

Land Clearing / Inert Debris (LCID) Landfill Operations Manual

For:

WEEKS SAND PIT NUMBER 2 MINE

Location of LCID:

20710 N.C. HIGHWAY 24/27

35-16-52N 079-07-24W

MAILING ADDRESS:

P.O.BOX 687

BROADWAY, NC

27505

Manual prepared by:

RWK, PA

PO Box 444

101 E. Main Street

Garner, North Carolina 27529



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APPENDIX A:

Project Narrative

1.1 DEFINITIONS

- 1.1.1 "Closure" means the cessation of operation of a solid waste management facility and the act of securing the facility so that it will pose no significant threat to human health or the environment.
- 1.1.2 "Construction" or "demolition" when used in connection with "waste" or "debris" means solid waste resulting solely from construction, remodeling, repair, or demolition operations on pavement, buildings, or other structures, but does not include inert debris, land-clearing debris or yard debris.
- 1.1.3 "Department" means the Department of Environment and Natural Resources.
- 1.1.4 "Land-clearing debris" means solid waste which is generated solely from land-clearing activities
- 1.1.5 "Land clearing waste" means solid waste which is generated solely from land clearing activities such as stumps, trees, limbs, brush, grass, and other naturally occurring vegetative material.
- 1.1.6 "Land clearing and inert debris landfill" means a facility for the land disposal of land clearing waste, concrete, brick, concrete block, uncontaminated soil, gravel and rock, untreated and unpainted wood, and yard trash.
- 1.1.7 "Landfill" means a disposal facility or part of a disposal facility where waste is placed in or on land and which is not a land treatment facility, a surface impoundment, an injection well, a hazardous waste long-term storage facility or a surface storage facility
- 1.1.8 "Operator" means any person, including the owner, who is principally engaged in, and is in charge of, the actual operation, supervision, and maintenance of a solid waste management facility and includes the person in charge of a shift or periods of operation during any part of the day.
- 1.1.9 "Explosive gas" means Methane (CH₄).
- 1.1.10 "Lower explosive limit" means the lowest percent by volume of a mixture of explosive gases: the services the room of in an in will which will propagate a flame in air at 25EC and atmospheric pressure.
- 1.1.11 "Floodplain" means the lowland and relatively flat areas adjoining inland and coastal waters, including flood-prone areas of offshore islands, which are inundated by the 100-year flood.
- 1.1.12 "Leachate" means any liquid, including any suspended components in liquid, that has percolated through or drained from solid waste and
- 1.1.13 "Runoff" means the portion of precipitation that drains from an area as surface flow.
- 1.1.14 "Sediment" means solid particulate matter both mineral and organic, that has been or is being transported by water, air, gravity, or ice from its site of origin.

- 1.1.15 "Open burning" means any fire wherein the products of combustion are emitted directly into the outdoor atmosphere and are not directed thereto through a stack or chimney, incinerator, or other similar devices.
- 1.1.16 "Working face" means that portion of the land disposal site where solid wastes are discharged, spread, and compacted prior to the placement of cover material.
- 1.1.17 "Yard trash" means solid waste resulting from landscaping and yard maintenance such as brush, grass, tree limbs, and similar vegetative material.
- 1.1.18 "Erosion control measure, structure, or device" means physical devices constructed, and management practices utilized, to control sedimentation and soil erosion such as silt fences, sediment basins, check dams, channels, swales, energy dissipation pads, seeding, mulching and other similar items.
- 1.1.19 "Mulch" means a protective covering of various substances, especially organic, to which no plant food has been added and for which no plant food is claimed. Mulch is generally placed around plants to prevent erosion, compaction, evaporation of moisture, freezing of roots, and weed growth.
- 1.1.20 "Respondent" means the person against whom an administrative penalty has been assessed.
- 1.1.21 "Chamber" means compacted solid waste completely enveloped by a compacted cover material.
- 1.1.22 "Cell" means a working area of the LCID made up of a series of Chambers. Generally, only one Cell is being worked or filled at a time.

1.2.1 APPLICABILITY REQUIREMENTS

.0563 APPLICABILITY REQ. FOR LAND CLEARING/INERT DEBRIS (LCID) LANDFILLS

Management of land clearing and inert debris shall be in accordance with the State hierarchy for managing solid waste as provided for under G.S. 130A-309.04(a). Disposal in a landfill is considered to be the least desirable method of managing land clearing and inert debris. Where land filling is necessary, the requirements of this Rule apply.

(1) An individual permit from the Division of Solid Waste Management is not required for Land Clearing and Inert Debris (LCID) landfills that meet all of the following conditions:

(a) The facility is to be operated for the disposal of land clearing waste, inert debris, untreated wood, and yard trash. Operations must be consistent and in compliance with the local government solid waste management plan as approved by the Division of Solid Waste Management.

(b) The total disposal area is under two acres in size.

(c) The facility and practices comply with the siting criteria under Rule .0564, and operational requirements under Rule .0566.

(d) The fill activity is not exempt from, and must comply with all other Federal, State, or Local laws, ordinances, Rules, regulations, or orders, including but not limited to zoning restrictions, flood plain restrictions, wetland restrictions, sedimentation and erosion control requirements, and mining regulations.

(2) Where an individual permit is not required, the following applies:

(a) The owner of the land where the landfill is located must notify the Division on a prescribed form, duly signed, notarized, and recorded as per Sub-item (2)(b) of this Rule. The operator of the landfill, if different from the land owner, shall also sign the notification form.

(b) The owner must file the prescribed notification form for recordation in the Register of Deeds' Office. The Register of Deeds shall index the notification in the grantor index under the name of the owner of the land in the county or counties in which the land is located. A copy of the recorded notification, affixed with the Register's seal and the date, book and page number of recording shall be sent to the Division of Solid Waste Management.

(c) When the land on which the Land Clearing and Inert Debris Landfill is sold, leased, conveyed, or transferred in any manner, the deed or other instrument of transfer shall contain in the description section in no smaller type than that used in the body of the deed or instrument a statement that the property has been used as a Land Clearing and Inert Debris Landfill and a reference by book and page to the recordation of the notification.

(3) An individual permit is required, except for landfills subject to Item (5) of this Rule, for the construction and operation of a Land Clearing and Inert Debris (LCID) landfill when:

(a) The facility is to be operated for the disposal of land clearing waste, inert debris, untreated wood, and yard trash. Operations must be consistent and in compliance with the local government solid waste management plan as approved by the Division of Solid Waste Management, and

(b) The total disposal area is greater than two acres in size.

(4) Individual permits for land clearing and inert debris landfills shall be issued for not more than five years.

(5) Land filling of land clearing and inert debris generated solely from, and within the right of way of, North Carolina Department of Transportation projects shall be subject to the following:

(a) Only waste types as described in Sub-item (1)(a) of this Rule may be disposed of within the Department of Transportation right of way.

(b) Waste is land filled within the project right of way from which it was generated.

- (c) The disposal area shall not exceed two contiguous acres in size.
 - (d) Disposal sites shall comply with the siting requirements of Rule .0564 of this Section except for Item (10).
 - (e) Disposal sites are not subject to the requirements of Item (2) of this Rule and Rule .0204 of this Subchapter.
- (6) Landfills that are currently permitted as demolition landfills are required to comply with the following:
- (a) Only waste types as described in Sub-item (3)(a) of this Rule may be accepted for disposal, as of the effective date of this Rule unless otherwise specified in the existing permit.
 - (b) Operations must be in compliance with Rule .0566 of this Section as of the effective date of this Rule.
 - (c) Existing demolition landfills must comply with the siting criteria requirements of these Rules as of January 1, 1998 or cease operations and close in accordance with these Rules.

History Note: Statutory Authority G.S. 130A-294; 130A-301; Eff. January 4, 1993.

1.2.2 SITING CRITERIA

.0564 SITING CRITERIA FOR LAND CLEARING AND INERT DEBRIS (LCID) LANDFILLS

The following siting criteria shall apply for Land Clearing and Inert Debris (LCID) landfills:

- (1) Facilities or practices, shall not be located in the 100-year floodplain.
- (2) Facilities or practices shall not cause or contribute to the taking of any endangered or threatened species of plants, fish, or wildlife.
- (3) Facilities or practices shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species as identified in 50 CFR Part 17 which is hereby incorporated by reference including any subsequent amendments and editions. This material is available for inspection at the Department of Environment, Health, and Natural Resources, Division of Solid Waste Management, 401 Oberlin Road, Raleigh, North Carolina 27605 where copies can be obtained at no cost.
- (4) Facilities or practices shall not damage or destroy an archaeological or historical site.

(5) Facilities or practices shall not cause an adverse impact on a state park, recreation or scenic area, or any other lands included in the state nature and historic preserve.

(6) Facilities shall not be located in any wetland as defined in the Clean Water Act, Section 404(b).

(7) It must be shown that adequate suitable soils are available for cover, either from on or off site.

(8) Land Clearing and Inert Debris landfills shall meet the following surface and ground water requirements:

(a) Facilities or practices shall not cause a discharge of pollutants into waters of the state that is in violation of the requirements of the National Pollutant Discharge Elimination System (NPDES), under Section 402 of the Clean Water Act, as amended.

(b) Facilities or practices shall not cause a discharge of dredged materials or fill material into waters of the state that is in violation of the requirements under Section 404 of the Clean Water Act, as amended.

(c) Facilities or practices shall not cause non-point source pollution of waters of the state that violates assigned water quality standards.

(d) Waste in landfills with a disposal area greater than two acres shall be placed a minimum of four feet above the seasonal high water table, except where an alternative separation is approved by the Division.

(e) Waste in landfills with a disposal area less than two acres shall be placed above the seasonal high water table.

(9) The facility shall meet the following minimum buffer requirements:

(a) 50 feet from the waste boundary to all surface waters of the state as defined in G.S. 143-212.

(b) 100 feet from the disposal area to property lines, residential dwellings, commercial or public buildings, and wells.

(c) Buffer requirements may be adjusted as necessary to insure adequate protection of public health and the environment.

(10) The facility shall meet all requirements of any applicable zoning ordinance.

History Note: Statutory Authority G.S. 130A-294; Eff. January 4, 1993

1.2.3 APPLICATION REQUIREMENTS

.0565 APPLICATION REQUIREMENTS FOR LAND CLEARING/INERT DEBRIS (LCID) LANDFILLS

Five sets of plans, maps, and reports shall be required with each application. The seal of a professional engineer is required when submitting plans for a Land Clearing and Inert Debris (LCID) landfill.

- (1) The following information is required in order to review and approve the siting of a Land Clearing and Inert Debris (LCID) landfill:
 - (a) An approval letter from the unit of local government having zoning authority over the area where the facility is to be located stating that the site meets all of the requirements of the local zoning ordinance, or that the site is not zoned.
 - (b) Location on a county road map.
 - (c) Information showing that the bottom elevation of the waste shall be four feet above the seasonal high water table. Seasonal high water table elevations shall be obtained from on site test borings, test pits, or from other geological or water table investigations, studies, or reports from the immediate area of the proposed facility.
 - (d) A written report indicating that the facility shall comply with all the requirements set forth under Rule .0564 of this Section.
 - (e) A copy of the deed or other legal description of the site that would be sufficient as a description in an instrument of conveyance, showing property owner's name.
 - (f) Any other information pertinent to the suitability of the proposed facility.
- (2) The following shall be provided on a map or aerial photograph with a scale of at least one inch equals four hundred feet showing the area within one-fourth mile of the site:
 - (a) Entire property or portion thereof owned or leased by the person providing the disposal site.
 - (b) Location of all homes, buildings, public or private utilities, roads, wells, watercourses, water or other impoundments, and any other applicable features or details.
 - (c) 100-year flood plain boundaries, if any.
 - (d) Wetland boundaries, if any.
 - (e) Historical or archaeological sites, if any.

(f) Park, scenic, or recreation area boundaries, if any.

(3) Development and design plans and details, at a scale of at least one inch equals one hundred feet with one inch equals forty feet preferred, and specifications containing the following information shall be submitted with the application for a proposed Land Clearing and Inert Debris (LCID) landfill:

(a) Property or site boundary, fully dimensioned with bearings and distances, tied to North Carolina grid coordinates where reasonably feasible.

(b) Easements and right-of-ways.

(c) Existing pertinent on site and adjacent structures such as houses, buildings, wells, roads and bridges, water and sewer utilities, septic fields, and storm drainage features.

(d) Proposed and existing roads, points of ingress and egress along with access control such as gates, fences, or berms.

(e) Buffer and set back lines along with the buffered boundary or feature.

(f) Springs, streams, creeks, rivers, ponds, and other waters and impoundments.

(g) Wetlands, if any.

(h) Boundary of the proposed waste area.

(i) Existing topography with contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify existing topographic conditions.

(j) Proposed excavation, grading, and final contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify proposed grading. Excavation, grading, and fill material side slopes shall not exceed three to one (3:1).

(k) Where on site borrow for operational and final cover is proposed, indicate the borrow excavation and grading plan with contours at a minimum of five foot intervals. Where necessary, a smaller interval shall be utilized to clarify proposed grading.

(l) Proposed surface water control features and devices such as slope drains, storm water pipes, inlets, culverts, and channels.

(m) Information showing that the project meets the requirements of 15A NCAC 4, Sedimentation Control Rules.

(n) Location of test borings or test pits, if used to determine the seasonal high water table elevation, shall be shown on the plans.

(o) A minimum of two cross-sections, one each along each major axis, per operational area showing:

(i) Original elevations.

(ii) Proposed excavation.

(iii) Proposed final elevations.

(4) An operational plan addressing the requirements under Rule .0566 of this Section and containing the following information shall be submitted with the application for a proposed Land Clearing and Inert Debris (LCID) landfill:

(a) Name, address, and phone number of individual responsible for operation and maintenance of the facility.

(b) Projected use of the land after completion.

(c) Description of systematic usage of disposal area, operation, orderly development and closure of the landfill.

(d) Type, source, and quantity of waste to be accepted.

(e) An emergency contingency plan, including fire fighting procedures.

History Note: Statutory Authority G.S. 130A-294; Eff. January 4, 1993.

1.2.4 OPERATIONAL REQUIREMENTS

.0566 OPERATIONAL REQ. FOR LAND CLEARING/INERT DEBRIS (LCID) LANDFILLS

Land Clearing and Inert Debris (LCID) landfills shall meet the following operational requirements:

(1) Operational plans shall be approved and followed as specified for the facility.

(2) The facility shall only accept those solid wastes, which it is permitted to receive.

(3) Solid waste shall be restricted to the smallest area feasible and compacted as densely as practical into chambers.

(4) Adequate soil cover shall be applied monthly, or when the active area reaches one acre in size, whichever occurs first.

(5) 120 calendar days after completion of any phase of disposal operations, or upon revocation of a permit, the disposal area shall be covered with a minimum of one foot of suitable soil cover sloped to allow surface water runoff in a controlled manner. The

Division may require further action in order to correct any condition which is or may become injurious to the public health, or a nuisance to the community.

(6) Adequate erosion control measures, structures, or devices shall be utilized to prevent silt from leaving the site and to prevent excessive on site erosion.

(7) Provisions for a ground cover sufficient to restrain erosion must be accomplished within 30 working days or 120 calendar days upon completion of any phase of landfill development.

(8) The facility shall be adequately secured by means of gates, chains, berms, fences, etc. to prevent unauthorized access except when an operator is on duty. An attendant shall be on duty at all times while the landfill is open for public use to assure compliance with operational requirements and to prevent acceptance of unauthorized wastes.

(9) Access roads shall be of all-weather construction and properly maintained.

(10) Surface water shall be diverted from the working face and shall not be impounded over waste.

(11) Solid waste shall not be disposed of in water.

(12) Open burning of solid waste is prohibited.

(13) The concentration of explosive gases generated by the facility shall not exceed:

(a) Twenty-five percent of the lower explosive limit for the gases in facility structures.

(b) The lower explosive limit for the gases at the property boundary.

(14) Leachate shall be properly managed on site through the use of current best management practices.

(15) Should the Division deem it necessary, ground water or surface water monitoring, or both, may be required as provided for under Rules .0601 and .0602 of this Subchapter.

(16) A sign shall be posted at the facility entrance showing the contact name and number in case of an emergency and the permit number. The permit number requirement is not applicable for facilities not requiring an individual permit.

History Note: Statutory Authority G.S. 130A-294; Eff. January 4, 1993.

1.2.5

.0601 GROUND-WATER MONITORING

(a) The Division shall require a solid waste management facility to provide such ground-water monitoring capability as the Division determines to be necessary to detect the effects of the facility on ground-water in the area. In making such a determination, the Division shall consider the following factors:

- (1) the design of the facility, the nature of the processes it will use, and the type of waste it will handle;
- (2) soil and other geological conditions in the area;
- (3) nearness of ground-water to the facility;
- (4) uses that are being or may be made of any ground-water that may be affected by the facility; and
- (5) any other factors that reasonably relate to the potential for ground-water effects from the facility.

(b) Responsibility for sample collection and analysis will be defined as a part of the permit condition.

(c) Any other information that the Division deems pertinent to the development of a ground-water monitoring system will be required.

(d) All monitoring wells required pursuant to this Rule shall comply with monitoring well construction standards of 15A NCAC 2C .0105. Copies of 15A NCAC 2C may be obtained from and inspected at the Division.

(e) A record of well installation shall be filed with the Division upon completion of the monitoring wells.

(f) Groundwater quality monitoring wells shall be constructed of materials, and by procedures, approved by the Division.

History Note: Statutory Authority G.S. 130A-294; Eff. April 1, 1982; Amended Eff. September 1, 1990; August 1, 1988;

1.2.6

.0602 SURFACE WATER MONITORING

(a) The Division shall require a solid waste management facility to provide such surface water monitoring capability as the Division determines to be necessary to detect the effects of the

facility on surface water in the area. In making such a determination, the Division shall consider the following factors:

- (1) the design of the facility, the nature of the process it will use, and the type of waste it will handle;
- (2) drainage patterns and other hydrological conditions in the area;
- (3) nearness of surface water to the facility;
- (4) uses that are being or may be made of any surface water that may be affected by the facility; and
- (5) any other factors that reasonably relate to the potential for surface water effects from the facility.

(b) Responsibility for sample collection and analysis will be defined as a part of the permit conditions. Any other information that the Division deems pertinent to the development of a surface water monitoring system will be required.

History Note: Statutory Authority G.S. 130A-294; Eff. April 1, 1982.

2.0 Additional requirements of the Owner/ or Operator Responsible (O/OR) of an LCID

2.1 Governmental changes

2.1.1 It is the responsibility of the (O/OR) to stay abreast of all, state, county and town, governmental changes that will occur with regard to the operation of an LCID.

2.1.2 In the event it is necessary a professional engineer or testing service will be required to conduct investigations and prepare changes to the plans to meet Governmental requirements.

2.2 Signage

2.2.1 Required information

The O/OR will it erected the required information signage as outlined in 15 A NCAC BB .05X. The signage must be in a conspicuous location visible from the paved road. If two signs are needed to identify the site they will be provided. The information signage must be maintained in reasonable

readable condition as long as the site is an active LCID, or until the North Carolina Division of Solid Waste deems it unnecessary.

2.2.2 Warnings

On the site road to the LCID a sign with lettering of a size readable from the cab of a truck and in a conspicuous location information as to the operational hours of the LCID, the type of material that can be placed in the LCID and a warning as to what is not allowed in the LCID. This sign must be maintained for as long as the LCID is in operation.

2.2.3 NO trespassing

NO trespassing and No dumping signage are to be placed on the perimeter of the LCID. The signage shall be visible one to the next around the entire LCID.

2.2.4 Business related

Business related signage is at the discretion of the O/OR with prior approval of local governing agency.

2.2.5 Directional

Directional, informational and no dumping signs shall be used to direct the truckers to the active face of the LCID. Material dumped in the wrong area is to be removed within 30 days of its discovery.

Yellow barrier tape may be used to cordon off areas and identify active areas of the LCID.

2.3 Training

2.3.1 Training session

The O/OR will conduct a training session to familiarize all employees of the basic safety issues associated with working in the vicinity of heavy equipment used in LCID.

2.3.2 All employees

All employees working on the site or that may visit the LCID are to be instructed as to what materials are acceptable to be placed in the LCID and what materials are not acceptable. And to know where the active areas of LCID are.

2.3.3 Reporting protocol

A reporting protocol is to be established. Employees are to be trained as to how and who it is to be contacted in the event of an issue requiring

management oversight is encountered. Each employee shall carry a copy of this protocol at all times when working the LCID. The protocol is to be updated as resources change over time.

2.3.4 New regulations

As new regulations are imposed by any governmental agency the information will be given to the employees in timely manner.

2.3.5 Attended the training sessions

A form indicating each employee has attended the training sessions outlining the operation of the LCID will be retained on site. This information is to be made available if requested by any governmental agency or insurance company.

2.3.6 New employees

As new employees are hired they are to be given instructions as to the operation of the LCID.

2.4 General Operation

2.4.1 Construction of chambers.

The LCID must be built of chambers the maximum size of a chamber is one acre or the amount of fill that has dumped in 30 calendar days regardless of the fact the area is not an acre. Soil cover cap is compacted to be as dense as possible. Erosion control measures must be in place at times and as specified on the Erosion Control Plan after each Cell is capped off.

2.4.2 Landfill Cell system.

The drawing C2 is the plan as to how the landfill is to be filled by using a Cell system. As each zone is brought up to its final elevation the area is to be capped and seeded with the final cover seed mix.

2.4.3 Permitted waste.

The facility is to be operated for the disposal of land clearing waste, inert debris, untreated wood, and yard trash.

2.4.4 Security.

The facility shall be adequately secured by means gates, chains, berms, senses etc. to prevent unauthorized access except when the operator is on duty. The attendant shall be on duty at all times while the landfill is open for public use to

assure compliance with the operational requirements and to prevent acceptance of unauthorized waste.

2.4.5 Chamber density.

chamber must be compacted to their maximum density, as each lift in the chamber is prepared. All measures of compaction and body reduction are acceptable in building the chambers.

2.4.6 Old mine slopes.

All slopes of the old mine to be reclaimed shall be graded to a maximum 3:1 slope and seeded with the final cover seed mix

2.4.7 Working face slopes.

The slopes that are created on the working face of an active chamber are to be maintained at a 3:1 slope. Final chamber finish grades that extend away from the landfill shall be maintained at 3:1 slopes.

2.4.8 Surface water.

Surface water approaching the landfill is to be diverted from the working face and shall not flow over the waste. Water that is percolating through the chamber shall be diverted to a detention basin located at the low point on the site. Periodic sampling of these leachates should be conducted annually to determine that the detention basin is effectively removing all controlled materials. Surface water is not allowed to be impounded above the waist.

2.4.9 Explosive gas.

Explosive gas is methane (CH₄). An annual inspection for explosive gases shall be conducted to sure insure that the areas around the landfill is not producing explosive gases that exceed:

- (a). 25 percent of the lower explosive limit for the gases in the facility structures.
- (b). The lower limits for gases at the property boundary.

2.4.10 Haul roads.

All weather haul roads leading to and within the LCID must be maintained throughout the operation of the LCID. New haul roads may be established above closed Cells. Directional signs as to active face of the landfill are to be placed along the haul roads to assist truckers. The finished grades on all haul roads shall not exceed 10 percent.

2.4.11 Open burning.

Open burning of waste is prohibited.

2.4.12 Disposed waste in water.

Solid waste shall not be disposed of in any standing or flowing water.

2.4.13 Illegal dumping.

In the event that the illegal dumping or permitted waste dump in the wrong location the encountered waste should be O/OR is to arrange for the waste to be probably disposed of or removed from the LCID as soon as possible. Any environmental remediation should be conducted at as soon as practical.

2.4.14 Not permitted.

This facility is not permitted as a recycling center or a composting facility although; both types of activities are permitted to occur at the site with proper applications to the Department.

2.4.15 Paperwork requirements.

The O/OR is to comply with the paperwork requirements to operate the LCID on an annual basis. To make reports as necessary to the department.

2.4.16 Emergency contingency plan.

An emergency contingency plan is to be established for the site. This plan should include:

- (a). Contact numbers for police, sheriff, and N.C. Highway Patrol.
- (b). Contact numbers for area fire districts and ambulance services.
- (c). A source for backup equipment to be made available on short notice in the event the landfill must be capped for administrative purposes.
- (d). On-hand supply of materials used to repair the erosion control system in the event of heavy rain. A source contact for, additional materials if they become needed.
- (e). Standing orders as who to contact in the company in the event of an emergency. And under which conditions outside help is to be contacted.
- (f). The emergency contingency plan shall be documented and placed in a conspicuous location in the office and workshop associated with the maintenance of equipment.

2.5 Harnett County - Erosion Control Temporary Cover

2.5.1 Winter and Early Spring

Seeding Mixture

Species Rate (lb/acre)

Rye (grain) 120

Annual Lespedeza (Kobe) 50

Omit annual lespedeza when duration of temporary cover is not extended beyond June.

2.5.2 Seeding Dates Jan. 1 - May 1

Soil amendments

Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

2.5.3 Maintenance

Re-fertilize if growth is not fully adequate. Reseed, re-fertilize and mulch immediately following erosion or other damage.

2.5.4 Summer Seeding Mixture

Species Rate (lb/acre)

German millet 40 or

small stemmed Sudangrass 50

2.5.5 Seeding Dates May 1 - Aug. 15

Soil amendments

Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 750 lb/acre 10-10-10 fertilizer.

2.5.6 Mulch

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

2.5.7 Maintenance

Refertilize if growth is not fully adequate. Reseed, refertilize and mulch immediately following erosion or other damage.

2.5.8 Fall Seeding Mixture

Species Rate (lb/acre)

Rye (grain) 120

2.5.9 Seeding Dates Aug. 15 - Dec. 30

2.5.10 Soil amendments

Follow recommendations of soil tests or apply 2,000 lb/acre ground agricultural limestone and 1000 lb/acre 10-10-10 fertilizer.

2.5.11 Mulch

Apply 4,000 lb/acre straw. Anchor straw by tacking with asphalt, netting, or a mulch anchoring tool. A disk with blades set nearly straight can be used as a mulch anchoring tool.

2.5.12 Maintenance

Repair and re-fertilize damaged areas immediately. Topdress with 50 lb/acre of nitrogen in March. If it is necessary to extend

temporary cover beyond June 15, overseed with 50 lb/acre Kobe lespedeza in late February or early March.

2.6 Finish Cover for Harnett County

2.6.1 Start of planting

Initially the site needs to be finish graded and the soil amended to create a topsoil. To do this, provide a 2" layer of yard waste compost and till it into the soil to a depth of 6". Once the soil has been amended, apply seed by broadcasting over the entire disturbed area as prescribed and cover the seed with a clean grain straw at a depth of .25 - .5 inches deep. Provide an asphalt tack to the top of the straw. Due to the differing sizes of the tree seed, hydro-seeding is not recommended.

2.6.2 Seed mix is as follows:

Seed Mix: amounts per 1000 SF of area

Base seed mix:

Coronilla varia - .6 lb

Festuca arundinacea - .3 lb

Lolium multiflorum - .3 lb

Lotus corniculatus - .2 lb

Phleum pratense - .3 lb

Trifolium hybridum - .2 lb

Agrostis alba - .1 lb

Tree Seed Mix:

Acer rubrum - .01 lb

Cercis canadensis - .01 lb

Juniperus virginiana - .01 lb

Liquidambar styraciflua - .01 lb

Pinus taeda - .02 lb

Quercus phellos - .01 lb

2.6.3 The contractor will

The contractor will need to mix the Base seed mix with the seed from the tree species prior to broadcasting and spread the seed evenly over the area. Seed the total mix at a rate of 2.07 lbs per 1000 SF.

2.6.4 The intent of these mixes

The intent of these mixes to provide immediate cover with herbaceous growth and grasses. Over the course of several years, this cover will dwindle and eventually disappear and be replaced with the trees thus providing a low maintenance cover in the disturbed areas.

2.6.5 Mowing

To make this tree plan function, the owner **must not mow** those areas planted with these seed mixes.

2.6.6 Seed suppliers

Seed for Base seed mix:

Seed for Base seed mix:

Ernst Conservation Seeds - phone # 800-873-3321

email - ernstsales@ernstseed.com

Tree seed in individual species:

Sheffield's Seed Company - phone # 315-497-1059

email - seed@sheffields.com

APPENDIX A

Project Narrative:

The project consists of reclaiming approximately 25 acres of an existing sand mine and converting an approximate 18 acre area into a Land Clearing and Inert Debris (LCID) land fill. 2 Acres at southern end of the mine are currently being filled under an existing "2 acre" LCID permit and designated as Cell 7. The project will begin by installing diversion ditches and sediment basin in Borrow Area 1 (B1) and installing the west to east diversion and large basin at the north end of the LCID. Install Construction Entrance per plan. The project will then continue in phases, which are designated in the plan as Cells. Cell 7 will be filled and stabilized and the work will continue into Cell 1 and so forth:

Cell 1

Make sure all reclaimed mining slopes are at 3:1 as a maximum. Work the site east and north from the entrance filling to final grade first in the south and continuing north. Slopes from entrance should remain drivable. Extend an all weather access road into working face of fill area. As cell gets close to final grade install swale and basin 1 and continue fill operation. During fill debris needs to be covered every 30 days or when it reaches 1 acre of area. All slopes left exposed are to be covered, with material from Borrow Area 1 as necessary, within 21 calendar days. Tie all slopes into existing grade at 3:1 slope at a maximum. As areas of Cell 1 reach final grade, permanently seed per erosion control plan and remove sediment control devices after plant material has been established.

Cell 2

Work in cell 2 should progress from Cell 1 and to east side of landfill making sure all reclamation slopes are 3:1 prior to placement of debris fill. As soon as practical, install the swale and sediment basin. Bring remaining surface to final grade including tie in with Cell 1. All slopes should be tied in at a 3:1 maximum particularly on the west (mine side of Cells) face of the landfill. Access road should extend to Cells 1 and 2 should be maintained at a maximum grade of 10%. Once final grade has been reached and covered stabilize per erosion control plan. Continue to cover debris after 30 days or if 1 acre of debris is exposed, whichever is less. All slopes left exposed are to be covered within 21 calendar days. As areas of Cell 2 reach final grade, permanently seed

per erosion control plan and remove sediment control devices after plant material has been established.

As Needed:

Install diversion ditches and sediment basin in Borrow Area 2 (B2) and final grade B1. Permanently seed per erosion control plan and remove sediment control devices after plant material has been established and seed.

Cell 3

Work into cell 3 from access road from Cells 1 and 2. First reclaim all mine slopes back to 3:1 maximum and continue filling as specified above. West slope should be graded and covered with dirt at 3:1 maximum slope back into mine floor. Extend the all weather access road into working face of fill area. All slopes left exposed are to be covered within 21 calendar days. Install swale and sediment basin at east edge of Cell as soon as practical. The north slope should be graded and covered with dirt at 3:1 slope. Install slope drain to floor of existing mine and grade the diversion ditch east along the top of slope to divert stormwater to slope drain. As areas of Cell 3 reach final grade and permanently seed per erosion control plan and remove sediment control devices after plant material has been established.

Cell 4

Make sure all reclaimed mining slopes are at 3:1 as a maximum. Work the site north and west from the entrance filling to final grade first in the south and continuing north. Slopes from entrance should remain drivable. Extend an all weather access road into working face of fill area. As cell gets close to final grade install swale and basin 4 and continue fill operation. Grade to meet final elevations with Cell 1 on east side. During fill debris needs to be covered every 30 days or when it reaches 1 acre of area. All slopes left exposed are to be covered, with material from B1 as necessary, within 21 calendar days. Tie all slopes into existing grade at 3:1 slope at a maximum. As areas of Cell 4 reach final grade and permanently seed per erosion control plan and remove sediment control devices after plant material has been established.

Cell 5

Work in Cell 5 should progress from Cell 4 and to west side of landfill making sure all reclamation slopes are 3:1 prior to placement of debris fill. As soon as practical, install the swale and sediment basin. Bring remaining surface to final grade including tie in with Cell 2. All slopes should be tied in at a 3:1 maximum particularly on the west (mine side of Cells) face of the landfill. Access road should extend through Cells 4 and into 5 should be maintained at a maximum grade of 10%. Once final grade has been reached and covered stabilize per erosion control plan. Continue to cover debris after 30 days or if 1 acre of debris is exposed, whichever is less. All slopes left exposed are to be covered within 21 calendar days. As areas of Cell 5 reach final grade, permanently seed per erosion control plan and remove sediment control devices after plant material has been established.

Cell 6

Work into cell 6 from access road through Cells 4 and 5. First reclaim all mine slopes back to 3:1 maximum and continue filling as specified above. North slope should be graded and covered with dirt at 3:1 maximum slope back into mine floor. Extend the all weather access road into working face of fill area. All slopes left exposed are to be covered within 21 calendar days. Install swale and sediment basin at east edge of Cell as soon as practical. The north slope should be graded and covered with dirt at 3:1 slope. Install slope drain to floor of existing mine and grade the diversion ditch west along the top of slope to divert stormwater to slope drain. As areas of Cell 6 reach final grade, permanently seed per erosion control plan and remove sediment control devices after plant material has been established.

Sediment Basin 6

When all grading is complete permanently seed per erosion control plan after plant material has been established remove sediment control devices in Basin 6 and Borrow Area 2.

RWK, PA

ENGINEERING ~ SURVEYING

CORPORATE LICENSE: C-1771
101 W. MAIN ST., SUITE 202

GARNER, NC 27529

PHONE (919) 779-4854

FAX (919) 779-4056

WEEKS SAND PIT NUMBER 2

CELL AND BORROW QUANTITIES

CELL	AREA (sf)	AREA (Ac)	VOL (cy)
1	164,442	3.78	85,200
2	126,762	2.91	79,100
3	116,793	2.68	84,600
4	81,493	1.87	72,200
5	66,737	1.53	62,500
6	110,305	2.53	87,800
7	52,899	1.21	21,600
TOTAL	719,431	16.52	493,000

BORROW	AREA (sf)	AREA (Ac)	VOL (cy)
B1	137,910	3.17	106,300
B2	114,536	2.63	94,300
TOTAL	252,446	5.80	200,600

NOTE: VOLUMES SHOWN ARE ESTIMATED BASED ON THE SPACE TO BE FILLED BY LAND CLEARING AND INERT DEBRIS ONLY.



A handwritten signature in black ink that reads "Ch R. P. PA".

Feb. 11, 2010