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

Geo Specialty Chemicals

has been granted permission to operate a solid waste management facility

located at

Sections 2 and 11, Township 8N, Range 20

under the name of

Stanley Stephens Property

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: MAR 0 7 2013
Expires: FEB 2 8 2023

Permit No. SW0390030566

62539

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.

8. Signature Requirements. An application for the re-issuance, modification or transfer of this solid waste management permit and all permits required by this permit or other information requested by the Permit Board shall be signed as follows:

   a. For a corporation: a president, vice-president, secretary, or treasurer 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;

   b. For a partnership or sole proprietorship: a general partner of the proprietor, respectively;

   c. For a municipality, county, state, federal, or other public agency: either a principal executive officer or ranking elected official:

d. The signature of a Duly Authorized Representative (DAR) shall be a valid signature under the state regulations, in lieu of the signatures described previously provided the following conditions are met:

1. The DAR is an employee of the entity holding the solid waste management permit.

2. The DAR is identified to the Department by the ranking officer of the corporation, partnership, proprietorship, municipality, county, state, federal or other public agency.

3. The DAR is responsible for the overall management of the solid waste facility.

1. Property Rights. It is the responsibility of the permittee to possess or acquire a sufficient interest in or right to the use of the property including access route. The issuance of this permit does not convey any property rights or interest in either real or personal property; nor does it authorize any injury to private property, invasion of personal rights, or impairment of previous contract rights; nor any infringement of Federal, State or local laws or regulations.

E. SITE SPECIFIC REQUIREMENTS

1. Authorized Waste.

The permittee is authorized to land apply the Processed Silica from the Geo Specialty Chemicals, LLC facility in Monticello, MS and lime sourced from local agricultural supply centers.

2. Area of Application.

a. The Processed Silica and lime shall be land applied to the approved areas only. Approved areas as designated in the application include the following Stephens properties (all acreages exclude buffer zones):

1. Tract 2 A – 4.7 acres

2. Tract 2 B – 8.8 acres

3. Tract 2C – 21.3 acres

4. Tract 11A – 14.8 acres

The total allowable area designated for waste application as described by the permit application is 49.6 acres.

b. No Processed Silica 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. No Processed Silica 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.

d. No Processed Silica 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.

e. No Processed Silica shall be applied within 300 feet of any inhabited building, unless otherwise approved by the Department.

f. No Processed Silica 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.

g. All buffer distances from the edge of waste application to the property lines including roadways shall be at least 200 feet, unless on-site screening, whether natural or artificial, will restrict the offsite view of the land application, in which case the setback shall be no less than 100 feet.

h. No Processed Silica shall be applied within 250 feet of 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.

i. No Processed Silica shall be applied within 50 feet of the banks of any pond.

3. Operating Conditions.

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

a. The Processed Silica shall be applied at a rate of no more than 433 cubic yards/acre/application, unless otherwise approved by the Department.

b. Lime shall be applied at an appropriate rate to maintain a soil pH at or above 6.5.

c. Access to fields utilized for land application shall be reasonably controlled to restrict unauthorized personnel from entering the land application areas during operation and also for at least 12 months following the final application.

d. The Processed Silica and lime shall be applied as a one-time application only to each field. The application shall occur according to the approved plan of operation by the following process:

1. The site will be prepared for receiving Processed Silica by loosening (discing) a minimum depth of 6 inches of the surface layer.
2. The material will be spread by an on-site dozer to a depth of no more than 4 inches within 24 hours of delivery.
3. Lime will be incorporated into the Processed Silica within 24 hours of delivery of the Processed Silica.
4. Within 72 hours of delivery, the Processed Silica and lime will be incorporated into the soil by discing, chisel plowing or tilling to a minimum depth of 6 inches.
5. The area will be graded, seeded with Bermuda grass, and fertilized, within 6 weeks of delivery of the Processed Silica, unless otherwise approved by the Department.

e. The land application activities must be conducted in a manner that would prevent objectionable off-site odors, vectors, off-site migration through wind or truck ingress/egress, and other off-site nuisances.

f. No Processed Silica 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. Berms shall be constructed and maintained around all ponds located near the application areas to prevent surface water run-off entering into the ponds.

h. Food crops, feed crops, and fiber crops shall not be planted for 30 days after application of the Processed Silica.

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 the Processed Silica.

4. Monitoring, Records and Reporting.

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

a. Processed Silica and soil samples taken for the purpose of monitoring shall be representative.

b. The permittee shall obtain at least one composite soil sample from each field of the permitted site on which Processed Silica was applied. The soil sample shall be collected in accordance with the approved permit application. All soil samples shall be analyzed for pH, aluminum, calcium, phosphorus, potassium, sulfur, nitrate, total arsenic, total cadmium, total copper, total lead, total mercury, total molybdenum, total nickel, total selenium, and total zinc.

c. 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.

d. 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.

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

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

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:

Crop	Maximum P.A.N. (Lbs/Acre/Year)
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

Pollutant	Pounds Per Acre
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 Processed Silica was applied, the quantity of Processed Silica and lime applied, and the types of crops grown on each area.

j. 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 e, f, and g above. The annual report shall include:

1. the total quantity of Processed Silica and lime applied to each field,
2. the dates of each application per field,
3. the soil analysis from each field,
4. the quantity of plant available nitrogen (PAN), arsenic, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium and zinc and oil and grease applied to each field in lb/acre,
5. the types of crops grown on each field, and
6. completion date of project.