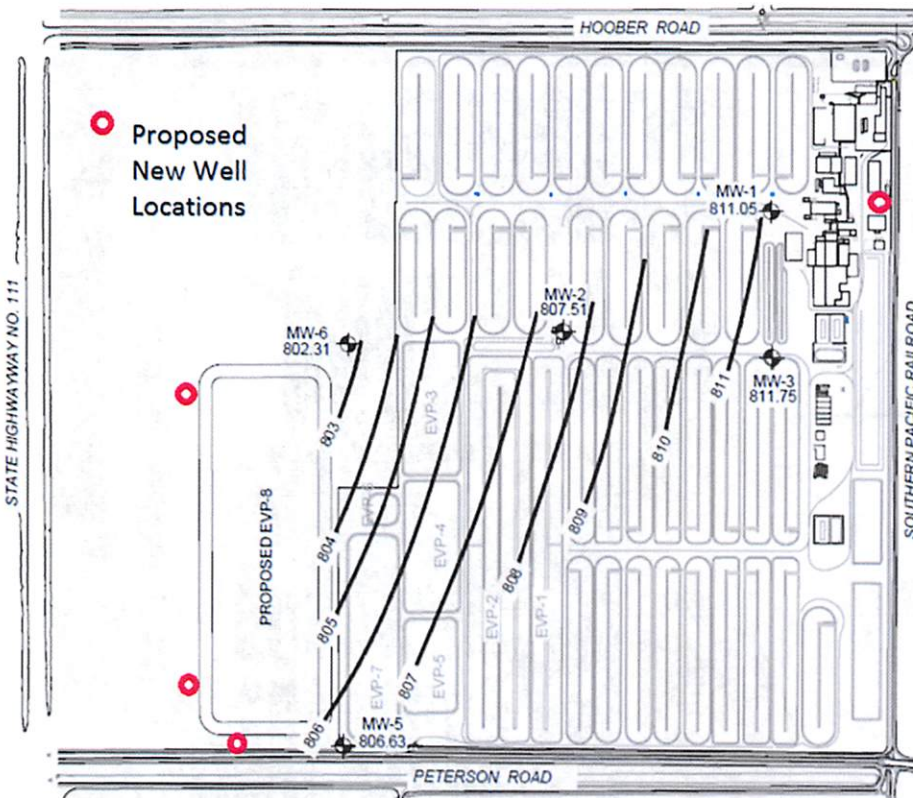


Figure 4 – Groundwater Elevations and Proposed Well Locations

EARTHRISSE NUTRITIONALS, INC., OWNER/OPERATOR  
IMPERIAL VALLEY BIO-PRODUCTS FACILITY  
Calipatria – Imperial County  
S/E ¼ of Section 33, and portion of SW ¼ of Section 34, T11S, R14E, SBB&M