Permit No.	Date	DIN
56-03	**August 13, 2013**	**19406**

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CLOSURE AND POST-CLOSURE PLAN

IAC INDUSTRIAL LANDFILL
MCDOWELL COUNTY,
PERMIT #5603I-INDUS-2009

1240 PARKER-PADGETT ROAD
OLD FORT,
NORTH CAROLINA

Prepared for:

IAC Group North America
28333 Telegraph
Southfield, MI 48034

Attn: Mr. Patrick Kresnak

Prepared by:

Robert J. Nowakowski, CPG
RJN Environmental, Inc.
34888 Garfield Road
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August 13, 2013

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1.0 INTRODUCTION

This revised plan has been prepared and submitted by RJN Environmental, Inc. (RJN) in compliance with an order issued by the North Carolina Division of Waste Management for the closure of the Old Fort Landfill, formerly known as the Collins & Aikman (C & A) Carpet Scrap Landfill and identified in this report as the Subject Site. This revised report responds to the July 5, 2013 "Request for Additional Information" submitted by the NCDENR-WM.

The Subject Site is located on 1240 Parker-Padgett Road, just outside of Old Fort, North Carolina. The site was permitted for C&A for the disposal of scrap carpet and backing generated from the C&A Automotive Plant at 1506 E Main Street, Old Fort, North Carolina. This Closure-Post Closure Plan is based on the approved Soil Erosion and Sediment Control Plan, dated March 12, 2013. This plan was approved in a March 28, 2013 Letter of Approval from the NDCENR - Land Quality Section. This approval letter along with the Certificate of Plan Approval is included in Appendix A.

The Subject Site was operated exclusively by Collins & Aikman. Upon transfer of the landfill ownership from C & A to International Automotive Components (IAC), the landfill use was discontinued. The landfill use was initiated by C&A in 1982 and terminated in 2005. The landfill was operated in three phases as indicated on Figure 1 - Site Map. The original landfilling operations (Phase 1) were along the central west portion of the Subject Site. Phase I was operated from early 1982 to late 1982. Phase 2 was operated from late 1982 to 1985, south of the drainage feature along the central eastern portion of the Subject Site. From 1985 through 2005, the remaining operations, known as Phase 3, were located over the drainage feature north of Phase 2. There has been no landfilling since 2005. The entire site has an area of approximately 86 acres while the landfill proper is approximately 12 acres in size of which 2 acres are considered buffer zones.

1.1 Purpose

The purpose of this document is to present a Closure-Post Closure Plan for the Subject Site. The closure plan contained herein complies with 15A NCAC 13B.1627 - Rules .0505(3)(c), .0505(4), .0505(5)(c), .0505(6)(a), .0601, and .0602.

1.2 Contact Information

The following is the Project Manager for the closure and post closure activities.

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2.0 CLOSURE DESIGN

2.1 Closure Introduction

The closure plan for the Old Fort Landfill was developed primarily to minimize erosional degradation of the proposed cap. As was demonstrated in earlier studies, due to the inert nature of the contents of the landfill, leachate is not present nor expected to be produced in the long term future. The cap is proposed to be completed through placement of a cover engineered from materials available on-site, which will reduce the potential impact to surface water and groundwater. These materials are stockpiled in the northeast corner of the landfill and originated from the stripping of the site to create the original depression for the landfill.

2.2 Phase 1 Cell of Landfill

The oldest area of the landfill is Phase 1, which is currently completely vegetated with local species of trees and grasses. Many of the trees have grown to a diameter of 4 to 6-inches. It is the opinion of RJN that it is unnecessary to clear the vegetation from Phase 1 only to place another cap over the top. As a result, RJN is proposing to cap only Phase 2 and Phase 3.

To support this, RJN verified the present cap thickness of Phase 1 by advancing 30 hand auger borings through the cap material until rejection was encountered, at the first carpeting layer. Results indicate that the majority of the cap over Phase 1 exceeds the minimum thickness of 2'. However, there is a small gully over the top of the middle of Phase 1 in which soil has washed away. This area is approximately 100 feet long by 10 feet wide in which the cap varies between 1' to 2'. During construction activities for Phase 2 and Phase 3, this area will be repaired by placing enough material to bring the cap thickness to a minimum of 2'. In addition, dead and felled trees will be removed and areas of thick growth will be thinned to allow for future inspections. Refer to Figure 6 - Phase 1 Cap Thickness for a representation of the encountered cap thicknesses over the Phase 1 cell.

2.3 Development Concept

The closure design was developed from site-specific conditions, availability of materials at the Subject Site, understanding of the past operating procedures of the site, and the type of waste in the landfill. Closure of the site will include the following activities.

- Placement of a soil cap in accordance with Subsection 2.3 of this document and as shown on the attached figures, Figure 2 and Figure 4.

- The seeding and fertilizing of the site in accordance with the seeding specifications described in the approved Soil Erosion and Sedimentation Control (SESC) Plan dated March 12, 2013.

The principal goals for the closure plan are as follows:

- To minimize infiltration and to provide a cover system suitable for development of a grass crop that will prevent erosion and infiltration.

2.4 Site Preparation and Regrade

Grading of the landfill material will be performed prior to cap placement to ensure proper drainage as required. Specifically, Phase 2 is 20-feet topographically higher than Phase 3. Due to this, separate caps will be constructed over Phase 2 and Phase 3, respectively. There will be a drainage swale constructed between the caps for Phase 2 and Phase 3. This will result in a reduction of the stormwater stress to the southern edge of the cap.

2.5 Cap Placement

The final cover will be, at a minimum, two feet thick as required by Rule 15A NCAC 13B.1627.0505(3)(c). The final cover system from bottom to top will consist of at least 18 inches of compacted soil overlain by 6 inches of vegetative soil capable of sustaining plant growth. Capping material will be obtained from locally available soil. Grading of the material will be performed to achieve a minimum 5 percent and a maximum 33 percent grade along the landfill sideslopes. Prior to placement of the 6-inch layer of vegetative soil, a surveyor will check the elevations to assure that the proper grades exist, and that there are no low areas or depressions within the cap that would collect surface water.

The 6-inch layer of vegetative soil will be consistent with local topsoil material and free of frozen material, debris, trash, stumps, rocks, and roots. Application of seed, lime, fertilizer, and mulch will be in accordance with the engineering specifications included in the SESC Plan.

Dust control measures including spraying with water mist will be instituted as necessary to minimize airborne dust emissions on the site.

2.6 Site Seeding

All areas disturbed during placement of the final cover system will be seeded as required by Rule 15A NCAC 13B.1627.0505(6)(a). Seeding will normally occur between March 1 and October 15. All site grading and surface water runoff control structures such as drainage ditches and culverts will be constructed prior to seeding. The top layer of soil will be loosened by raking, discing, or other acceptable means before seeding. Lime and fertilizer will be applied to areas prior to seeding. Application rates for lime and fertilizer will follow the engineering specifications in the SESC Plan, or, as needed based on testing. The seed will be applied uniformly with a cyclone seeder, drilled, cultipack seeder, or hydroseeder. The seeds shall not be planted if there is a danger of frost shortly after seed germination. Maximum seeding depth is 1- inch when using methods other than hydroseeding. Wood fiber, cellulose mulch, or hay

mulch will be spread uniformly upon completion of the seedbed preparation, liming, fertilization, and seeding. The mulch may be anchored in-place by uniformly applying an acceptable mulch binder such as Curasol or Terr-Tac. If germination is unsuccessful (less than 75 percent catch) within 30 days of seeding, or there is unsatisfactory catch in the next year, the appropriate areas of the site will be re-seeded in accordance with the seeding specifications contained herein.

2.7 Quality Assurance / Quality Control Program

The capping of the landfill will begin in the late spring to early summer of 2013 (contingent upon regulatory approval and weather conditions). IAC will utilize qualified personnel familiar with the various aspects of landfill design and closure, to serve as their on-site representative during closure of the site. The on-site representative will provide observation of the proposed closure activities and will be responsible for quality control enforcement and construction documentation at the site. Services of a general contractor will be procured through a competitive bid process. Bid packages for the solicitation of construction services will require the contractor to be responsible for supplying the required labor, material, equipment and insurance for the installation of the final closure system and to demonstrate familiarity and experience with the various aspects of landfillconstruction.

2.7.1 Soil QA / QC

The soil materials to be used for the landfill are stockpiled on-site, northeast of the landfilled area. These materials were derived from the original construction of the landfill by stripping the overburden down to bedrock. This material was designated at the time of construction for the future cap. This material was pre-determined to compact well, and to support vegetation. As a result, QA/QC testing of this material is not deemed necessary.

2.7.2 Weekly Inspection Reports

Weekly inspection reports will be prepared by the owners representative during the closure of the landfill. The reports will include material test results, summary of contractor submittals, summary of weekly progress and progress made to date, and anticipated work items for the following week. Copies of the reports will be provided in the construction certification report. All references will be made to the numbered construction items as indicated on Figure 2 - Site Plan.

2.7.3 Photographic Documentation.

To provide documentation of the landfill closure, photographs will be taken periodically of the closure construction. Copies of the photographs will be provided in the construction certification report. Each of the numbered items on Figure 2 - Site Plan will be documented.

2.7.4 Record Drawings

Upon completion of the landfill closure, a set of as-built drawings will be prepared for the facility.

The drawings will be submitted to the NCDENR within 60 days of closure completion.

2.7.5 Final Construction Certification and Report.

A final construction report will be submitted to the NCDENR within 60 days following the completion of closure construction at the landfill. The report will include written certification signed by the site representative, that the site has been closed in accordance with the requirements listed in 15A NCAC 13B Rule .0510.

2.8 Leachate and Gas Management

Leachate is primarily generated at the landfill site through precipitation infiltrating into the landfill. However, it has been demonstrated in the June 7, 2011 Final Investigation Report, that there is no leachate being generated at the Subject Site. This is consistent with the nature of the materials landfilled, that is, carpet pieces, fibers and plastic backing. As a result, there will be no leachate collection system incorporated into the final cover system.

The generation of gas and associated odors is not a concern at the site therefore; no gas management/venting system will be incorporated into the final cover system.

2.9 Storm Water Management/Erosion Control

Erosion and sediment control measures will be implemented as required by Rule 15A NCAC 13B.1627 .0505(4) in accordance with the approved SESC Plan.

Erosion control measures, including the use of geo-fabrics, hay bales, bark mulch sediment barriers, and sediment traps will be implemented. In addition, the following erosion control procedures will be followed during closure construction operations and after site closure has been completed.

- Removal of trees, brush, and other vegetation, as well as disturbance of existing soil cover, will be kept to a minimum during site closure. There may be some tree removal along the southern edge of the landfill to obtain proper cap grading.

- Acceptable existing topsoil will be stripped and stockpiled for reuse as final cover. Topsoil suitable for reuse will be stockpiled on-site in a manner that natural drainage is not obstructed and no off-site sediment damage will result.

- During grading operations, the site will be brought to approximate finish grades and stabilized without extended delays. This includes the application of mulch to all surfaces designated to be revegetated.

- Erosion and sediment control measures such as hay bales will be installed as shown and/or adjusted to suit construction immediately after a cut or fill slope has been created.

- Hay bales will be inspected after prolonged rainfall events and repairs made as necessary. Sediment deposits will be periodically removed from the upstream side of the silt areas. This sediment will be spread and stabilized in areas of the site not subject to erosion. Hay bales will be replaced as necessary to provide proper filtration action.

- Immediately following the final grading of the landfill cap all graded or disturbed areas will receive 6 inches of topsoil and will be seeded to provide a permanent vegetative cover.

2.10 Edge of Waste Markers

Once the final cap is in place, each of the three disposal units will be identified with permanent edge-of-waste markers. These will aluminum signs mounted on green-enameled, metal, u-channel posts, which will be cemented in-place. These edge-of-waste signs will be mounted at 100 foot intervals around each of the three cells. Each sign will indicate the following:

IAC
Landfill Permit
#5603

Edge-Of-Waste
Phase 1 (or 2 or 3)

2.11 Design Plans and Technical Specifications

Design plans showing the landfill's existing site topography, proposed grading plans (elevations and sideslopes), design details, and landfill cross-sections are contained within the approved SESC Plan.

3.0 LONG TERM (POST CLOSURE) MAINTENANCE

The subsections that follow describe the various activities that must be done to insure the long-term integrity of the landfill subsequent to final closure.

The following is the contact for the post closure activities.

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Fax: 586-879-0176

3.1 Mowing

As indicated earlier, Phase 1 will be left with its present covering of trees intact (with proper monitoring and maintenance). However, with regard to the remainder of the site, the closed landfill, and buffer areas, where appropriate will be mowed twice per year. This will generally be completed in mid-June and in September of each year, to an average height of 4-inches.

3.2 Management of the Phase 1 Cell

As indicated in Section 2.2, Phase 1 is presently forested with large and small trees. Since it is proposed that the Phase 1 cell be left intact as it is, the monitoring and maintenance of Phase 1 is included in this Closure-Post Closure Report. The quarterly monitoring will include a search for dead or fell trees. If these are encountered, they will be removed, and if necessary, the integrity of cap will be restored. Any accumulation of thick brush will be removed and accumulations of thick stands of trees will be thinned to allow easy access to all areas of the cap. The monitoring of the Phase I Cell is included in Table 1 - Landfill Inspection Record.

3.3 Site Inspections

Closed areas will be inspected quarterly to insure the cover system integrity is maintained against erosion and other problems. The inspection will include an examination of the following items:

- surface drainage ways
- installed drainage features as identified on Figure 2 - Site Plan
- integrity of cap
- surface grading
- grass growth

Each inspection will include notation of any problems and recommended remedial actions; please refer to Table 1 for the quarterly maintenance inspection checklist. Once the vegetation and erosion control features are stabilized, IAC may request a reduction in the inspection frequency from quarterly to semi-annual.

3.4 Ground and Surface Water Monitoring

3.4.1 Introduction

The site will be monitored in a manner that protects human health and the environment by monitoring the quality of upgradient and downgradient groundwater. The monitoring plan also provides the mechanism for assessment.

3.4.2 Relevant Points of Compliance

For ground water the compliance boundary, as defined by 2L .0107 (b), shall be established no more than 250 feet from the waste boundary, and shall be 50 feet within the property (facility) boundary, whichever is closer to the source. The compliance monitoring points for the site are depicted on Figure 5 and arerepresented by the existing groundwater monitoring wells, MW-2, MW-3 and MW-4 (downgradient) and MW-1 and MW-1A (upgradient).

For surface water, the compliance monitoring points for the site is depicted on Figure 5 and is represented by the surface water sampling locations, SW-1 through SW-4.

The schedule for monitoring is annual samples obtained in October of each year. The monitoring wells were designed and constructed in accordance with the specifications in the North Carolina Well Construction Standards, Rule 15A NCAC 2C .0108.

3.4.3 Field Sampling

Only experienced field personnel will conduct site-sampling activities. A copy of the sampling plan will be provided to the sampling team and will be reviewed by the sampling team prior to each sampling event. Personnel will wear sterile, disposable latex or nitrile gloves during all groundwater sampling activities. At a minimum, the gloves will be replaced at each sample location. New, disposable Teflon sampling bailers will be used wherever possible.

Groundwater sampling involves three general tasks:

- The measuring of the static water level and well depth to calculate the volume of water in the well

- Properly purging the appropriate well volume to ensure a sample representative of the aquifer is obtained; and

- Collecting, field filtering, preserving and handling the groundwater samples prior to receipt by the laboratory in a way that maintains sample integrity.

There is no demonstrated impact to the aquifer as a result of the operation of the landfill, however, per industry standards, sampling order will still consist of initiating the upgradient wells followed by the downgradient wells, i.e, MW-1A, MW-1, MW-4, MW-3 and MW-2.

3.4.4 Well Sampling Procedures

The initial step is to measure the water level and the depth of the well before purging. This will be accomplished by lowering an electrical water level indicator into the well until is touches the water and measures a response. The water level measurements shall be taken to the nearest 0.01-foot at the north edge of the well casing. The water level indicator will be thoroughly decontaminated before and between each well. Each well will have a referenced point from which its water level measurement is taken. The reference point shall be established in relation to a permanent benchmark, as mean sea level (MSL), and the survey shall note the well location. Water level elevations will be measured within a 24-hour period of the day that the samples are collected.

The monitoring wells shall be purged before taking samples in order to clear the well of stagnant water and silts, which is not representative of aquifer conditions. Depending on the stability of pH and conductivity readings, three or more borehole volumes of groundwater in casing shall be withdrawn prior to sample collection. The volume of water present in each well shall be computed using the length of water column and monitoring well inside diameter. Purging the wells will be achieved by using a bailer. The water collected by bailing will be emptied into a graduated 5-gallon bucket to compute total purge volume. The sampler will monitor field parameters (pH, specific conductance, and temperature) periodically during purging process. When purge volume is equal to three casing volumes, and when field parameters are within plus or minus five percent (±5%) over successive readings, the well is ready for sampling.

3.4.5 Sample Collection and Parameters

Following well purging, the wells will be allowed to recharge prior to obtaining samples. Historical results indicate recharge generally occurs within 15 minutes. The parameters for analysis will consist total metals including mercury, arsenic, barium cadmium, lead, selenium, and silver (Table 2). In addition, collected field parameters will include pH, conductivity, temperature, and turbidity.

Non-filtered samples will be used for analysis reported to the Division of Waste Management. The samples will be collected on an annual basis for five years. After the five-year period the need for continued groundwater sampling and analysis will be reevaluated by the Division of Waste Management.

3.4.6 Chain of Custody Procedures

By the use of chain-of-custody procedures, the handling of samples will be traceable from the time of collection to the time of final sample disposition. In general, the field sampling personnel will be responsible for collecting the samples and for logging the samples into assigned field notebooks and the field-sampling log. The field sampling personnel will complete and verify the Chain-of-Custody forms. The laboratory sampleustodian and analysts will be responsible for custody of samples at the laboratory.

Prior to collecting samples in the field, the sampling personnel will obtain the sample bottles necessary for sampling. Field samplers will label each sample collected, filling ithe appropriate information in waterproof ink. Field personnel will record the sample number, date and time of sample collection, personnel involved, type of sample, type of analysis to be performed, type of containers filled, volume of sample collected, and preservative used. Chain-of-Custody forms will accompany sample containers to document the transfer of the containers and samples from the originating laboratory, through the field collection, and to the laboratory receiving the samples for analyses. A sample container is under custody in the field if any one of the following conditions exists:

- It is in the field investigator's actual possession;
- It is in the field investigator's view, after being in his/her physical possession;
- It was in the field investigator's physical possession and then she/he secured it to prevent tampering; and
- It is in a secure area restricted to authorized personnel only.

A self-adhesive sample label will be affixed to each sample bottle before sampleollection. At a minimum, the sample label will contain the following:

- Client - Job Name/Project Number
  Sample Identification
  Date and Time Collected (except for duplicate samples)
  Sampler's Signature (or initials)
  Preservatives Added

The field sampling personnel will complete and verify the Chain-of-Custody forms. A copy of

the Chain-of-Custody will be placed in the project files and the original will accompany the shipped samples. The field technician will retain a copy of the overnight shipping label, which will be placed into the project files. Overnight carrier shipping label numbers will be included on the Chain-of-Custody form at the bottom along with the company name of the carrier. The identity of field duplicate samples will not be disclosed to the analytical laboratory.

For shipment to the laboratory, shipping containers will be sealed and accompanied by the Chain-of-Custody record, with appropriate signatures. The transfer of custody is the responsibility of the field sampling personnel and the laboratory. Upon receipt by the laboratory, a sample custodian will inspect the condition of the samples, reconcile the sample(s) received against the Chain-of-Custody record, log in the sample(s) in the laboratory log book, and store the sample(s) in a secured sample storage room or cabinet until assigned to an analyst for analysis.

3.4.7 Analytical Methods

The laboratory performing the analyses shall use the methods specified in Table 2. The record of groundwater analyses shall include the methods used (by number), the extraction date, and the date of actual analysis. Any deviation from an EPA approved method shall be adequately tested to ensure that the quality of the results meets the performance specifications (e.g., detection limit, sensitivity, precision, accuracy) of the reference method. A planned deviation shall be justified and submitted for approval by North Carolina Division of Waste Management.

3.4.8 Sample Handing and Analysis

Sample containers, preservation methods and holding times that meet US EPA, standards will be used. New containers will be used. Sample bottles for metal analyses will be treated with nitric acid prior to sample collection. Samples for metals analysis will be checked for pH when collected and when they arrive in the laboratory. Additional preservatives will be added if the pH requirements for preservation are not met. If additional preservative is added at the laboratory, these procedures will be documented on the chain-of-custody form for the samples and the logbook.

For delivery of samples to the laboratory, the follow procedure will be implemented

Step Procedure

1 Collect, filter, preserve and seal the samples as outlined in this plan.

2 Place sample containers in laboratory shipping container(s). Samples will be packed securely with packing material to protect sample containers from accidental breakage during shipment and so that the samples do not leak or spill. If necessary, the samples will be packed invermiculite, inside garbage bags, to absorb the liquids if a jars) breaks.

3 Fill shipping container with enough ice and/or frozen ice-packs to last the trip. Place ice/ice packs around sample containers.

4 Complete the chain-of-custody forms.

5 Tape chain-of-custody form to the inside of the shipping container lid

6 Seal shipping container.

7 Deliver or ship to the laboratory. Fastest available shipping methodswill be used whenever required by short holding times or project scheduled.

3.4.9 Field Analytical Techniques

With any field analytical measurement, the equipment used must be suitable for the analytical method to be made and properly calibrated. In addition, field analysis must be conducted on a sample that is considered representative of the source from which it was collected.

3.4.10 Quality Assurance / Quality Control Plan

To assess and verify the performance of the field sampling and laboratory techniques,blank samples, and duplicate samples will be collected and submitted for laboratory analyses

Blanks will consist of a trip blank, field blank, and/or an equipment blank as circumstances require during each sampling round. Equipment blanks will only be necessary if certified disposable equipment is not used to sample the groundwater andsurface water.

3.4.11 Groundwater/Surface Water Sampling - Maintenance Monitoring Report

As indicated earlier, initially, Site Inspections will be conducted quarterly, while groundwater monitoring will be conducted yearly (in October of each year). The Quarterly Inspections and Yearly Groundwater / Surface Water Monitoring will be documented in a yearly "Groundwater/Surface Water Sampling and Maintenance Monitoring Report". This report will be submitted to the NCDENR the first week of December of each year. This report will include the following:

For the groundwater and surface sampling, the report will include:

- Description of the scope-of-work of the groundwater / surface water sampling. Includes a description of sampling techniques and chain-of-custody procedures;
- Figure indicating the sampling locations and calculated groundwater flow direction;
- Tables including the field sampling parameters and historical analytical data;
- Analytical data sheets.

For the quarterly landfill inspections, the report will include:

- A description of procedures utilized to inspect the landfill;
- A description of the results of the inspection by quarter;
- A description of repairs made to the landfill;
- Photo-documentation of the inspection and repairs;
- Tables utilized for the quarterly inspection.

4.0 FINANCIAL ASSURANCE

The section describes the approximate costs associated with the Closure and the Post-Closure of the Old Fort Landfill per Rule .1628 of 15A NCAC 13B.1629. The estimated costs are based on preliminary bids obtained by RJN in November 2011.

4.1 Cost Estimate for Closure of Old Fort Landfill

In order to approximate costs associated with the Closure of the Old Fort Landfill, RJN obtained bids from four private contractors, all capable of completing the workload required of this closure. Based on these bids, RJN is estimating that the construction of proper drainage and the capping of the landfill can be completed for an estimated $785,000. The breakdown of this estimate is illustrated below:

Labor	
Access road improvement	$ 46,700
Construction of Silt Control Measures	$ 14,700
Modify existing ditch along access road	$ 6,600
Install perimeter trench	$ 23,750
Capping of landfill	$ 100,800
Fill in existing sediment basin	$ 7,750
Install drainage features	$ 50,000
Materials	
Rip rap	$ 96,250
Landscaping fabric	$ 0
Pea stone	$ 99,000
Topsoil and seed	$ 49,000
Miscellaneous materials including piping	$ 100,000
Supervision	
Geological Supervision and QA/QC	$ 50,000
Administration, reporting	$ 50,000
Unplanned contingencies	
25 % contingency	$ 150,000
TOTAL	**$ 804,550**

Upon completion and approval of the Closure Plan, the selected contractor will submit a final cost estimate for the approved Closure Plan that reflects the elements in the SESC Plan and Closure Plan.

4.2 Cost Estimate for Post Closure of Old Fort Landfill

As indicated earlier in this document, RJN has proposed quarterly inspections of the landfill and yearly groundwater / surface water monitoring. The costs for these tasks are outlined below and are indicated at approximately $10,000 per year.

1.	Inspections / record keeping	$ 16,000 per year
2.	Yearly GW/ Surface water monitoring	$ 7,000 per year
3.	Maintenance	
	– preventative and corrective for cover and drainage	$ 15,000 per year

4.3 Financial Assurance

The financial assurance document is included in the approved SESC Plan.

5.0 CERTIFICATION

This Closure Post Closure Plan was prepared by Robert J. Nowakowski, CPG, B.S Geology, an environmental professional with 22 years of experience.

Robert Nowakowski, CPG
RJN Environmental Inc.

FIGURES

FIGURE 1 - SITE MAP

OLD FORT LANDFILL

OLD FORT TOWNSHIP, McDOWELL COUNTY, NORTH CAROLINA

PLAN INDEX		
FILE NO.	DESCRIPTION	NO.
JDR-2264-01	OVERALL LOCATION	1
JDR-2264-02	SOIL MAP	2
JDR-2264-03	DETAIL SHEET	3

N

SCALE: 1" = 100'

BY	MARK	REVISIONS	DATE

THE WORK REPRESENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER FOR THIS SPECIFIC APPLICATION AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORDANCE WITH THE CONDITIONS PREVALENT AT THE TIME THE DESIGN WAS DONE. THE ENGINEER DOES NOT GUARANTEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, CONDITION, DESIGN OR PURPOSE.

OLD FORT LANDFILL
McDOWELL COUNTY, NORTH CAROLINA

OVERALL LOCATION

Spicer group

ST. JOHNS OFFICE
1400 Jeff Drive
St. Johns, MI 48879
Tel. 989-224-2355
Fax. 989-224-2357
www.SpicerGroup.com

DE. BY: DR. BY: JEB CH. BY: APP. BY: PROJECT NO. 119793SG2012

STDS.

DATE MAY, 2012
SCALE AS SHOWN

SHEET 1 OF 3

FILE NO. JDR-2264-01

FIGURE 2 - SITE PLAN

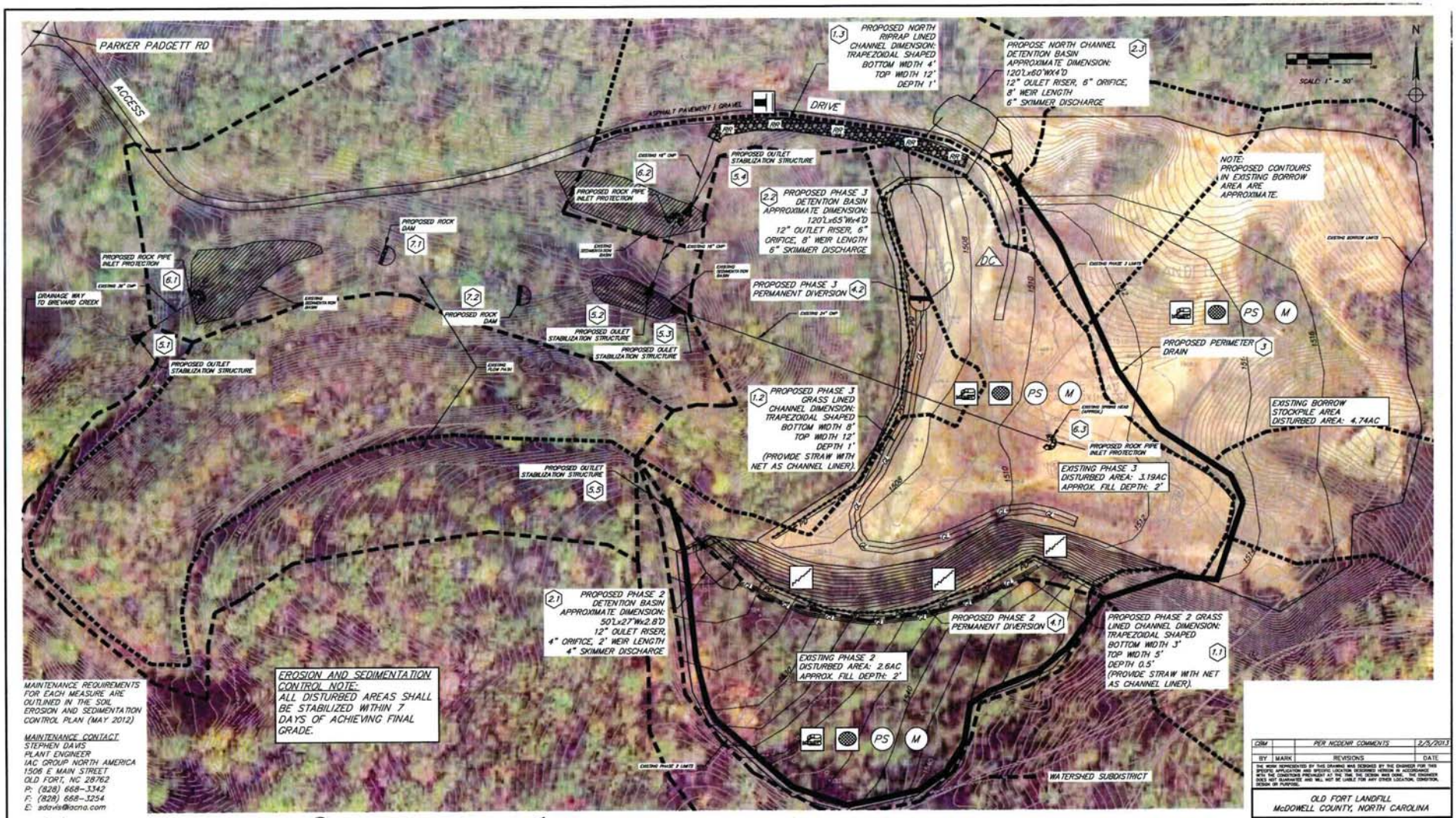
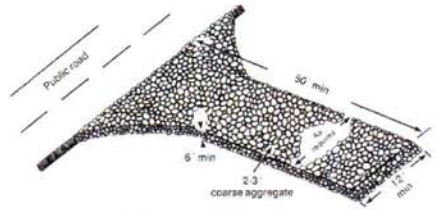
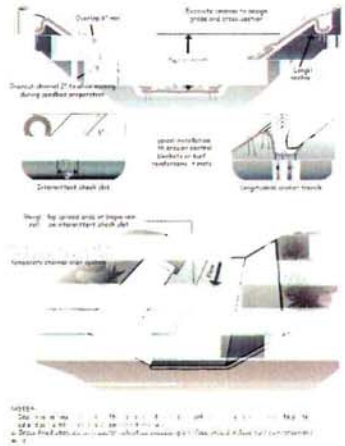
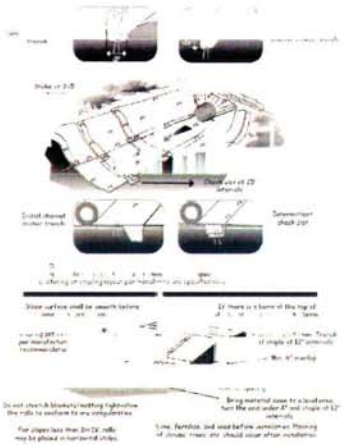
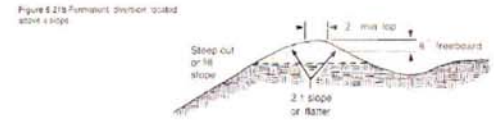


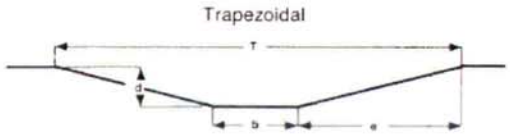
FIGURE 3A - DETAILS







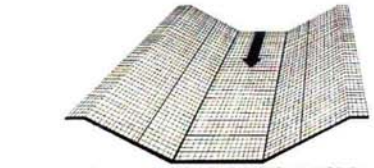


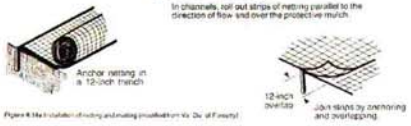


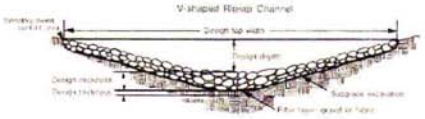
x-section area (A) = bd + Zd²

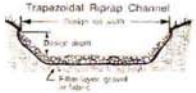
top width (T) = b + 2dz

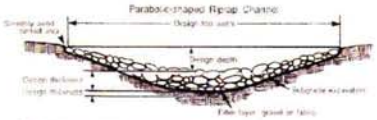
$Z = \frac{a}{d}$

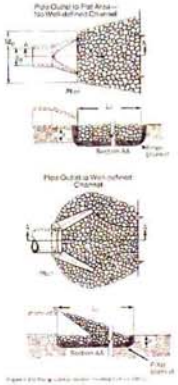


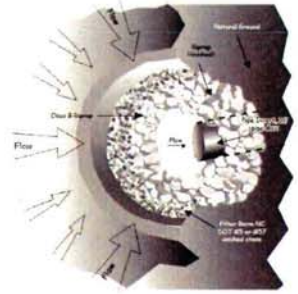


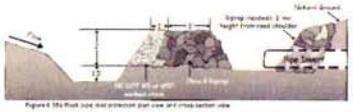












BY	MARK	REVISIONS	DATE

THE WORK REPRESENTED BY THIS DRAWING WAS DESIGNED BY THE ENGINEER FOR THE SPECIFIC APPLICATION AND SPECIFIC LOCATION DESCRIBED HEREON IN ACCORDANCE WITH PRACTICES PREVALENT AT THE TIME THE DESIGN WAS DONE. THE ENGINEER DOES NOT GUARANTEE AND WILL NOT BE LIABLE FOR ANY OTHER LOCATION, CONDITION, DESIGN OR PURPOSE.

OLD FORT LANDFILL
McDOWELL COUNTY, NORTH CAROLINA

DETAILS

Spicer group

ST. JOHNS OFFICE
1400 Zeeb Drive
St. Johns, MI 48879
Tel. 989-224-2355
Fax. 989-224-3357
www.SpicerGroup.com

DE. BY: DR. BY: JEB | CH. BY: APR. BY: | PROJECT NO. 11979.SC2012

STDS. | SHEET 3 OF 3

DATE MAY, 2012 | FILE NO. JDR-2264-03

SCALE AS SHOWN

FIGURE 3B - DETAILS

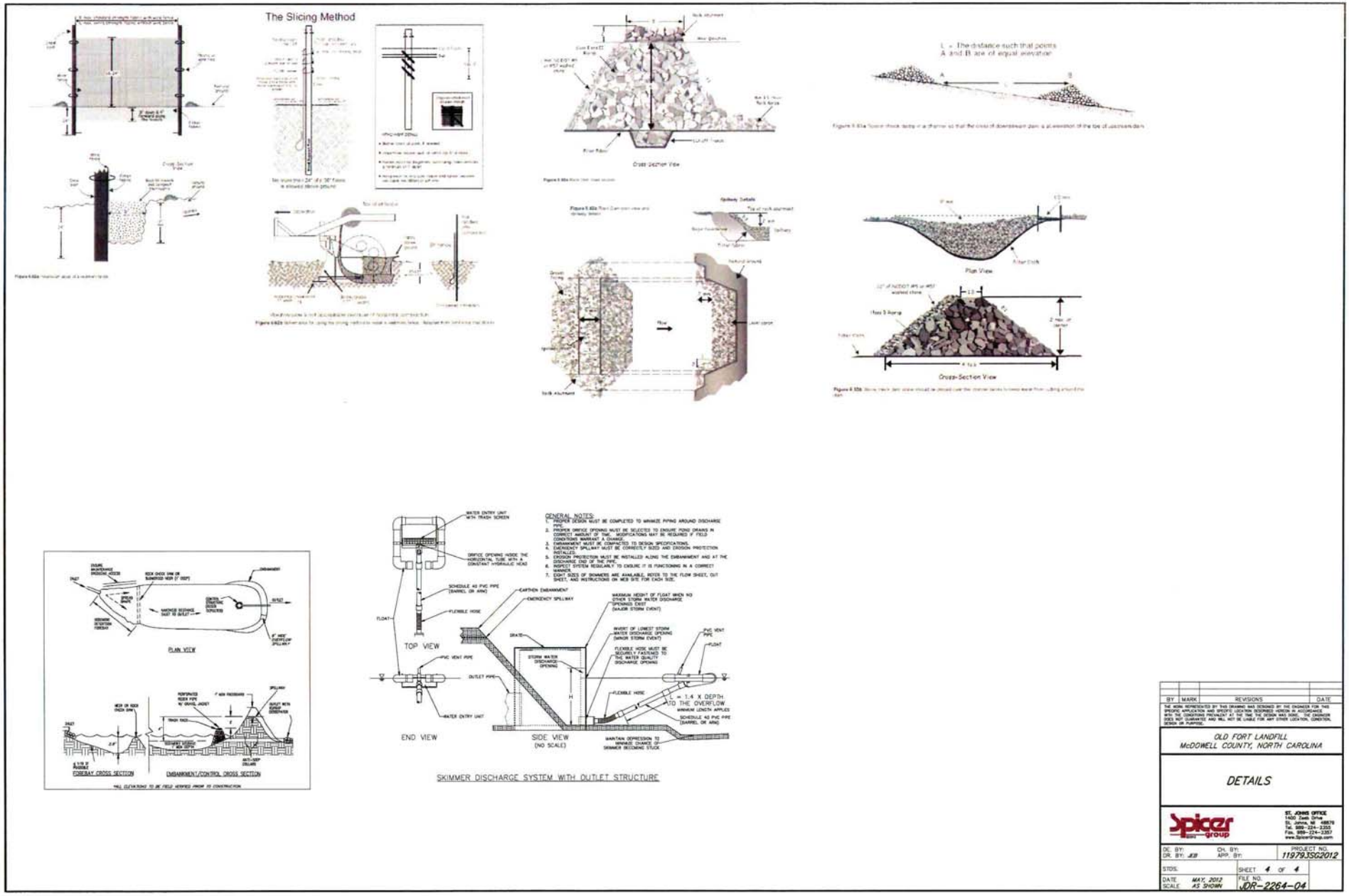


FIGURE 4 – CROSS-SECTIONS OF CAP

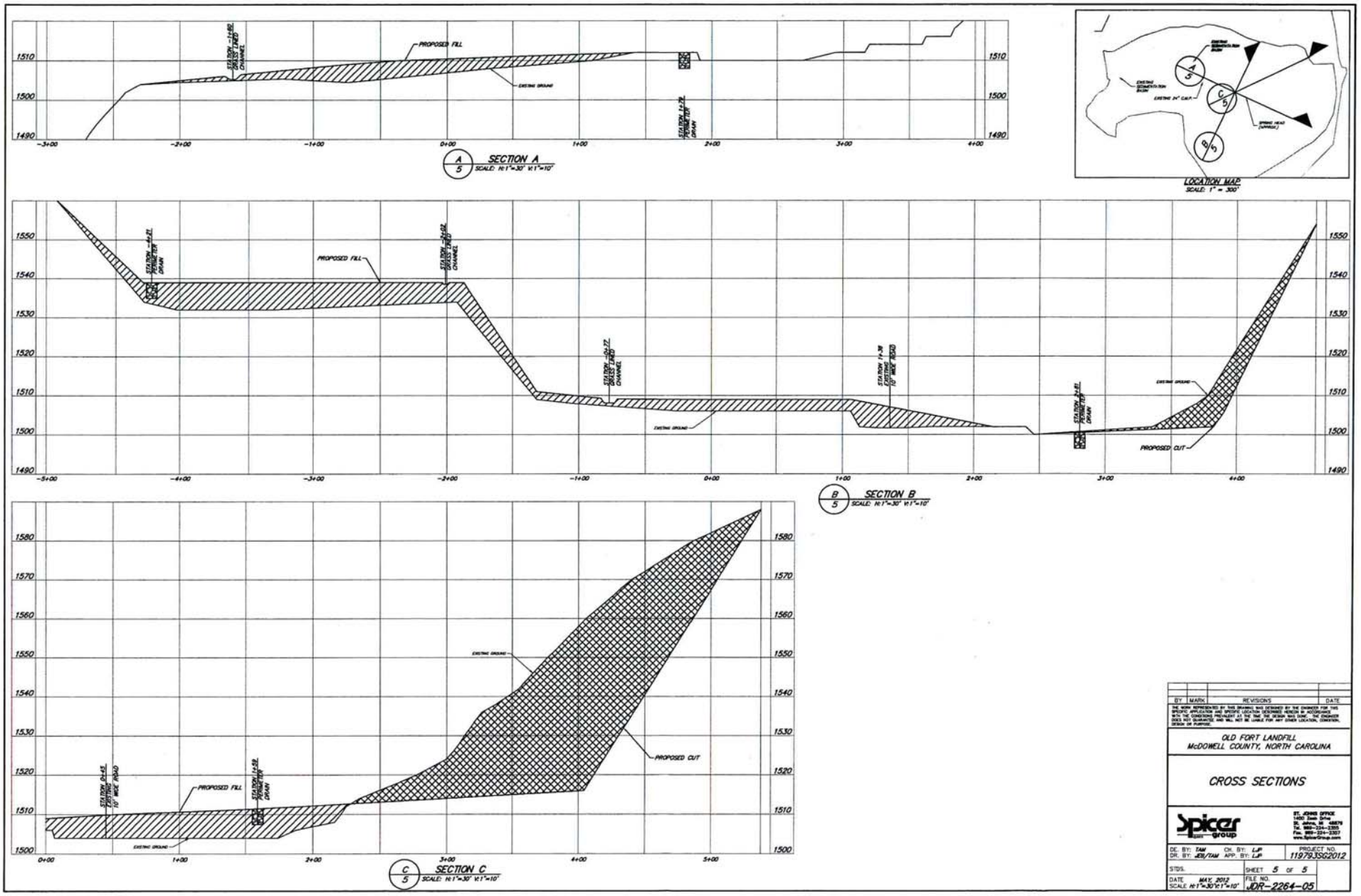


FIGURE 5 – MONITORING LOCATIONS

OLD FORT LANDFILL

OLD FORT TOWNSHIP, McDOWELL COUNTY, NORTH CAROLINA

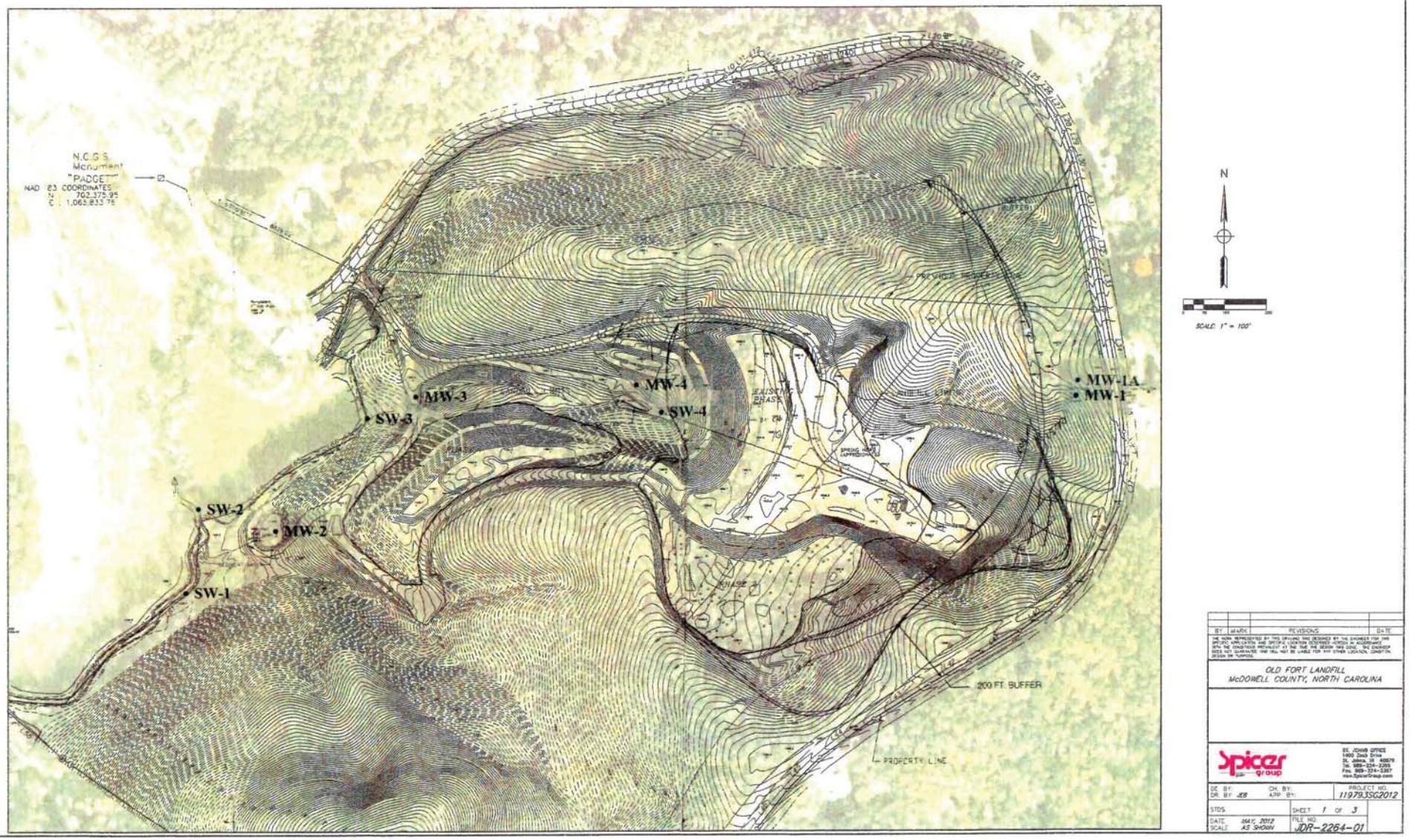
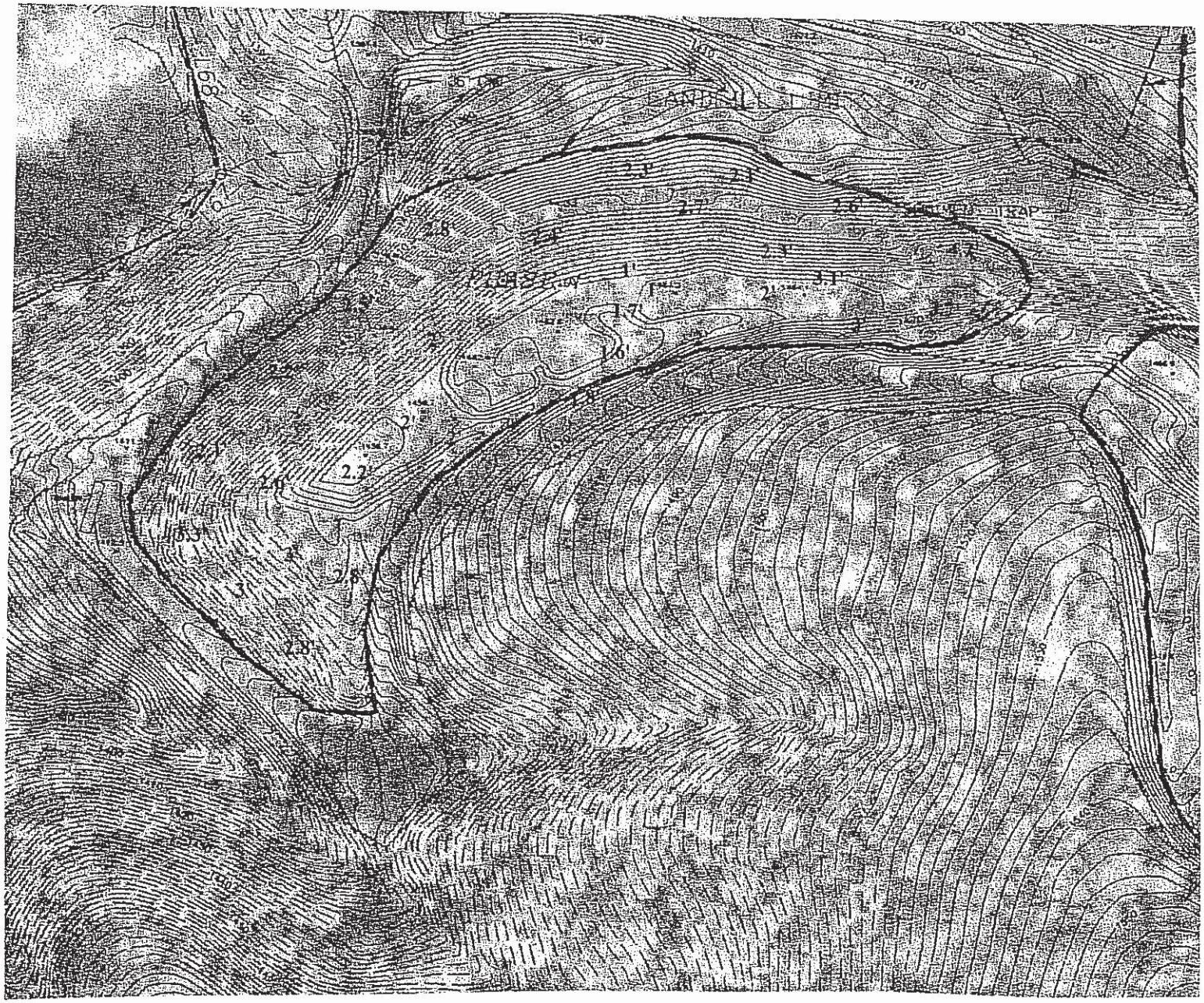


FIGURE 6 - PHASE I CAP THICKNESS (in feet)



TABLES

Date: (MM/DD/YY) _____ **Day: (Circle) S M T W T F S**

Inspected By: (print name) _____ Signature: _____

SECTION 1 - INSPECTION OF ACCESS ROADS

	Pass	Corrective Action Required (describe below)
Gates	_____	_____
Road Surface	_____	_____
Ditches	_____	_____

Corrective Action: _____

Comments: _____

SECTION 2 - INSPECTION OF VEGETATED AREAS (PHASE 2 and #)

	Pass	Corrective Action Required (describe below)
Slope Stability	_____	_____
Vegetation	_____	_____
Erosion	_____	_____
Ditches	_____	_____

Corrective Action: _____

_____

_____

_____

_____

_____

Comments: _____

_____

_____

_____

_____

_____

_____

_____

_____

SECTION 3 - INSPECTION OF CLOSURE FEATURES (Phase 2 and 3)

	Pass	Corrective Action Required (describe below)
1.1 Phase 2 Grass Lined Channel	_____	_____
1.2 Phase 3 Grass Lined Channel	_____	_____
1.3 North Rip Rap channel	_____	_____
2.1 Phase 2 Detention Basin	_____	_____
2.2 Phase 3 Detention Basin	_____	_____
2.3 North Channel Detention Basin	_____	_____
3.0 Perimeter Drain	_____	_____
4.1 Phase 2 Permanent Diversion	_____	_____
4.2 Phase 3 Permanent Diversion	_____	_____
5.1 Outlet Stabilization Structure	_____	_____
5.2 Outlet Stabilization Structure	_____	_____
5.3 Outlet Stabilization Structure	_____	_____
5.4 Outlet Stabilization Structure	_____	_____
5.5 Outlet Stabilization Structure	_____	_____
6.1 Rock Pipe Inlet Projection	_____	_____
6.2 Rock Pipe Inlet Projection	_____	_____
6.3 Rock Pipe Inlet Projection	_____	_____
7.1 Rock Dam	_____	_____
7.2 Rock Dam	_____	_____
7.3 All Edge of Waste Signs	_____	_____

SECTION 3 - INSPECTION OF CLOSURE FEATURES (Phase 2 and 3)

Corrective Action:

Comments:

SECTION 4 - INSPECTION OF PHASE 1 CELL

	Pass	Corrective Action Required (describe below)
Perimeter Road	_____	_____
Edge of Waste Signs	_____	_____
Cap Slope Stability	_____	_____
Cap Integrity	_____	_____
Vegetation overgrowth	_____	_____
Trees to remove (dead or compromised)	_____	_____
Perimeter Drainage	_____	_____
Drainage Basin	_____	_____

Corrective Action: _____

_____

_____

_____

Comments: _____

_____

_____

_____

SECTION 5 - FOLLOW-UP INSPECTIONS OF PREVIOUSLY REPORTED DEFICIENCIES

Existing Conditions:

Comments:

TABLE 2

SAMPLE CONTAINERS, HOLDING TIMES, and ANALYTICAL METHODS FOR METALS

Old Fort Landfill - 1240 Parker-Padgett Road, Old Fort, North Carolina

Parameter	Maximum Holding Time	Container Type/Sample Volume	Preservation Technique	Method Description
temperature (field)	15 minutes	Plastic/glass 100ml	None	Meter
pH (field)	15 minutes	Plastic/glass 100ml	None	Meter
specific conductance (field)	28 days	Plastic/glass 100ml	cool, 4eC	Meter
total dissolved solids (field)	28 days	Plastic/glass 100ml	cool, 4eC	Meter
Arsenic	6 months	Plastic/glass 100ml	HNO3 to ph<2	EPA 6010B
Barium	6 months	Plastic/glass 100ml	HNO3 to ph<2	EPA 6010B
Cadmium	6 months	Plastic/glass 100ml	HNO3 to ph<2	EPA 6010B
Chromium (total)	6 months	Plastic/glass 100ml	HNO3 to ph<2	EPA 6010B
Iron	6 months	Plastic/glass 100ml	HNO3 to ph<2	EPA 6010B
Lead	6 months	Plastic/glass 100ml	HNO3 to ph<2	EPA 6010B
Manganese	6 months	Plastic/glass 100ml	HNO3 to ph<2	EPA 6010B
Mercury	6 months	Plastic/glass 100ml	HNO3 to ph<2	Digestion AA Furnace
Selenium	6 months	Plastic/glass 100ml	HNO3 to ph<2	EPA 6010B
Silver	6 months	Plastic/glass 100ml	HNO3 to ph<2	EPA 6010B

APPENDIX A

SESC PLAN APPROVAL LETTER

NCDENR

North Carolina Department of Environment and Natural Resources
Division of Energy, Mineral, and Land Resources
Land Quality Section

Tracy Davis, PE, CPM
Director

Pat McCrory, Governor
John E. Skvarla, III, Secretary

March 28, 2013

LETTER OF APPROVAL

IAC Old Fort II, LLC
ATTN: Dennis E. Richardville, Assistant Secretary
28222 Telegraph Road
Southfield, MI 48034

RE: Project Name: Old Fort Landfill Permit #56-03
Acres Approved: 11
Project ID: MCDOW-2013-003
County: McDowell
Street and City: Parker Padgett Road, Old Fort
River Basin: Catawba
Stream Classification: C
Submitted By: RJN Environmental, Inc., Robert J. Nowakowski, CPG
Date Received by LQS: December 14, 2012 and March 18, 2013
Plan Type: Revision
Pre-application meeting: No

Dear Mr. Richardville:

This office has reviewed the subject erosion and sedimentation control plan. We find the plan to be acceptable and hereby issue this Letter of Approval under the Sedimentation Pollution Control Act of 1973. The enclosed Certificate of Approval must be posted at the job site. This plan approval shall expire three (3) years following the date of approval, if no land-disturbing activity has been undertaken, as is required by Title 15A NCAC 4B .0129.

Please be aware that your project will be covered by the enclosed NPDES Construction Stormwater General Permit NCG010000. You should first become familiar with all of the requirements for compliance with the enclosed general permit.

Title 15A NCAC 4B .0118(a) requires that a copy of the approved erosion control plan be on file at the job site. Also, this letter gives the notice required by G.S. 113A-61.1(a) of our right of periodic inspection to insure compliance with the approved plan.

North Carolina's Sedimentation Pollution Control Act is performance-oriented, requiring protection of existing natural resources and adjoining properties. If, following the commencement of this project, the erosion and sedimentation control plan is inadequate to meet the requirements of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statute 113A-51 through 66), this office may require revisions to the plan and implementation of the revisions to insure compliance with the Act. Acceptance and approval of this plan is conditioned upon your compliance with Federal and State water quality laws, regulations, and rules. In addition, local city or county ordinances or rules may also apply to this land-disturbing activity. This approval does not supersede any other permit or approval.

Please note that this approval is based in part on the accuracy of the information provided in the Financial Responsibility Form, which you provided. You are requested to file an amended form if there is any change in the information included on the form. In addition, it would be helpful if you notify this office of the proposed starting date for this project. Please notify us if you plan to have a preconstruction conference.

Your cooperation is appreciated.

Sincerely,

Kristin Hicklin
Land Quality Section

Enclosures: Certificate of Approval
NPDES Permit

cc: RJN Environmental, Inc., Robert J. Nowakowski, CPG, via pdf
Susan Wilson, DWQ – copy of FRO via pdf

CERTIFICATE OF PLAN APPROVAL

The posting of this certificate certifies that an erosion and sedimentation control plan has been approved for this project by the North Carolina Department of Environment and Natural Resources in accordance with North Carolina General Statute 113A – 57 (4) and 113A – 54 (d) (4) and North Carolina Administrative Code, Title 15A, Chapter 4B.0107 (c). This certificate must be posted at the primary entrance of the job site before construction begins and until establishment of permanent groundcover as required by North Carolina Administrative Code, Title 15A, Chapter 4B.0127 (b).

Old Fort Landfill Permit #56-03 **McDowell**

Project Name and Location **MCDOW-2013-003**

March 28, 2013

Date of Plan Approval

NCDENR

Regional Engineer

FINANCIAL RESPONSIBILITY/OWNERSHIP FORM
SEDIMENTATION POLLUTION CONTROL ACT

No person may initiate any land-disturbing activity on one or more acres as covered by the Act before this form and an acceptable erosion and sedimentation control plan have been completed and approved by the Land Quality Section, N.C. Department of Environment and Natural Resources. (Please type or print and, if the question is not applicable or the e-mail and/or fax information unavailable, place N/A in the blank.)

Part A.

1. Project Name OLD FORT LANDFILL PERMIT #56-03

2. Location of land-disturbing activity: County McDowell City or Township Old Fort

   Highway/Street: Parker Padget Road Latitude :3537398420 Longitude :8273943510

3. Approximate date land-disturbing activity will commence: April-May 2013

4. Purpose of development (residential, commercial, industrial, institutional, etc.): Institutional

5. Total acreage disturbed or uncovered (including off-site borrow and waste areas): 11ac

6. Amount of fee enclosed: $ 650.00. The application fee of $65.00 per acre (rounded up to the next acre) is assessed without a ceiling amount (Example: a 9-acre application fee is $585).

7. Has an erosion and sediment control plan been filed? Yes____ No____ Enclosed x

8. Person to contact should erosion and sediment control issues arise during land-disturbing activity:

   Name Robert Nowakowski E-mail Address rjn@rnenv.com

   Telephone (586) 872-2416 Cell # (248) 219-9228 Fax # (586) 879-0176

9. Landowner(s) of Record (attach accompanied page to list additional owners):

IAC Old Fort II, LLC	(248) 455-7000	(248) 455-7001
Name	Telephone	Fax Number
28333 Telegraph Road	28333 Telegraph Road	
Current Mailing Address	Current Street Address	
Southfield MI 48034	Southfield MI 48034	
City State Zip	City State Zip	

10. Deed Book No. 655 Page No. 485 Provide a copy of the most current deed.

Part B.

1. Person(s) or firm(s) who are financially responsible for the land-disturbing activity (Provide a comprehensive list of all responsible parties on an attached sheet):

IAC Old Fort II, LLC	c/o Dennis E. Richardville; drichardville@iacgroup.com
Name	E-mail Address
28333 Telegraph Road	28333 Telegraph Road
Current Mailing Address	Current Street Address
Southfield MI 48034	Southfield MI 48034
City State Zip	City State Zip

   Telephone (248)455-7000 Fax Number (248)455-7001

2. (a) If the Financially Responsible Party is not a resident of North Carolina, give name and street address of the designated North Carolina Agent:

David Sudzina	dsudzina@iacgroup.com
Name	E-mail Address
1506 E. Main Street	1506 E. Main Street
Current Mailing Address	Current Street Address
Old Fort NC 28762	Old Fort NC 28762
City State Zip	City State Zip
Telephone (828)688-3210	Fax Number

(b) If the Financially Responsible Party is a Partnership or other person engaging in business under an assumed name, **attach a copy of the Certificate of Assumed Name.** If the Financially Responsible Party is a Corporation, give name and street address of the Registered Agent:

CT Corporation System	
Name of Registered Agent	E-mail Address
225 Hilsborough Street	
Current Mailing Address	Current Street Address
Raleigh, NC 27603	
City State Zip	City State Zip
Telephone (919) 821-7139	Fax Number

The above information is true and correct to the best of my knowledge and belief and was provided by me under oath (This form must be signed by the Financially Responsible Person if an individual or his attorney-in-fact, or if not an individual, by an officer, director, partner, or registered agent with the authority to execute instruments for the Financially Responsible Person). I agree to provide corrected information should there be any change in the information provided herein.

Dennis E. Richardville	Assistant Secretary
Type or print name	Title or Authority
	01.15.2013
Signature	Date

I, Debra A. Jett, a Notary Public Acting in the County of Oakland

State of Michigan, hereby certify that Dennis E. Richardville appeared personally before me this day and being duly sworn acknowledged that the above form was executed by him.

Witness my hand and notarial seal, this 15th day of January, 2013

DEBRA A. JETT
NOTARY PUBLIC, STATE OF MI
COUNTY OF LIVINGSTON
MY COMMISSION EXPIRES Mar 7, 2018
ACTING IN COUNTY OF OAKLAND

Notary: Debra A. Jett

My commission expires 03.07.2018