

STATE OF MISSISSIPPI SOLID WASTE MANAGEMENT PERMIT

TO OPERATE A SOLID WASTE MANAGEMENT FACILITY IN
ACCORDANCE WITH THE REGULATIONS GOVERNING
SOLID WASTE MANAGEMENT

THIS CERTIFIES THAT

Denali Water Solutions, LLC

has been granted permission to operate a solid waste management facility

located at

Sections 11, 13, 14, 15, 21, 22, 23, 24, 27, 28, 33, 34; Township 9N; Range 2W

Sections 1, 2, 3, 4, 11, 12, 13, 14; Township 10N; Range 1W

Sections 26, 27, 34, 35; Township 10N; Range 2W

Sections 33, 34, 35, 36; Township 11N; Range 1W

Sections 6, 7; Township 10N; Range 1E

In Yazoo County

under the name of

Denali Water Solutions Land Application Sites

This permit is issued in accordance with the provisions of the Mississippi Code Annotated, and the regulations and guidelines adopted and promulgated thereunder

MISSISSIPPI ENVIRONMENTAL QUALITY PERMIT BOARD



AUTHORIZED SIGNATURE

MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY

Issued: AUG 19 2015

Expires: JUL 31 2025

Permit No. SW0820030572

CONDITIONS

A. EFFECT OF PERMIT

The permittee shall operate the solid waste management facility in accordance with the Mississippi Nonhazardous Waste Management Regulations (state regulations), applicable federal regulations, and conditions of this permit.

B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for noncompliance with the terms and conditions of the permit. The filing of a request for a permit modification, revocation and reissuance, or termination or the notification of planned changes or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition.

C. SEVERABILITY

The provisions of the permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

D. DUTIES AND REQUIREMENTS

1. Duty to Comply. The permittee shall comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the solid waste law and regulations promulgated thereunder and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.
2. Duty to Reapply. If the permittee wishes to continue an activity allowed by this permit after the expiration date of this permit, the permittee must submit a complete application for a new permit at least 180 days before this permit expires.
3. Duty to Mitigate. The permittee shall take all reasonable steps to minimize, prevent, or correct any adverse impact on human health or the environment resulting from noncompliance with this permit.
4. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all equipment and systems which are installed or used by the permittee to achieve compliance with the conditions of this permit and application as submitted and approved by the

Department of Environmental Quality (Department).

5. **Duty to Provide Information.** The permittee shall furnish to the Department, within a reasonable time, any relevant information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.
6. **Inspection and Entry.** The permittee shall allow an authorized representative of the Department upon the presentation of credentials and other documents as may be required by law to:
 - (a) Enter on the permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of this permit;
 - (b) Have access to and copy at reasonable times any records that must be kept under the conditions of this permit;
 - (c) Inspect at reasonable times any facilities, equipment, practices, or operations regulated or required under this permit;
 - (d) Sample or monitor at reasonable times for the purposes of assuring permit compliance.
7. **Transfer of Permits.** This permit is not transferable to any person except after notice to and approval of the Mississippi Environmental Quality Permit Board. The Permit Board may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary.

E. SITE SPECIFIC REQUIREMENTS

1. Authorized Waste.

The permittee is authorized to land apply municipal waste water sludge generated at the City of Jackson, MS Savanna Street WWTP. The Department may approve sludges from new sources after having received and reviewed written documentation of the name and address of the generator, compliance with Class B pathogen requirements in 40 CFR 503.32 by the generator, if applicable; the sludge analysis for all parameters listed under paragraph E.4.d. of this permit, and any other information deemed pertinent.

2. Area of Application.

- a. Sludges shall be land applied to the approved areas only. Approved areas as designated in the application include the following (all acreages exclude buffer zones):

- 1) Billy Joe Ragland Sites (1,841 total acres)
 - a) Farm 1,1A – 240 acres located in Sections 15 and 21, Township 9N, Range 2W
 - b) Farm 3 – 151 acres located in Sections 22 and 27, Township 9N, Range 2W
 - c) Farm 6 – 168 acres located in Section 21, Township 9N, Range 2W
 - d) Farm 7 – 68 acres located in Section 23, Township 9N, Range 2W
 - e) Farm 8 – 220 acres located in Sections 28, 33, and 34, Township 9N, Range 2W
 - f) Farm 10 – 624 acres located in Sections 26, 27, 34, and 35, Township 10N, Range 2W
 - g) Farm 11 – 196 acres located in Sections 11, 13, 14, and 24, Township 9N, Range 2W
 - h) Farm 12 – 17 acres located in Section 22, Township 9N, Range 2W
 - i) Farm 13 – 34 acres located in Section 35, Township 10N, Range 2W
 - j) Farm 14 – 123 acres located in Sections 11, 13, and 14, Township 10N, Range 1W
- 2) David Dooley Sites (2,899 total acres)

Farm 15 – 2,899 acres located in Sections 33, 34, 35, and 36, Township 11N, Range 1W and Sections 1, 2, 3, 4, and 12, Township 10N, Range 1W and Sections 6 and 7, Township 10N, Range 1E

The total allowable area designated for waste application as described by the permit application is 4,740 acres.

- b. No sludges shall be applied on wetland areas, unless such application is conducted in accordance with requirements of the U. S. Army Corps of Engineers and/or U.S.D.A. Soil Conservation Service.
- c. The permittee shall insure that biosolids are land applied in a hydrologic section where the historic high water table is at a safe depth below the zone of incorporation.

- d. No sludges shall be applied in any location such that active or inactive hydrocarbon wells or water wells would be present beneath the actual application area without proper demonstration that the well has been adequately plugged.
- e. No sludges shall be applied within 0.5 mile of a public water supply intake structure in a surface water body or within 1000 feet of any existing public water supply well.
- f. No sludges shall be applied within 300 feet of any inhabited building, unless otherwise approved by the Department.
- g. No sludges shall be applied within 0.5 mile of any licensed school, licensed day-care center, licensed hospital, or licensed nursing home or within 1000 feet of any church unless approved by the Department. A smaller setback distance may be allowed only if a written agreement is obtained from the owner or appropriate representative stating that a smaller setback is acceptable.
- h. All buffer distances from the edge of waste application to the property line shall be at least 200 feet. If there is visual screening, the buffer distance should be at least 100 feet.
- i. The following approximate areas located within the floodway or special flood hazard areas (100 year flood plain) shall be avoided during the period from November through April unless approved for land application on a case-by-case basis:
 - 1) Farm 1 – surrounding streams
 - 2) Farm 3 – All except the NW corner
 - 3) Farm 6 – surrounding streams
 - 4) Farm 7 – all except the W and NW corner
 - 5) Farm 8 – SE corner and around streams
 - 6) Farm 10 – surrounding streams and other water bodies
 - 7) Farm 11 – southern half
 - 8) Farm 12 – far east side around nearby streams
 - 9) Farm 13 – surrounding streams
 - 10) Farm 14 – central surrounding streams

11) Farm 15 – surrounding streams

The boundaries of these areas to avoid shall be determined based on the delineation of the floodway and the special flood hazard areas according to the most recent Federal Emergency Management Agency Flood Insurance Rate Maps.

- i. The permittee shall maintain a minimum buffer distance of 250 feet between the land application area and the banks of any river, stream, lake, reservoir or coastal water. The Department reserves the right to modify these buffer distances should the conditions of the operation warrant such change.

3. Operating Conditions.

The permittee shall operate the facility in accordance with the following:

- a. Actual application area boundaries as identified in the application shall be clearly marked and maintained. Each field should be adequately marked so that waste will not enter field buffer zones during application and incorporation.
- b. Access to fields utilized for land application shall be reasonably controlled to restrict unauthorized personnel from entering the land application areas during active land application activities and also for at least 12 months following the final application.
- c. Sludge shall be applied to the fields according to the approved plan of operation by the process of surficial application followed by incorporation into the soil within 6 hours of application. Upon incorporation, no sludge whatsoever shall be exposed on the ground surface.
- d. The land application activities must be conducted in a manner that would prevent objectionable off-site odors, vectors, and other off-site nuisances.
- e. One of the vector attraction reduction requirements in 40 CFR 503.33(b).(1)-(10) shall be met when bulk sewage sludge is land applied to the site.
- f. No sludge or other residue shall be applied to saturated ground. Saturation may be determined by digging a hole one-foot deep at the lowest point of the application area and observing for 30 minutes. If water appears in the hole, the soil is considered to be saturated.

- g. No contaminant shall be allowed to enter any surface water or groundwater as a result of runoff or infiltration such that a violation of any water quality standard established by the Department occurs.
- h. Where sludge is applied, no crops that will be consumed raw by humans shall be planted until at least 18 months have passed from the date of the last application. For all other crops grown for indirect human consumption, at least 30 days shall pass between the date of the last application and the date the crop is planted.
- i. The permittee shall maintain the soil pH of each receiving field at or above 6.5 unless otherwise approved by the Department.
- j. Grazing of animals shall be strictly prohibited during operations and 30 days after application of sludge.

4. Monitoring, Records and Reporting.

Unless otherwise approved by the Department, the permittee shall conduct sampling, monitoring and reporting activities as follows:

- a. Sludge and soil samples taken for the purpose of monitoring shall be representative.
- b. The permittee shall retain records of all monitoring information, including copies of all reports and records required by this permit, for the operating life of the facility.
- c. Records of monitoring information shall include:
 - 1) The dates, exact place and time of sampling or measurements;
 - 2) The individuals who performed the sampling or measurements;
 - 3) The date(s) analyses were performed;
 - 4) The individual(s) who performed the analyses;
 - 5) The analytical techniques or methods used; and
 - 6) The results of such analyses.

- d. The permittee shall not land apply the sludge if the concentration of any pollutant (dry weight basis) in the sludge exceeds the following ceiling concentrations:

<u>Pollutant</u>	<u>Ceiling Concentration (milligrams per kilogram)</u>
Arsenic	75
Cadmium	85
Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

- e. Prior to land application, the permittee shall provide an appropriate demonstration that the 40 CFR 503.32 pathogen reduction requirements are not applicable or necessary or shall comply with either of the aforementioned Class B pathogen reduction requirements for all sludges.

- f. The permittee shall not exceed the following annual application rates for Plant Available Nitrogen (PAN) in accordance with the cover crop as listed below:

<u>Crop</u>	<u>Maximum PAN (Lbs/Acre/Year)</u>
Bahia Grass	160
Bermuda Grass	300
Fescue	120
Cotton	180
Corn	240
Clover, Alfalfa, Vetch	450
Grain Sorghum	180
Silage Sorghum	300
Millet	150
Rye Grass	220
Soybeans	300
Wheat	135

- g. The permittee shall not exceed an annual application rate for cadmium of 0.45 lbs/acre/year.
- h. The permittee shall not exceed the following cumulative pollutant loading rates during the life of the site:

Cumulative Pollutant Loading Rates

<u>Pollutant</u>	<u>Pounds Per Acre</u>
Arsenic	36
Cadmium	34
Copper	1338
Lead	267
Mercury	15
Nickel	374
Selenium	89
Zinc	2497

- i. The permittee shall maintain records listing the date(s) and areas on which sludge was applied, the quantity and source of sludge applied, and the types of crops grown on each area.
- j. The permittee shall prepare the following information for sludges from each source:
 - 1) An analysis performed (on dry weight basis) in accordance with the sampling protocol and schedule detailed in the approved Plan of Operation, with a minimum frequency meeting the requirements in 40 CFR 503.16, to include pH, TKN, ammonia-nitrogen, nitrate-nitrogen, total arsenic, total cadmium, total copper, total lead, total mercury, total molybdenum, total nickel, total selenium, total zinc, PCB, percent solids, the density of fecal coliform, and oil and grease.
 - 2) A description of compliance with the Class B pathogen requirements in paragraph E.4.e of this permit.
 - 3) A description of compliance with the vector attraction reduction requirement in paragraph E.3.e of this permit.
 - 4) The following signed and dated certification statement at a frequency of at least once a year provided there is no occurrence of any noncompliance:

"I certify, under penalty of law that the Class B pathogen requirement in paragraph E.4.e and the vector attraction reduction requirement in paragraph E.3.e of the site specific conditions of Permit No. SW0820030572 have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that all the site specific conditions of the permit have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

In the event of any noncompliance, the permittee shall notify the Department as soon as possible. Thereafter, the permittee shall submit this certification statement at a frequency as approved by the Department.

- k. The permittee shall annually, during the month of December, obtain composite samples from each farm listed in E.2.a. of this permit. One composite sample should be taken for every 50 acres or fraction thereof of each farm. Each composite sample should consist of five (5) evenly spaced grab samples. The soil samples shall be analyzed for pH, nitrate, total arsenic, total cadmium, total copper, total lead, total mercury, total nickel, total selenium, total zinc, and oil and grease.
- l. The permittee shall submit to the Department an annual report no later than February 28 of the following calendar year indicating the results of all monitoring required pursuant to paragraph i, j and k above. The annual report shall include the total quantity of sludge applied to each field, the soil analysis from each field, and the quantity of plant available nitrogen (PAN), arsenic, cadmium, copper, lead, mercury, nickel, selenium and zinc and oil and grease applied to each field in lb/acre/year.