

# **SUMMARY RESPONSE TO COMMENTS AND QUESTIONS**

**South Carolina Department of Health and Environmental Control  
Bureau of Land and Waste Management  
Division of Mining and Solid Waste Management**

**Mine Operating Permit I-002093  
Culclasure Farm Tract, LLC  
Culclasure Farm Mine  
October 13, 2017**

This Summary Report outlines specific issues, within the jurisdiction of the South Carolina Department of Health and Environmental Control (DHEC), considered in review of the application submitted for the proposed Culclasure Farm Mine (Culclasure) on Horsefeathers Lane in Calhoun County. This Summary Report is being provided, as promised, to address many of the issues raised at DHEC's Public Meeting held on July 20, 2017. This Summary Report is specific to DHEC's technical review for the Mine Operating Permit under the authority of the South Carolina Mining Act (Act).

In order to construct and operate the Culclasure Farm Mine and its associated process equipment, a National Pollutant Discharge Elimination System (NPDES) Permit and a Mine Operating Permit are required by state law. A NPDES Permit (SCG731317) was issued by DHEC on January 12, 2016. DHEC is currently accepting comments on the Draft Mine Operating Permit and will hold a public hearing on November 16, 2017 for this purpose. The draft permit, mine application, reclamation plan, and other related information is available on DHEC's website at [www.scdhec.gov/publicnotices](http://www.scdhec.gov/publicnotices).

**General overview:** DHEC's Mining and Solid Waste Division has written a draft mine operating permit after careful review of all information submitted by the applicant, as well as all comments received from governmental agencies and interested persons. If approved, the draft permit will require the mine operator to comply with the South Carolina Mining Act and the South Carolina Code of Regulations. All additional comments received through November 30, 2017 will be reviewed by DHEC prior to making a final decision on the draft permit.

**The South Carolina Mining Act:** The legislative purpose of the Act is to provide that: (1) the usefulness, productivity, and scenic value of all lands and waters involved in mining within the state receive the greatest practical degree of protection and restoration; and that (2) no mining may be carried on in the state unless plans for the mining include reasonable provisions for protection of the surrounding environment and for reclamation of the area of land affected by mining.

The Act provides specific criteria for review of mine permit applications by DHEC. The Act does not supersede local zoning ordinances. Issues related to zoning (i.e., property value and industrial development) are under the jurisdiction of county and municipal planning departments and governed by zoning and land use regulations. DHEC has not been given the authority to consider the effect of a mining operation on property values. DHEC is required to evaluate the application in a timely manner and to consider relevant environmental issues.

**Application for the Mine Operating Permit:** DHEC received the Application for a Mine Operating Permit from Culclasure for the proposed Culclasure Farm Mine on July 31, 2015. An *Intent to Mine* notice was published in *The State* newspaper on October 2, 2015 and

October 9, 2015. The notice was mailed to adjacent landowners, government and regulatory agencies, and other interested parties. Due to the flooding disaster in South Carolina that took place during this time, the comment period was extended from October 24, 2015 until November 9, 2015.

In response to the Intent to Mine notice, DHEC received multiple requests to hold a public hearing. DHEC acknowledged that a public hearing would be held at a later date and that notice of the hearing would be provided at least thirty (30) days prior to the hearing date. DHEC requested supplemental information from the applicant. Culclasure submitted a revised application on February 17, 2017. DHEC published a public notice of the revised application in *The State* newspaper on April 10, 2017 and April 17, 2017 with an extended comment period until ten (10) days after the public hearing. On June 29, 2017 DHEC informed concerned citizens about an informal public meeting to be held at Sandy Run School on July 20, 2017. At this meeting, DHEC committed to giving a 30-day advance notice of the public hearing.

A public hearing will be held by DHEC on November 16, 2017. The *Notice of Public Hearing* was mailed to interested parties on October 13, 2017. The *Notice of Public Hearing* will be published in *The Calhoun Times* newspaper on October 12, 2017 and October 19, 2017. The comment period has been extended through **November 30, 2017**.

**Permit Application Specifications:** Culclasure has submitted a permit application proposing to mine sand/clay, sand, and gravel. The permitted area of this mine operation is composed of a tract of land totaling 68 acres (Calhoun County TMS # 049-00-01-010). The current topography of the permitted area ranges from 340ft to 170ft above sea level (msl). Pit #1 (south of Horsefeathers Lane) will be excavated to a maximum depth of 242ft msl or 44ft below the ground surface (bgs) and Pit #2 (north of Horsefeathers Lane) will be excavated to a maximum depth of 257ft msl or 60ft bgs. (measured from the original ground surface elevation to final elevation at that location).

Land within a mine operating permit is designated according to the permitted use (*Affected acres, Future Reserves and Buffer Areas*). The **68.0 acre Permitted area** is comprised of *Affected acres* and *Buffer Areas*. The following list provides an area description, type of activities, and designated acreage for each component of the Permitted area, if approved:

1) **Affected Area – 40.3 acres** (Pit #1=29.1 ac., Pit #2=11.2 ac.). The affected area is comprised of all lands to be disturbed by mining activities (pit, sediment basins, haul roads, berms, processing area, overburden storage piles, etc.). Of the 40.3 affected acres, up to **23.3 acres may be affected at any one time (bonded)**. The bonded acreage includes Pit #1 less the vegetative filter (5.8 ac.) The affected area is subject to reclamation requirements.

2) **Future Reserves – 0.0 acres.** No land has been designated as future reserves.

3) **Buffer area – 27.7 acres.** Buffer is land not to be disturbed by mine activity. Buffers are used to lessen potential effects to surrounding land (setbacks to property boundaries, public roads, wetlands, wildlife, etc.). Any land disturbance not consistent with accepted silviculture practices in the buffer areas would require the Mine Operating Permit to be modified *prior* to any such disturbance. Appropriate silviculture practices may be utilized to manage upland buffer areas allowing the thinning of timber under the direction of a SC Licensed Professional Forester.

**Mine Reclamation:** The Act defines reclamation as the reasonable rehabilitation of affected land (mined or otherwise disturbed) to a useful purpose and the protection of natural resources in surrounding areas. The Act does not require the land disturbed by mining to be returned to its original state. Reclamation of the mine to a specific land use is based on many factors; including, but not limited to; the method of mining, the material mined, the geology and topography of the area, size, surrounding land uses and the desired use for the former mine site. Lakes or ponds, grassland, woodland, cropland, parks or recreational developments, residential or commercial developments may be acceptable reclamation objectives.

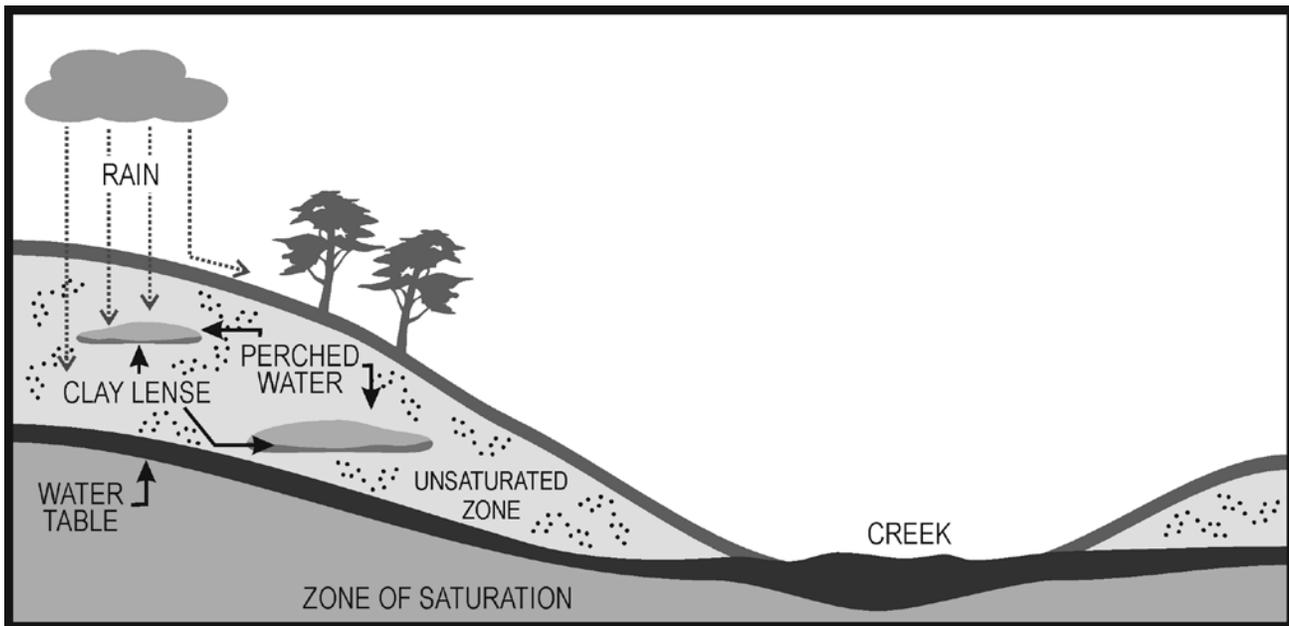
If approved, Culclasure would be allowed to affect 40.3 acres throughout the life of the mine. A reclamation bond would be required prior to issuance of a mine operating permit. The reclamation bond would be set by DHEC based on the requirements of the Act (Section 48-20-110) and Regulations (R.89-200). The reclamation bond would remain in effect with DHEC until the mine site has been reclaimed to regulatory standards and released. Reclamation bonds are in place to ensure proper reclamation of disturbed areas (it does not serve as financial assurance for potential off-site impacts).

The approved reclamation plan states the site will be reclaimed to grasslands and ponds. Pit slopes will be vegetated and no steeper than a 3h:1v gradient. Final pond slopes will be graded to no steeper than a 3h:1v gradient to a 6' depth. Other disturbed areas (i.e., plant, processing area) will be graded and vegetated as grassland. Once all mining has ended and the site meets reclamation standards, the mining permit would be canceled; at that time the Mining & Reclamation Program has no further jurisdiction over land use.

**Groundwater:**

Groundwater is water that collects or flows below the soil surface. The main source for groundwater is rainfall. Runoff from rainwater can go directly into water bodies or seeps into the ground. When water soaks (infiltrates) into the ground, gravity pulls the water down through the spaces between the soil particles and rocks until it reaches a depth where all of the spaces are filled with water or saturated. The water level where the soils are saturated is called the water table. The area above the water table is called the unsaturated zone, the area below the water table is the saturated zone.

As shown in the following diagram, the water table is not always at the same depth below the land surface - the level moves up or down depending on rainfall and the rate water is removed (i.e. irrigation, industry, well, etc.). The unsaturated zone may contain pockets (lenses) of tightly bound clayey soils that do not allow the water to infiltrate. In this situation, the water will collect (perch) on the top of these impermeable lenses. This is "perched water" and is not the true water table along the top of the saturated zone.



**Groundwater Availability:** DHEC does consider the potential affect of mining activities on the quantity of groundwater available to nearby water supply wells and lakes/ ponds. Intercepting the water table is not expected at the proposed mining depth of the Culclasure Farm Mine. The base of the mine will range from 242' MSL (Pit #1) to 257' MSL (Pit #2).

If a water supply well complaint is received, DHEC is responsible for determining if dewatering activities at the mine have caused the problem. During this process, the operator is required to immediately supply the well owner with a temporary water supply until DHEC completes its investigation. If DHEC determines the mine caused the problem, the operator is responsible for repairing, deepening or re-drilling the affected well(s).

**Well Inventory:** DHEC is encouraging local residents who are concerned with potential impacts to their wells to complete a *Water Well Information* form. This form was made available at the July 20, 2017 Public Meeting and also is available on the DHEC Public Notice webpage at [www.scdhec.gov/publicnotices](http://www.scdhec.gov/publicnotices). DHEC will keep this information on file for future reference. There is a low potential for water supply wells to be impacted at the proposed mining depths.

**Surface Water:**

**Discharge Monitoring and Sediment Control:** Culclasure Farm Mine is permitted to discharge wastewater and stormwater through outfall 001 in accordance with the *NPDES General Permit for Discharges Associated with Nonmetal Mineral Mining Facilities (SCG731317)*. Discharges from the outfall will be subject to numeric effluent limits (total suspended solids and pH) and other permit requirements that are protective of human health and the environment.

Culclasure has indicated that during future operations water from the processing plant will be routed in a closed circuit system through the collection pond where the clean water is then recycled for use in the processing plant. Under normal rainfall conditions, this closed circuit system will operate without discharging into waters of the state. However, in extreme or prolonged rainfall events, there is a potential for the water volume to exceed the capacity of the wash circuit system. Under these circumstances any excess water may be discharged into

waters of the state through the regulated outfall 001.

The primary control for sediment will be to contain the stormwater (runoff from rainfall) from the excavated area in the pit. This water will be conveyed to a sediment basin designed to allow the sediment to settle out of the stormwater prior to being discharged. The NPDES permit requires Culclasure to have proper Best Management Practices (BMPs) and a Stormwater Pollution Prevention Plan (SWPP) in place. Furthermore, Culclasure shall operate the Culclasure Farm Mine in accordance with the *Erosion and Sediment Control Design Calculations* (Rev. 2 dated June 20, 2017) and the approved mine maps.

The NPDES general permit requires that stormwater outfalls have appropriate BMP's to minimize the discharge of pollutants. The permit also requires benchmark monitoring of stormwater discharges. Benchmark monitoring involves collecting a quarterly sample during the first 30 minutes of the stormwater discharge and analyzing it for Total Suspended Solids. If the average of the four quarterly benchmark samples is greater than 100 mg/l Total Suspended Solids, then the operator must either improve their BMP's or document that it is not feasible to improve their BMP's. If the average of the four quarterly benchmark samples is less than 100 mg/l Total Suspended Solids, benchmark sampling is no longer required during this permit term for that outfall.

### **Wetlands Delineation / Impacts and Stream Buffers:**

**Wetlands:** The U.S. Army Corps of Engineers (ACOE) issued a Preliminary Jurisdictional Determination (PJD) dated September 14, 2017 (SAC 2017-00771) concurring with a delineation depiction entitled "Delineated Waters of the United States Map" dated May 2017 prepared by Johnson, Mirmiran, and Thompson, Inc. (JMT). The report identifies approximately 8.87 acres of federally defined freshwater wetlands and approximately 3,986 linear feet of other aquatic resources that are presumed to be waters of the United States that are subject to regulatory jurisdiction under Section 404 of the Clean Water Act (CWA).

Prior to excavating the sump hole within wetlands, Culclasure must provide either (1) the required federal and state permits or (2) a written statement from the Army Corps stating no permit is required. BMPs along the pumping station access road shall be properly installed and maintained to minimize potential impacts to Sembly Branch as required by the NPDES permit.

**Sembly Branch Water Withdrawal:** If approved, Culclasure will utilize a surface water withdrawal intake as shown on Mine Map Drawing No. 2 of 7 (Rev. 2 dated 9/20/17). Regulation R.61-119 Surface Water Withdrawal, permitting and reporting applies only to surface water withdrawals exceeding 3,000,000 gallons in one month. Culclasure has designed the pump and intake structure to not exceed the limit. The permit is conditioned to require the operator to maintain a pumping log documenting the frequency, rate, and volume.

Significant impacts to the aquatic community in Sembly Branch through the entrainment of fish and other organisms must be minimized. To minimize the entrainment of fish and other aquatic organisms, pump intake velocities at the Plant Freshwater Makeup Pumping Station shall not exceed 0.5 feet per second. The in-take shall be protected by a +/- 0.25 inch mesh in-take screen. Excavation/Construction activities must not occur in Sembly Branch or adjacent wetlands during fish spawning season from March through June due to its negative impacts on eggs and reproduction activities.

**Buffers, Setbacks, and Visual Impact:** Buffer areas provide distance between the mining operation and the neighboring properties and wetlands. The Act and Regulations do not have specific requirements for buffer areas. The size of the buffer and setback from the permit boundary is dependent on the nature of the mine, the neighboring land use, and the purpose of the buffer area.

If approved, the Culclasure Farm Mine will have 27.7 acres of the 68.0 acres of permitted area designated as buffer. The buffer width or setback from the permit boundary ranges from 20ft to several hundred feet in width. A large majority of the buffer width is 25ft.

The vegetation in the buffer will remain in its current state or be enhanced to provide for visual screening. Appropriate silviculture practices may be utilized to manage buffer areas that will allow thinning of timber under the direction of a SC licensed Professional Forester. Any land disturbance not consistent with accepted silviculture practices in the buffer areas will require the Mine Permit to be modified prior to such disturbances. All protected streams and wetlands that will not be impacted will be buffered by an average minimum 75 ft buffer. Reasonable access to the Plant Freshwater Makeup Pumping Station for surface water withdrawal from Sembly Branch would be allowed within the buffer area.

**Noise:** The majority of noise generated with mining activity is associated with motorized vehicles and equipment. The level of noise perceived at residences is usually related to the distance from the source of the sound, weather conditions, topography, and the type and condition of the equipment. Equipment such as trucks, dozers, and loaders usually has an average noise level determined by the manufacturer. The majority of the equipment averages 75 to 90 decibels (db) at a distance of fifty feet. Sound decreases (attenuates) with distance at the rate of about 3 to 5 db each time the distance between the source and the person hearing it is doubled.

Another factor used to buffer noise is topography. Overburden will be used to construct berms to block the direct path of sound. The mine operating permit would require Culclasure to maintain equipment (i.e. mufflers on trucks, trackhoes, pumps, etc) to minimize noise from the site.

The combination of undisturbed vegetated buffers, earthen berms, maintenance of equipment, and distance from the operation will consequently reduce the potential for sound heard offsite. There may be instances when the sound of equipment (back up alarms, trucks, etc.) can be heard, but the decibel levels should not be excessive.

Although no government standards exist for noise emitted from this type of industry, the Mine Safety & Health Administration (MSHA) does have noise standards applicable for worker safety to protect hearing. Therefore noise, limited at the source to protect workers, has the added benefit of limiting noise beyond the permit area.

**PUBLIC SAFETY:**

Public safety around a mine site is always a concern. A primary method to ensure public safety is controlling access to the mine property. A gated entry and warning signs will minimize physical hazards to persons and adjoining land uses. Additionally, natural barriers (e.g., streams, wetlands, vegetation, etc.) and constructed berms provide a deterrent for accidental entry into a mine site. If approved, the combination of these barriers and site characteristics will limit public exposure to the operations at the Culclasure Farm Mine.

The risk of accidentally encountering a highwall will be minimized by excavating the site on a slope. Slopes at final reclamation will be constructed no steeper than 3H:1V.

**Traffic/Horsefeathers Lane:** A common concern expressed is the increase of truck traffic hauling mined material. The SC Mining Act only authorizes DHEC to regulate truck traffic on roads inside the permit boundary. DHEC can evaluate impacts to public roads as it pertains to the physical effects from the mining operation (e.g. blasting, undermining, etc.).

Many concerns were raised about the use of Horsefeathers Lane. Additional information submitted by the applicant attests that this road has been available for public use since at least 1941. DHEC is not aware of any restrictions for use of this road by the applicant or the general public.

Other concerns with road systems, including use of the roads, are under the jurisdiction of S.C. Department of Transportation (SCDOT), S.C. Public Service Commission or Calhoun County Department of Public Works. As requested by the local residents at the public meeting, DHEC notified SCDOT of the proposed Culclasure Farm Mine by letter dated August 11, 2017.

## **AIR QUALITY**

**Dust:** Fugitive dust emissions from the proposed mining activities has been a concern with this proposed mine. The Division of Mining and Solid Waste Management is responsible for regulating dust emissions from a mining site. Sources of dust include: moving equipment, handling of the mineral resource and overburden, truck traffic, and wind erosion.

At active sites, the major contributors of dust are equipment and truck traffic. Properly constructed access roads with dust suppression methods (i.e., water trucks, sprinklers) is the most effective way to manage dust from traffic. If approved, Culclasure will use a watering truck. The frequency of watering will depend on weather conditions and volume of traffic.

Wind erosion of areas stripped of vegetation and material stockpiles are also sources for potential dust. The proposed operational plan for the Culclasure Farm Mine involves segmental mining - overburden will be stripped from the areas to be mined first and soil stabilization measures installed as soon as practical. The combination of minimizing land disturbance and re-vegetation will lessen the potential for windblown dust.

**Health Risks with Dust Exposure:** Based on program experience, DHEC is not aware of any offsite public health impacts from mine operations. Most documented concerns are related to on-the-job exposure to workers.

MSHA is responsible for protecting the health of workers at mine operations. As part of their duties, MSHA monitors exposure of workers to dust. Results from monitoring show the risk is greatest within work environments involving processing (crushing/ grinding) and operating equipment. If a problem concerning overexposure exists, MSHA would require the company install some type of engineering control to eliminate the concern at the source.

Meeting MSHA requirements to control dust in the immediate work area will further minimize any exposure risk outside the permitted area. No elevated exposure risk is anticipated from the mine beyond the property line.

We are exposed on a daily basis to dust from non-industrial sources such as dirt roads, fields, and bare lots. Although the proposed sand mining operation does not add any new hazards, engineering and administrative controls have been designed to minimize the production of airborne dust. Based on the proposed controls at the mine (natural buffers, distance from property lines, controls on the haul road), an increase in the exposure to silica or other materials beyond the property line is not anticipated.

Information on air monitoring in South Carolina is available on DHEC's Bureau of Air Quality website at <http://www.scdhec.gov/HomeAndEnvironment/Air/AmbientAir/>. The nearest air monitoring station for PM10 is located at Cayce City Hall (approximately 17 miles away).

**Zoning:** Concerns were raised about the placement of the mine in a rural community. Appropriate or compatible land use is determined by local government. DHEC has no authority regarding zoning in Calhoun County. Specifically, the S.C. Mining Act states in Section 48-20-250 "*No provision of this chapter supersedes, affects, or prevents the enforcement of a zoning regulation or ordinance within the jurisdiction of an incorporated municipality or county or by an agency or department of this State, except when a provision of the regulation or ordinance is in direct conflict with this chapter.*"

**Endangered or Threatened Species:** The S. C. Department of Natural Resources (DNR) provided comments that there were no threatened or endangered species within the project area. However, there are recent records of two South Carolina Action Plan conservation fish species, the Seagreen Darter and the Sawcheek Darter, downstream in Big Beaver Creek. The prior section entitled *Surface Water* addresses protective measures for aquatic life.

**Historic and Cultural Resources:** The S.C. Department of Archives and History (A&H) indicated no significant cultural or historical sites have been identified (Reference SHPO Project No. 15-ED0162, letter dated October 22, 2015). During the public comment period, A&H received comments from residents reporting sites in the immediate area. In response, A&H has requested that a cultural resources reconnaissance survey be conducted on the affected lands prior to disturbance (letter dated October 4, 2017, email dated October 6, 2017). Culclasure Farm Tract LLC is required to provide a SHPO letter of concurrence for review and approval. Note Part X: *Additional Terms and Conditions*, No. 1 of this draft Mine Operating Permit.

**Land and Property Value/Economic Impact:** Comments were received regarding the impact to property values and possible economic impacts. All zoning decisions are made at the local level by a city or county zoning authority, usually before a permit request is received. DHEC cannot dictate where a facility locates or factor property value impacts into our permitting decision. We encourage residents to contact their local city or county council representatives for more information on how to get involved in local zoning and planning issues.

**Community / Quality of Life:** Comments were received regarding the potential impacts of the proposed mine on the local community's way of life. DHEC is required to make its permit decision based only on technical review of the permit application and the Act and Regulations in place at the time of DHEC's review.

**Compliance of other Culclasure Farm Tract LLC Operations:** Culclasure does not have a history of other permitted mining operations, therefore DHEC is not aware of uncorrected violations pursuant to 48-20-70.

**Operating Hours:** DHEC does not have the authority to regulate operating hours at mine sites.

**General Opposition:** DHEC received several comments requesting denial of a permit. While DHEC appreciates all comments received, it is important to recognize that we do not have the authority to make permitting decisions based on community, business, employee, or customer approval or disapproval of a proposed operation. DHEC is required by law to make a decision based only on the technical review of an application and the regulatory requirements in place at the time of that review. In 48-20-70 of the Act, DHEC is required to grant an operating permit to the applicant if there are no technical reasons to deny the permit.