WEST VIRGINIA

DEPARTMENT OF ENVIRONMENTAL PROTECTION

OFFICE OF ABANDONED MINE LANDS

AND RECLAMATION

_ _ _ _ _ _ _ _ _ _ _

COUNTY

OF

NICHOLAS

_ _ _ _ _ _ _ _ _ _ _.

NAME OF PROJECT

SUGARCAMP RUN BURNING REFUSE PHASE II

_ _ _ _ _ _ _ _ _ _ _.

N O T I C E

ALL PAPERS BOUND WITH OR ATTACHED TO

THE BID FORM ARE A NECESSARY PART

THEREOF AND MUST NOT BE DETACHED

PROJECT SPECIFICATION BOOK

INDEX

ARTICLE I - DEFINITIONS

ARTICLE I - DEFINITIONS

1.0 **"Bidder" refers to the person, firm, or company offering to furnish the work called for by the specifications herein.**

2.0 **"Chief" shall mean the Chief of the West Virginia Department of Environmental Protection's, Office of Abandoned Mine Lands & Reclamation.**

3.0 **"Regional Engineer or Engineer" refers to the head of the Construction Group of the Office of Abandoned Mine Lands & Reclamation of the West Virginia Department of Environmental Protection in each regional office.**

4.0 **"Construction Supervisor" refers to the regional supervisor of the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands & Reclamation Construction Inspectors.**

5.0 **"Contract" refers to a purchase order placed by the West Virginia Department of Administration on behalf of the Department of Environmental Protection and accepted by the Contractor together with these specifications and all other documents incorporated therein by reference.**

6.0 **"Contract Documents" consist of all of the articles, sections, and attachments to the contract, including Information for Bidders, General Conditions, General Requirements, Special Conditions, drawings, specifications, all addenda issued prior to execution of the contract, and change orders and other written modifications issued after execution of the contract and executed by both parties to the contract.**

7.0 **"Contractor" refers to the person, firm or company contracting with the West Virginia Department of Environmental Protection to furnish the work called for in the contract.**

8.0 **"Cabinet Secretary" refers to the Cabinet Secretary of the West Virginia Department of Environmental Protection.**

9.0 **"DEP" means the West Virginia Department of Environmental Protection.**

10.0 **"Design Engineer" shall mean the representative of the Office of Abandoned Mine Lands & Reclamation's Engineering Section or the Architect/Engineering consulting firm, whichever designed the project.**

11.0 **"Inspector" shall refer to DEP's Inspector, who monitors all construction operations at the project site.**

12.0 **"Project" shall mean the Abandoned Mine Lands Project described and referred to by the specifications herein.**

13.0 **"Sub-contractor" refers to the person, firm or company contracting directly with the Contractor and not with DEP to furnish the Contractor with any portion of the work called for by the contract.**

ARTICLE I - DEFINITIONS

14.0 "Work" shall be understood to mean and include any and all of the labor, supervision, services, materials, machinery, equipment, tools, supplies and facilities called for by and required to complete the contract.

15.0 "Stabilization Measures" as noted in Section 5 Vegetative Practices shall be understood to mean and include any/all measures necessary for preventing erosion & sediment to the project site. This may include seeding and mulching, mulching without seed, silt fence, wattles. Check dikes, sumps or any other method required to stabilize a site that work has stopped for a time exceeding fourteen (14) days.

ARTICLE II - GENERAL CONDITIONS

ARTICLE II – GENERAL CONDITIONS

Sections Included:

ARTICLE II - GENERAL CONDITIONS

1.0 ENUMERATION OF CONTRACT DOCUMENTS

1.1 Drawings

Construction drawings (32 sheets) for the reclamation of the project as prepared by for the West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation, 601 57th Street, SE, Charleston, West Virginia 25304-2345, Telephone (304) 926-0485.

1.2 Specifications

See Index

1.3 Addenda

No._____ **Date**_____

No._____ **Date**_____

No._____ **Date**_____

No._____ **Date**_____

2.0 CORRELATION OF DOCUMENTS

2.1 The intent of the contract documents is to include all labor, materials, equipment, operations and transportation necessary for the proper execution and completion of the work. The contract documents are complementary and what is required by one is required by all.

2.2 The Contractor shall carefully study and compare the contract documents and shall at once report to DEP any error, inconsistency or omission it may discover. Contractor shall not proceed with the work affected by such error, inconsistency, or omission until resolved to the satisfaction of itself and DEP.

2.3 The drawings and specifications are correlative and shall be accepted and used as a whole and not separately. Should any item be omitted from the drawings and be included in the specifications, and be required to complete the work under the contract, it shall be executed as if shown on both and contained in both; except that it is not intended that items or work not applicable or required be provided unless it is consistent therewith and reasonably inferable therefrom as being necessary to produce the intended results.

2.4 In case of disagreement or conflict between drawings and specifications, or inconsistencies, errors, or if omissions be discovered in the drawings and specifications, or if in any part the meaning of either or both shall be considered obscure or uncertain, the Chief or his/her authorized

representative shall be immediately notified thereof. No work so affected by such circumstances shall proceed until the Chief or his/her authorized representative renders a decision and/or interpretation thereon. Large scale drawing details shall take precedence over drawings of lesser scale. Words and abbreviations which have well known technical or trade meanings are used in the contract documents in accordance with such recognized meanings.

3.0 EXAMINATION OF PREMISES

3.1 Before submitting proposals for the work, each bidder will be held to have examined the premises and satisfied itself as to the existing conditions under which it will be obliged to operate, or that will in any manner affect the work under the contract. Bidders shall have become familiar with the drawings and specifications and have compared them with existent conditions.

3.2 By executing the contract, Contractor represents that it has visited the site, familiarized itself with the local conditions under which the work is to be performed, and correlated its observations with the contract documents. No allowance will subsequently be made by reason of neglect or error on the part of the Contractor for failing to inform itself of the requirements and conditions contained herein.

4.0 MATERIALS & WORKMANSHIP

4.1 All installed materials and equipment shall be new, and all materials, equipment, and workmanship shall be of kind and type specified, and in all cases, be of good quality. Contractor shall, if required, furnish satisfactory evidence as to kind and quality of its materials, equipment and workmanship.

4.2 The Contractor shall provide and pay for all labor, materials, equipment operations, tools, construction equipment, and machinery, transportation, water, heat, utilities, and other facilities and services necessary for the proper execution and completion of the work. The Contractor at all times shall supply sufficient skilled and other labor necessary to adequately fulfill the requirements of the drawings and specifications, and provide for expeditious and practicable execution of the work to its completion.

4.3 The installation or application of all devices and materials shall be in accordance with the manufacturer's installation application data, shop drawings and instructions, unless otherwise provided herein.

5.0 GUARANTEE & MAINTENANCE

5.1 The materials and workmanship affected by the Contractor are subject to the guarantee established by custom of the respective trades. In the absence

of a trade guarantee custom or a special guarantee provision, the work, both as to the materials and workmanship, shall upon acceptance of final inspection by the Contractor be considered guaranteed by the Contractor for one (1) year from the date of the acceptance of the work. Neither the final acceptance nor the final payment shall relieve the Contractor of responsibility for negligence or faulty materials, and for defects appearing within the guarantee period shall be remedied at the expense of the Contractor upon written notice.

5.2 During the one-year guarantee period, the Contractor will maintain the project to the conditions existing at the date of the acceptance of the work. Any failures due to the negligence or workmanship of the Contractor in any of the work which develop during the guarantee period shall be corrected by the Contractor at its expense.

5.3 The one-year guarantee period shall not be construed as being an extension of the performance time allotted for work under the contract.Failure to perform warranty work shall extend performance time until work is completed and accepted

5.4 Guarantees concerning revegetation may be further defined in the technical specifications contained herein.

6.0 SUPERVISION & CONSTRUCTION PROCEDURES

6.1 The Contractor shall supervise and direct the work, using its best skill and attention. It shall be responsible for all construction means, methods, techniques, and procedures, coordinating all portions of the work, and for cooperating with appropriate DEP personnel and with other contractors in every way possible.

6.2 The Contractor shall be responsible to DEP for the acts and omissions of its employees, its subcontractors and their agents or employees, and other persons performing any of the work under a contract with the Contractor.

6.3 The Contractor will be supplied with three (3) copies of the plans and specifications. It shall have available on the work site at all times one (1) copy of said plans and specifications. Additional copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

7.0 PERMITS, LAWS, REGULATIONS, & RIGHTS OF ENTRY

7.1 The WVDEP-AML has obtained a Construction Storm Water General Permit for this project from WVDEP Division of Water and Waste Management (WVDEP DWWM). The registration for this reclamation project will be modified to include the Contractor as Co-Applicant #1, with the WVDEP-AML being Co-Applicant #2. As such, the Contractor shall assume responsibility for compliance with the terms and conditions of the permit including modifications and any future correspondence such as registration renewal invoices, inspection reports, and notices of violation shall be forwarded to the Contractor. Upon award of the contract, the Contractor shall complete a Co-Applicant #1 signature page and submit the completed form to WVDEP-AML prior to scheduling a Pre-Construction Conference.

Upon receipt of the completed form, WVDEP-AML will request the WVDEP DWWM to modify the existing NPDES registration for this project to make the Contractor the Co-Applicant #1 to the permit.

The WVDEP DWWM will notify the Contractor and WVDEP-AML when the successful transfer of registration under WV/NPDES Storm Water Construction General Permit (No.WV0115924) is completed. A Notice to Proceed will not be issued until the contractor signs the co-applicant form and submits to the Office of Abandoned Mine Lands.. Once the transfer has been completed, the WVDEP will continue to be responsible for any modification fees and annual renewal fees incurred up until the date of the final inspection of the project that occurs after completion of construction activities at the site. The Contractor shall be responsible for any and all costs associated with violations and fines assessed against the project that are a result of the Contractor's negligence, carelessness, or failure to install permanent controls as part of the work as scheduled.

The Contractor shall apply for a Notice of Termination (NOT) from WVDEP DWWM via the Construction Storm Water website http://www.dep.wv.gov/Programs/stormwater/csw/Documents/Construction upon completion of construction activities at the site. The NOT shall be issued by WVDEP DWWM upon completion of the project. The Contractor will continue to be bound by the terms and conditions of the permit until the NOT has been approved by WVDEP DWWM. Once the project is complete, the Contractor will still bear responsibility for the NPDES registration until a NOT is received from the WVDEP DWWM.

7.2 **The Contractor shall comply with all laws, ordinances, rules, orders and regulations relating to the performance of the work, the protection of adjacent property, the maintaining of passageways, guard fences, or other protective facilities.**

7.3 **All applicable Federal and State laws and regulations, municipal ordinances, and the rules and regulations of all public authorities having jurisdiction over construction of the project shall apply to the contract throughout, and are incorporated herein by reference.**

7.4 **DEP shall be responsible for obtaining all construction rights of entry for the project unless otherwise provided for in the Construction Specifications.**

7.5 **The Contractor agrees to indemnify and hold harmless the DEP from all liability and/or damages resulting from the Contractor's use of property for which the Contractor was to obtain rights of entry for borrow, disposal, access or other purposes. Said indemnification shall include, but is not limited to, liability and damages resulting from the Contractor's failure to obtain any or not all the right of entry; failure to utilize appropriate language in the right of entry agreements; or failure to obtain the permission and signatures of all persons or entities holding a legal interest in the subject property(ies) covered by the rights of entry.**

7.6 **All right of entry agreements the Contractor obtains for borrow, disposal, access or other purposes for this project shall include a provision requiring the property owner to indemnify and hold harmless the DEP for the Contractor's actions and any injury or damages whatsoever resulting from the Contractor's use of the property.**

Co-Applicant #1 Signature Page

Co-Applicant#1: _____

New and/or Modification of NPDES Storm Water of Construction Project
Name:_____

BY COMPLETING AND SUBMITTING THIS APPLICATION, I HAVE REVIEWED AND UNDERSTAND AND AGREE TO THE TERMS AND CONDITIONS OF THE GENERAL PERMIT ISSUED ON DECEMBER 05, 2012. I UNDERSTAND THAT PROVISIONS OF THE PERMIT ARE ENFORCEABLE BY LAW, VIOLATION OF ANY TERM AND CONDITION OF THE GENERAL PERMIT AND /OR OTHER APPLICABLE LAW OR REGULATIONS CAN LEAD TO ENFORCEMENT ACTION.

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED ON THIS FORM AND ALL ATTACHMENTS AND THAT, BASED ON MY INQUIRING OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION. THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT.

_____ _____

(CO- APPLICANT #1 SIGNATURE) DATE

Print Name:_____

Print Title: _____

Address: _____

City: _____State:_____ Zip:_____

Telephone Number: (_____)_____-_____

Email: _____

FEIN: _____

8.0 SAFETY REQUIREMENTS

8.1 Particular attention is directed to the "West Virginia Safety Code for Building Construction" as published by the West Virginia Department of Labor. Observance of and compliance with said laws, regulations and codes shall be solely with and without qualification the responsibility of the Contractor.

8.2 The Contractor, subcontractors, other contractors and all employees and workers shall comply with the provisions of the Occupational Safety and Health Act 29 CRF 1926. The Contractor shall be held liable to DEP for any health and safety infractions, on the Contractor's part, which cause DEP to receive a citation and/or fine from any local, State or Federal agency. Actual costs involved will be paid by the Contractor to the satisfaction of DEP.

9.0 PROTECTION OF PERSONS & PROPERTY

9.1 The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the work.

9.2 Safety of Persons and Property: The Contractor shall take all reasonable precautions for the safety of, and shall provide all reasonable protection, preventing damage, injury, or loss to:

(a) All employees on the work, and all other persons who may be affected thereby;

(b) All the work and all materials and equipment to be incorporated therein, whether in storage on or off the site, under the care, custody or control of the Contractor, or any of its subcontractors or their employees or subcontractors; and

(c) Other property on the site or adjacent thereto, including, but not limited to, paving, roadways, structures, utilities and permanent property boundaries, monuments or markers not designated for removal, or relocation, or replacement in the course of construction. Any damage to these items shall be repaired or replaced at the expense of the Contractor and to the satisfaction of DEP.

9.3 The Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations, and lawful orders of any public authority, bearing on the safety of persons or property, or their protection from damage, injury, or loss.

9.4 The Contractor shall erect and maintain, as required by existing conditions and progress of the work, all reasonable and adequate safeguards for safety and protection. It shall post danger signs and provide other warnings as required against hazards and dangers to persons and property.

9.5 In case of an emergency which threatens injury, loss of life and/or damage to property, the Contractor will be permitted to act, without prior instruction from the Regional Engineer, in a diligent manner. It shall notify the Construction Supervisor immediately thereafter. Any claim for compensation by the Contractor due to such extra work shall be promptly submitted to the Construction Supervisor for verification and approval by the Regional Engineer.

The amount of reimbursement claimed by the Contractor for work arising out of any emergency situation shall be determined by the Chief or his/her authorized representative.

9.6 The Contractor shall be responsible for the verification of existing utilities that may be affected by its work in the project area. It shall be held responsible for any damage to and for maintenance and protection of existing utilities and structures during the performance of the work.

10.0 INSURANCE & WORKER'S COMPENSATION

10.1 Contractor's and Subcontractor's Public Liability, Vehicle Liability and Property Damage Insurance.

The Contractor shall maintain insurance as follows:

(a) Contractor's Public Liability Insurance and Comprehensive Vehicle Liability Insurance shall be in an amount not less than $2,000,000.00 for bodily injury and property damage for each occurrence and not less than $2,000,000.00 aggregate. Additional named insured: Peerless Eagle Coal Company, P.O. Box 707, Summersville, WV 26651.

The required insurance must be written by a company or companies licensed to do business in West Virginia at the time the policy is issued and the policy must be countersigned by a licensed resident agent. Any property owner requiring additional insured shall be added to this policy.

(b) Contractor shall either (1) require each of the subcontractors to procure and to maintain, during the life of its subcontract, subcontractor's Public Liability and Property Damage Insurance of the type and in the same amounts as specified in paragraph (a) above, or (2) insure the activities of its subcontractors in its own policy.

Contractor agrees to indemnify and hold harmless DEP from all liability for personal injury, including death resulting therefrom, and against all liability for property damage sustained by any person or persons, including persons employed by Contractor or subcontractors, which is caused in whole or in part by an act or omission, negligent or otherwise, of the Contractor, its agents, servants, or employees, and to assume the defense of any action brought by such persons to recover damages, and to pay all costs and expenses, including attorney's fees, incurred by DEP as result thereof.

Each party to the contract shall promptly notify the other of the assertion of any claim against which such party is held harmless pursuant to this Section, shall give such other party the opportunity to defend any such claim, and shall not settle any such claim without approval of the indemnifying party.

10.2 Proof of Carriage of Insurance.

The Contractor shall provide DEP, before work commences, with certificates issued by the insurance company or companies issuing the insurance policies required by this Section. The certificates shall show the type, amount, class of operations covered, effective dates, and dates of expiration of such policies. Such certificates shall provide that written notice shall be given to DEP prior to expiration, cancellation, or modification of any such policy, and shall contain substantially the following representation: "The insurance covered by this certificate will not be canceled, or materially modified or altered, except after ten (10) days written notice has been verified as received by the West Virginia Department of Environmental Protection".

10.3 Worker's Compensation Insurance.

All employees of the Contractor, and of subcontractors engaged in the work of this contract, shall be covered by West Virginia Worker's Compensation Insurance. Certificates shall be provided to DEP by the Contractor and subcontractors showing compliance with the Worker's Compensation Laws of West Virginia.

11.0 LABOR LAWS, ORDINANCES, WAGES, AND OTHER CONDITIONS

11.1 The Contractor shall obey and abide by all laws of the State of West Virginia, particularly with respect to the carrying out of public improvements.

The Contractor shall not pay less than the established prevailing minimum wage rate for each particular class of employment in the county in which the work is being performed. This rate shall include and and all time an employee is on the project.

11.2 During the performance of this contract, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, creed, color, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, creed, color, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.
Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notice, to be provided by the contracting officer, setting forth the provisions of this nondiscrimination clause.

(b) Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, creed, color or national origin.

(c) Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, a notice, to be provided by the agency contracting officer, advising the labor union or worker's representative of the Contractor's commitments under Section 202 of Presidential Executive Order #11246 of September 24, 1965 (hereinafter "Executive Order #11246"), as amended by Presidential Executive Order #11375 and supplemented by U.S. Department of Labor regulations 41 CFR Part 60 and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) Contractor will comply with all provisions of Executive Order #11246, and with all of the applicable rules, regulations, and relevant orders of the U.S. Secretary of Labor (hereinafter "Secretary of Labor").

(e) Contractor will furnish all information and reports required by Executive Order #11246, and by the applicable rules, regulations and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders. These provisions shall also apply to DEP or employees of the Federal Government or their designated representatives for the purpose of making audits, examinations, excerpts, or transcriptions.

(f) In the event of the Contractor's noncompliance with these nondiscrimination clauses, this contract may be canceled, terminated, or suspended, in whole or in part, and the Contractor may be declared ineligible for further government contracts in accordance with procedures authorized in Executive Order #11246, and such other sanctions may be imposed and remedies invoked as provided in Executive Order #11246, or by rules, regulations, or orders of the Secretary of Labor, or as otherwise provided by law.

(g) The Contractor will include the provisions of these paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order #11246, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontractor or purchase order as the contracting agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event the Contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the Contractor may request DEP to enter into such litigation to protect the interests of DEP.

(h) Copeland "Anti-Kickback" Act. Contractor or Subcontractor shall comply with the Copeland "Anti-Kickback" Act (18 USC 874) as supplemented in U.S. Department of Labor regulations (29 CFR Part 3). Said Act provides that each Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public works, to give up any part of the compensation to which it is otherwise entitled. The Contractor shall report all suspected or reported violations to DEP.

(i) Clean Air & Water Acts. Should the amount of this contract exceed one-hundred thousand dollars ($100,000.00), compliance will be required with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 USC 1857[h]), Section 508 of the Clean Water Act (33 USC 1368), Presidential Executive Order #11738, and Federal Environmental Protection Agency regulations (40 CFR Part 15), which prohibit the use under non-exempt Federal contracts, grants or loans of facilities included on the EPA List of Violating Facilities. Contractor shall report violations to DEP and to the U.S. EPA Assistant Administrator for Enforcement (EN-329).

(j) Energy Policy & Conservation Act. The Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the State energy conservation plan issued in compliance with the Energy Policy and Conservation Act, Public Law 94-163.

(k) Access to Records. DEP, the U.S. Department of Interior's Office of Surface Mining Reclamation & Enforcement, and the U.S.Comptroller General or their duly authorized representatives shall have access to any books, papers, and records of the Contractor which are directly pertinent to that specific contract, for the purpose of making audits, examinations, excerpts, and transcriptions.

(l) Maintenance of Records. The Contractor shall maintain all required records for three (3) years after DEP processes final payments and all other pending matters are closed.

(m) Termination of Contract by DEP. This contract may be cancelled in whole or in part in writing by the Director of Purchasing, without prejudice to any other right or remedy it may have, provided that the contractor is given not less than thirty (30) calendar days written notice, (delivered by certified mail, return receipt requested) of intent to terminate.

(n) Legal Remedies. Unless otherwise provided by law or elsewhere in this contract, all claims, counter-claims, disputes and other matters in question between DEP and the Contractor arising out of, or relating to, this contract or the breach of it will be decided by arbitration if the parties mutually agree, or in a court of competent jurisdiction within the State of West Virginia.

11.3 Wages.

Attention is called to the prevailing rates of wages to be paid for labor on public improvements in Nicholas County, West Virginia, as determined by the West Virginia Department of Labor. A copy of wage rates shall be posted in a conspicuous location on the job site. It is the responsibility of the Contractor to pay the wage rate in effect when the project was bid. The Contractor is to maintain and have available for inspection by DEP, upon request, certified copies of its payrolls.

The contractor/subcontractors shall pay the higher of the U.S. Department of Labor Davis-Bacon Act or the WV Prevailing wage rate as established for various county, pursuant to West Virginia Code 21-5A, Et, Seq. and 42CSR7 Rules & Regulations for the WV Prevailing Wage Act. For prevailing wage rates, please refer to http://www.sos.wv.gov

12.0 SUBCONTRACTORS

12.1 Unless otherwise required by the contract documents, the Contractor, as soon as practicable after award of the contract, shall furnish DEP in writing the names of subcontractors (including those who are to furnish materials or equipment fabricated to special design) proposed for performing portions of the work.

12.2 DEP reserves the right to disapprove any proposed subcontractor whose record of performance does not establish its experience, competence, and financial ability to perform the work for which it is proposed. Nothing contained in the contract documents shall create any contractual relation between any subcontractor and DEP.

13.0 TIME

13.1 The date of commencement of work is the date established in a written "Notice to Proceed" issued by DEP to the Contractor. The date of completion shall be the date that DEP finds the work acceptable under the contract documents and the contract fully performed.

13.2 Delays & Extensions of Time.

(d) It is agreed that if the Contractor should be unavoidably delayed in fulfilling its obligations under this contract by acts of Providence or general strikes, or by Court injunctions, or by stopping of the work by DEP because of any Contractor toward final completion of the work hereunder, DEP may require the Contractor to prepare an itemized estimate of the amount of work performed, and material and equipment stored under the contract since the date of the last preceding estimate and Application for Payment. DEP may request that the Contractor submit such estimate along with supporting documentation in the form of certified payrolls, material invoices, weight slips, and Applications for Payment. Contractor is to maintain and have available such records for inspection by DEP upon request.

13.3 Progress Schedule.

The Contractor, immediately after being awarded the contract, shall prepare and submit, for DEP's information, an estimated progress schedule for the work. Such progress schedule shall be related to the entire project to the extent required by the contract documents, and shall provide for expeditious and practicable execution dates of the various stages of construction and may be revised as required by conditions of work, subject to DEP's approval.

14.0 PAYMENTS & COMPLETION

14.1 Contract Sum.

The contract sum as stated in the Contractor's executed Contract Acceptance Form, including any authorized adjustment(s) thereto, is the total amount payable by DEP to the Contractor for the performance of the work under the contract documents.

14.2 Schedule of Values.

Before submitting its first Application for Payment, the Contractor shall submit to DEP a schedule of values allocated to the various portions of the work, prepared in such form and supported by such data to substantiate its accuracy, as DEP may require. This schedule shall be used only as a basis for the Contractor's Applications for Payment.

14.3 Progress Estimates, Applications for Payment.

(d) On the fifteenth (15th) and thirtieth (30th) day of each month during which progress has been made on the work under the contract by the Contractor toward final completion of the work hereunder, DEP may require the Contractor to prepare an itemized estimate of the amount of work performed since the date of the last preceding estimate and Application for Payment. DEP may request that the Contractor submit such estimate along with supporting documentation in the form of certified payrolls (not to include social security numbers), material invoices, weight slips, and Applications for Payment. Contractor is to maintain and have available such records for inspection by DEP upon request.

(b) Upon approval by DEP of the Application and Certificate for Payment, DEP shall, as soon thereafter as practicable, process for the Contractor as a progress payment a sum equal to the contract value of the work performed since the last preceding estimate and Application for Payment, in accordance with Paragraphs 14.4 and 14.5 of this Section, less the aggregate of previous payments.

© No Certificate for a progress payment, nor any progress payment, shall constitute acceptance or be deemed or construed as acceptance of any part of the work not in accordance with the contract documents.

(d) The Contractor warrants and guarantees that title to all work, materials, and equipment covered by an Application for Payment, whether incorporated in the project or not, will pass to DEP upon the receipt of such payment by the Contractor, free and clear of all liens, claims, security interests or encumbrances, and that no work, materials, or equipment covered by an Application for Payment will have been acquired by the Contractor or by any other person performing the work at the site or furnishing materials and equipment for the project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the Contractor or otherwise imposed by the Contractor or such other person.

14.4 Payments Withheld.

The Regional Engineer or his representive may decline to approve an estimate or Application for Payment, to the extent necessary to protect DEP from loss because of:

(b) Unsatisfactory, unrepresentative, and unverified amounts and items included in progress estimates of Paragraph 14.3(a) above.

(ii) Unfulfilled provisions of Paragraphs 14.3(d) above.

(iii) Defective work not remedied.

(iv) Unsatisfactory performance of the work by the Contractor.

(v) Failure of the Contractor to make payments properly to subcontractors, or for labor, materials, or equipment.

(vi) Reasonable doubt that the remaining work can be completed for the unpaid balance of the contract sum.

(vii) Reasonable indication that the work will not be completed within the contract time for completion.

(viii) Third party claims filed, or reasonable evidence indicating probable filing of such claims.

(ix) Damage to another contractor.

When the above grounds under 14.4 (i)-(ix) are removed, payment shall be approved for the amounts that were withheld because of them.

14.5 Final Completion & Final Payment.

(b) Upon notice from the Contractor that the work is ready for final inspection, the Construction Supervisor will promptly make such inspection. If the Construction Supervisor upon his/her inspection finds the work acceptable under the contract documents and the contract fully performed, the Contractor shall submit a Final Estimate Application and Certificate for Payment to DEP for processing. Also, final quantity calculations shall be submitted to DEP by the Contractor prior to final inspection conference.

(b) Final payment to the Contractor will be processed by DEP upon fulfillment of the provisions of the contract documents and the conditions thereof.

(c) **The processing of final payment and the processing of payment of retained percentage shall constitute a waiver of all claims by DEP except those arising from:**

(i) **Unsettled liens.**

(ii) **Faulty or defective work appearing after final completion.**

(iii) **Failure of the work to comply with requirements of the contract documents.**

(iv) **Terms of any special warranties required by the contract documents.**

(v) **Affidavate of Payment**

(d) **The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final Application for Payment. No payment, however, final or otherwise, shall operate to release the Contractor or its sureties from any obligation under the contract documents, or the Performance Bond, and the Labor and Material Payment Bond. (See 15.1 below.)**

14.6 Application for Payment Forms.

Bound herewith on the preceeding pages are sample Application and Certificate for Payment forms which the Contractor shall use in the submittal of progress estimate Applications for Payment to DEP.

DEPARTMENT OF ENVIRONMENTAL PROTECTION / OFFICE OF ABANDONED MINE LANDS & RECLAMATION

AML-7
Revised 5/09

APPLICATION AND CERTIFICATE FOR PAYMENT

Page 1 of _____ pages

Project Name: _____

Contractor: _____

Address: _____

ATTN (AML&R Inspector): _____

Application No: _____

Application Date: _____

Performance Period From: _____ To: _____

CHANGE ORDER SUMMARY

Change Order Number	Approved (date)	Additions $+	Deductions $-

Application is made for payment, as shown below, in connection with contract. Continuation Sheet is attached. The present status of the account for this contract is as follows:

ORIGINAL CONTRACT SUM $_____

Net Change by Change Orders $_____

CONTRACT SUM TO DATE $_____

TOTAL COMPLETED & STORED TO DATE $_____
(Column "G" on Continuation Sheet)

LESS PREVIOUS CERTIFICATES FOR PAYMENT $_____

CURRENT PAYMENT DUE $_____

Items listed hereon conform to specification, were received & are approved for payment.

Date: Signed: _____, Inspector

PO#:

P#:

Office/App

FEIN/SS#: _____

Date

FIMS Vendor #_____

FUND	FY	ORG	ACT	OBJ CODE	GRANT #	PROJECT #
8708	20		130	830		

% COMPLETE: Total Completed & Stored to Date / Contract Sum to Date ---------- x 100 = _____

Contractor: _____
Original Signature (Blue Ink)

DEPARTMENT OF ENVIRONMENTAL PROTECTION / OFFICE ABANDONED MINE LANDS & RECLAMATION

AML-7A
Revised 6/00

CONTINUATION SHEET OF APPLICATION AND CERTIFICATE FOR PAYMENT

Project Name:____________________ Application No:__________

Page ___ of ___ pages

BID SCHEDULE PER CONTRACT				UNITS THIS APPLICATION	TOTAL COMPLETED AND STORED TO DATE	
ITEM # **A**	DESCRIPTION **B**	UNITS **C**	UNIT BID PRICE **D**	UNITS **E**	UNITS **F**	COST **G=(DxF)**
					SUBTOTAL OR TOTAL	

15.0 SURETY BONDS

15.1 The Contractor shall provide and deliver to DEP's Buyer at the Purchasing Division of the Department of Administration at the time of execution of the contract, and prior to the performance of the work, satisfactory surety bonds in an amount of not less than one hundred percent (100%) of the contract sum which shall include a Performance Bond and Labor and Material Payment. An increase in the Surety Bond will be required to equal any increases to the contract amount created by a change order.

Bond, with sureties acceptable to DEP's Buyer, for the faithful fulfillment of the contract within the time specified. Said bonds shall also save and hold harmless DEP from all liens and claims arising out of the work. The Contractor shall pay for the bonds.

15.2 In the event that the surety on any contract or payment bond given by the Contractor becomes insolvent, or is placed in the hands of a receiver, or has its right to do business in this State revoked as provided by law, the Cabinet Secretary may at his/her election, withhold payment or any estimate until the Contractor shall give a good and sufficient bond in lieu of the bond so executed by such surety.

15.3 Attorneys-in-Fact who execute surety bonds issued pursuant to this Section must provide with each such bond a certified and properly executed Power of Attorney.

15.4 All performance bonds shall be in effect throughout the one-year guarantee period set out in Section 5.0. Bonds will be released upon completion of the guarantee period and acceptance of the project by DEP.

16.0 CHANGES IN THE WORK

16.1 Change Orders

(a) DEP, without invalidating the contract, may order or the Contractor may request changes in the work within the general scope of the contract consisting of additions, deletions, or other revisions, the contract sum and the contract time being adjusted accordingly. All such changes in the work shall be authorized by change order, and shall be executed under the applicable conditions of the contract documents.

(b) A change order is a written order to the Contractor, properly executed as to form, issued after the execution of the contract, authorizing a change in the work or an adjustment in the contract sum or contract time. The contract sum or contract time may be changed only by a change order. A change order issued to the Contractor indicates its agreement therewith, including the adjustment in the contract sum or contract time set forth therein.

(c) The cost or credit to DEP resulting from a change in the work shall be determined in one or both of the following ways:

(i) By mutual acceptance of a lump sum properly itemized.

(ii) By unit prices stated in the contract documents or subsequently agreed upon.

(d) If none of the methods set forth in 16.1(c) above is agreed upon, or the work to be performed is agreed by DEP and Contractor to be of such nature that it cannot be estimated in advance with sufficient exactness for mutual agreement, then DEP may direct the Contractor to perform the work by change order in accordance with the following provisions, and the Contractor shall promptly proceed with the work:

(i) The work shall then be performed for an amount equal to the actual and necessary net cost to the Contractor for material and labor cost necessarily used therein, including all taxes and delivery costs for materials, all required extra costs on labor, plus cost for superintendents, power, use of tools, equipment, plant, plus the Contractor's normal charge under the contract for overhead and profit. The Contractor shall keep and present to DEP for inclusion in the change order complete itemized accounting for all materials, complete identified time and payment records for all employees, and workmen actually performing the work covered by the change order, the cost accounting of work performed by subcontractors for work covered by the change order. DEP reserves the right to require verifications of all costs covered under the change order.

(ii) The amount of credit to be allowed by the Contractor to DEP for any deletion or change which results in a net decrease in the contract sum will be the actual net cost. When both additions and credits covering related work or substitutions are involved in one change, the allowance for overhead and profit shall be figured only on the basis of the increase, if any, with respect to that change.

16.2 The Chief is the only individual who can execute a change order committing DEP to the expenditure of public funds. No person other than the Chief or his/her authorized representative can make any changes to the terms, conditions, contract clauses, or other stipulations of this contract.

The Contractor shall not accept any instructions issued by any person other than the Chief or his/her authorized representative regarding changes in the work under the contract which affect the contract sum and/or contract time. No information, other than that which may be contained in an authorized modification to this contract, duly issued by the Chief or his/her authorized representative, which may be received from any person employed by DEP or otherwise, shall be considered grounds for deviation from any stipulation of the contract.

16.3 Minor Changes in the Work.

Notwithstanding the requirements of Section 16.2 above, the Regional Engineer or his/her authorized representative shall have authority to order minor changes in the work not involving an adjustment in the contract sum or an extension of the contract time and not inconsistent with the intent of the contract documents. Such changes may be affected by field order or by other written order. Such changes shall be binding on DEP and the Contractor. The Contractor shall carry out such written orders promptly.

16.4 Omissions.

DEP may omit any item or items in the contract, provided that the notice of intent to omit such item or items is given to the Contractor before any material has been purchased or labor involved has been performed, and such omission shall not constitute grounds of any claim for damages or loss of anticipated profits. DEP may omit any item or items shown the estimate, at any time, by agreeing to compensate the Contractor for the reasonable expense already incurred and to take over at actual cost any unused material purchased in good faith for use for the item or items omitted.

17.0 UNCOVERING & CORRECTION OF WORK

17.1 Uncovering of Work.

(a) If any work should be covered contrary to the request of DEP, it must, if required by DEP, be uncovered for its observation and be replaced at the Contractor's expense.

(b) If any other work has been covered which DEP has not specifically requested to observe prior to being covered, DEP may request to see such work and it shall be uncovered by the Contractor. If such work is found to be in accordance with the contract documents, the cost of uncovering and replacement shall, by appropriate change order, be charged to DEP. If such work is found not to be in accordance with the contract documents, the Contractor shall pay such costs unless it is found that such condition was caused by a separate contractor employed by DEP and in that event DEP shall be responsible for the payment of such costs.

17.2 Correction of Work.

The Contractor shall promptly correct all work rejected by DEP as defective or as failing to conform to the contract documents whether observed before or after final completion and whether or not fabricated, installed or completed. The Contractor shall bear all cost of correcting such rejected work. All such defective or

non-conforming work shall be removed from the site if necessary, and the work shall be corrected to comply with the contract documents at no cost to DEP. If the Contractor fails to correct such defective or non-conforming work, DEP may correct it in accordance with Section 17.3 below or Section 11.2(m) of these General Conditions.

17.3 Acceptance of Non-Conforming Work.

If DEP prefers to accept non-conforming work, it may do so instead of requiring its removal and correction, in which case a change order will be issued to reflect an appropriate reduction in the contract sum, or, if the amount is determined after final payment, it shall be paid by the Contractor.

18.0 ASSIGNMENT OF CONTRACT

Contractor shall not assign or transfer this contract or sublet it as a whole without having first obtained the written consent of DEP to do so; and it is likewise agreed that the Contractor shall not assign legally or equitably any of the moneys payable to it under the contract, or its claim thereto, without having first obtained the written consent of DEP to do so.

OMB #1029-0119
Expiration Date: 1/31/16

AML CONTRACTOR INFORMATION FORM

You must complete this form for your AML contracting officer to request an eligibility evaluation from the Office of Surface Mining to determine if you are eligible to receive an AML contract. This requirement applies to contractors and their sub-contractors and is found under OSM's regulations at 30 CFR 874.16. When possible, please type your information onto this form to reduce errors on our end. NOTE: Signature and date this form is signed must be recent (within the last month) to be considered for a current bid

Part A: General Information

Business Name: _____ Tax Payer ID No.: _____
Address: _____
City: _____ State: _____ Zip Code: _____ Phone: _____
Fax No.: _____ E-mail address: _____

Part B: Legal Structure

( ) Corporation ( ) Sole Proprietorship ( ) Partnership ( ) LLC
( ) Other (please specify) _____

Part C: Certifying and updating information in the Applicant/Violator System (AVS). Select only one of the following options, follow the instructions for that option, and sign below.

I, _____*, have the express authority to certify that:*
(print name)

1. _____Information on the **attached** Entity Organizational Family Tree (OFT) from AVS is accurate, complete, and up-to-date. If you select this option, you **must** attach an Entity OFT from AVS to this form. Sign and date below and do not complete Part D.

2. _____Part of the information on the **attached** Entity OFT from AVS is missing or incorrect and must be updated. If you select this option, you **must** attach an Entity OFT from AVS to this form. Use Part D to provide the missing or corrected information. Sign and date below and complete Part D.

3. _____Our business currently is not listed in AVS. If you select this option, you must provide all information required in Part D. Sign and date below and complete Part D.

_____ _____ _____
Date Signature Title

IMPORTANT! In order to certify in Part C to the accuracy of existing information in AVS, you must obtain a copy of your business' Entity OFT. To obtain an Entity OFT, contact the AVS Office, toll-free, at 800-643-9748 or from the AVS website at https://avss.osmre.gov.

Part D.

Contractor's Business Name: _____

If the current Entity OFT information for your business is incomplete or incorrect in AVS, or if there is no information in AVS for your business, you must provide all of the following information as it applies to your business. Please make as many copies of this page as you require.

- Every officer (President, Vice President, Secretary, Treasurer, etc.);
- All Directors;
- All persons performing a function similar to a Director;
- Every person or business that owns 10% or more of the voting stock in your business;
- Every partner, if your business is a partnership;
- Every member and manager, if your business is a limited liability company; and
- Any other person(s) who has the ability to determine the manner in which the AML reclamation project is being conducted.

Name _____ Position/Title _____
Address _____ Telephone # _____
_____ % of Ownership _____
Begin Date: _____ Ending Date: _____

Name _____ Position/Title _____
Address _____ Telephone # _____
_____ % of Ownership _____
Begin Date: _____ Ending Date: _____

Name _____ Position/Title _____
Address _____ Telephone # _____
_____ % of Ownership _____
Begin Date: _____ Ending Date: _____

Name _____ Position/Title _____
Address _____ Telephone # _____
_____ % of Ownership _____
Begin Date: _____ Ending Date: _____

PAPERWORK REDUCTION STATEMENT

The Paperwork Reduction Act of 1995 (44 U.S.C. 3501) requires us to inform you that: Federal Agencies may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. This information is necessary for all successful bidders prior to the distribution of AML funds, and is required to obtain a benefit.

Public reporting burden for this form is estimated to range from 15 minutes to 1 hour, with an average of 22 minutes per response, including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. You may direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Office of Surface Mining Reclamation and Enforcement, Room 202 SIB, Constitution Ave., NW, Washington, D.C. 20240.

ARTICLE III - GENERAL REQUIREMENTS

ARTICLE III - GENERAL REQUIREMENTS

Sections Included:

ARTICLE III - GENERAL REQUIREMENTS

1.0 SUMMARY OF THE WORK

This Article briefly outlines and describes the work to be performed and is not intended to limit the faithful execution of the contract documents.

1.1 The scope of the work for this project, without attempting to restrict or limit the contractor's responsibility, consists of furnishing all plant, labor, materials, and equipment to construct abandoned mine drainage control structures described in the drawings and these specifications. The work shall include, but not be limited to, the following:

The project consists of regrading and extinguishment of coal refuse; clearing and grubbing at the site, removal of burning debris, trash, tree roots, and associated materials; construction and installation of support areas, and maintenance of access roads to the site; construction and installation of drainage control items; revegetation; and sediment control. The Contractor shall also be responsible for surveying, including establishing construction baseline, measuring and developing all completed quantities on the job, and for ordering, purchase and delivery of any and all materials required for construction or required for development of support areas. The Contractor shall perform all other operations as incidental to the program as specified herein.

ARTICLE III - GENERAL REQUIREMENTS

2.0 QUALITY STANDARDS, APPROVALS

2.1 Not withstanding reference in the specifications or on the drawings to any article, item, product, material, equipment, or system by name, brand, make, or manufacturer, such reference shall be intended and interpreted as establishing a standard of quality, and shall not be taken, regarded, or construed as limiting competition.

2.2 Any article, item, product, material, equipment, or system which will perform adequately and satisfactorily the duties imposed by the general design will be considered equally acceptable to that specified or referenced, providing the article, item, product, material, equipment, or system so proposed is equal in quality, substance, design, manufacture, function and performance as that specified or referenced, and adjudged and determined to be so in the opinion of the Construction Supervisor and is approved by him/her. The approval of the Regional Engineer is required before purchase and installation.

2.3 Approvals.

Where the term "of approved manufacture" appears in the specifications, or an "approved" or "approved as equal" article or item is referred to, it shall mean that the article, item, workmanship, or material must meet the approval of the Construction Supervisor.

3.0 SUPERINTENDENTS, COORDINATION

3.1 Superintendents.

The Contractor shall employ and keep a competent superintendent and assistants who shall be capable of effective communication as required on the job at all times and who shall give efficient supervision to the work, using his/her best skill and attention, and shall have knowledge and control of all trades. The superintendent shall be acceptable to the Construction Supervisor and shall not be changed without the Construction Supervisor's knowledge and consent. The Contractor also shall see that each respective sub-contractor provides a competent foreman for each trade.

3.2 Coordination.

The Contractor and each sub-contractor shall coordinate the work and operations and shall cooperate with and assist each other on the job for the successful execution of the work within trade jurisdictional rulings. Each shall study all drawings and specifications and shall perform all work which properly comes under jurisdiction of the trade he/she represents.

4.0 PROJECT MEETINGS AND CONFERENCES

4.1 The following meetings shall be scheduled and held prior to commencement of the project and during execution of the work. DEP will schedule such

meetings and advise all parties concerned by written notice of the date, time, and location of such meetings.

(a) **Pre-Bid Conference. Conference with Engineer, bidders and appropriate DEP personnel as necessary, and others directly concerned for explanation of bidding and contract documents, project site familiarization as required, and for answering questions pertinent to the project. Attendance by bidders is mandatory in order to be eligible to bid on the project.**

A date and time will be set for the on-site mandatory Prebid Conference. All interested parties are required to attend this meeting. Failure to attend the mandatory pre-bid shall result in disqualification of the bid. No one person may represent more than one bidder.

An attendance sheet will be made available for all potential bidders to complete. This will serve as the official document verifying attendance at the mandatory pre-bid. Failure to provide your company and representative name on the attendance sheet will result in disqualification of the bid. The State will not accept any other documentation to verify attendance. The bidder is responsible for ensuring they have completed the information required on the attendance sheet. The Purchasing Division and the state agency will not assume any responsibility for a bidder's failure to complete the pre-bid attendance sheet. In addition, we request that all potential bidders include their e-mail address and fax number.

All potential bidders are requested to arrive prior to the starting time for the pre-bid. Bidders who arrive after the pre-bid conference has ended will not be permitted to sign the attendance sheet or bid on the project work.

(b) **Pre-Construction Conference. Conference with Engineer, appropriate DEP personnel, Contractor, Sub-Contractors, and others directly concerned, after award of the contract and prior to commencement of construction, for discussion of the project, contract documents, scheduling, and for resolving questions concerning project execution and administration as required.**

(c) Project Meetings. Meetings shall be held at periodic intervals throughout the construction contract period for discussion of matters pertinent to the execution and administration of the project. The Regional Engineer, Construction Engineer, Construction Supervisor, Inspector, Contractor and/or its Superintendent, Subcontractors, Project Foremen, as required, and others directly concerned, as necessary, shall attend the meetings.

5.0 AUTHORITY & DUTIES OF INSPECTORS

5.1 The Inspector, as the Regional Engineer's authorized representative, is authorized to make minor field changes to the plans and specifications that do not involve an increase or decrease in the contract sum or an increase or decrease in the contract time. The Inspector shall be authorized to inspect all work done, all material furnished, payroll records of personnel, material invoices and relevant data and records of the work, and the preparation, fabrication, or manufacture of the materials to be used. The Inspector is not authorized to revoke, alter, or waive any requirements of the plans and specifications that result in an increase or decrease in the amount of compensation due the Contractor or an increase or decrease in the contract time. The Inspector is authorized to call to the attention of the Contractor any failure of the work or materials to conform to the plans and specifications. The Inspector shall have the authority to reject materials or suspend the work until any questions at issue can be referred to and decided by the Regional Engineer.

5.2 The Inspector shall in no case act as foreman or perform other duties for the Contractor, nor interfere with the management of the work by the Contractor. Any advice which the Inspector may give the Contractor shall in no way be construed as binding the Regional Engineer in any way, or releasing the Contractor from fulfilling all of the terms of the contract.

5.3 If a problem arises that that the contractor will not correct and the Contractor refuses to suspend operations on verbal order, the Inspector shall issue a written order giving the reason for ordering the work to stop. After placing the order in the hands of the person in charge, the Inspector shall immediately leave the job, and the Contractor shall cease all operations.

6.0 SHOP DRAWINGS, PRODUCT DATA, SAMPLES

6.1 Definitions.

(a) "Shop drawings" are drawings, diagrams, schedules, and other data, prepared for the project by the Contractor, Sub-contractor, manufacturer, or supplier, to illustrate and/or install some portion of the work.

(b) "Product data" are illustrative data, brochures, schedules, catalog cuts, charts, informative material and specifications to illustrate materials, articles, items, or products for use in some portion of the work.

(c) "Samples" are physical examples which show and illustrate materials, finishes, equipment or workmanship of products proposed for use in some portion of the work.

6.2 Submittals.

(a) The Contractor shall review, approve, and submit to the Reginal Engineer with reasonable promptness, and in such sequence to cause no delay in the work, all shop drawings, product data, and samples required by the contract documents.

(b) No shop drawings, product data, or samples shall be submitted to the Regional Engineer except by the Contractor, who shall, before submission, verify all materials, check all details, measurements, verify all field measurements and field construction conditions, and other job coordination requirements. Upon review, check, and approval by the Contractor, the Contractor shall place its stamp of approval thereon before submitting to the Regional Engineer.

(c) The Contractor shall not be relieved of responsibility for any deviation from the requirements of the contract documents by the Regional Engineer's approval of shop drawings, product data, or samples, nor shall it be relieved of responsibility for errors or omissions therein.

(d) Shop drawings, product data, and samples shall be submitted in sufficient number for all approvals, with a minimum of two (2) copies or samples being retained by the Regional Engineer, and a number of copies and samples being retained by the Contractor as required for the execution of its work.

(e) No portion of the work requiring submission of a shop drawing, product data, or sample shall be commenced until the submittal has been approved by the Regional Engineer. All such portions of the work shall be in accordance with approved submittals.

(f) Shop drawings, product data, and samples shall be submitted for work, systems, articles, items, and equipment as specified. Other additional shop drawings, product data, and samples as may be requested for the work by the Regional Engineer shall be submitted to him/her for approval.

7.0 MEASUREMENTS, MANUFACTURER'S DIRECTIONS

7.1 Measurements.

Before ordering any material, product, article, or doing any work, the Contractor shall take all necessary measurements at the project and shall be responsible for the correctness of same. No extra charge or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the drawings. The Regional Engineer shall be notified of any differences found and work shall not proceed thereon until the Regional Engineer has rendered a decision.

7.2 Manufacturers' Directions.

All manufactured articles, items, products, material, and equipment shall be applied, installed, connected, erected, used, cleaned, conditioned and put into operation or use as directed by the manufacturer's printed instructions, unless specified otherwise herein. The Contractor shall be responsible for obtaining all such instructions.

7.3 Measurement of Quantities.

The Contractor shall be responsible for providing all necessary volumetric and weight measurement equipment necessary to measure quantities accurately for payment of contract unit items, and said equipment shall be subject to the Regional Engineer's approval. Volume and weight measurements shall be submitted to the Regional Engineer for approval.

8.0 LINES, LEVELS, GRADES, LAYOUT

8.1 Lines, Levels, Grades.

(a) Control points have been established in the field and are shown on the plans whereby the Contractor can properly control the work contracted for under these specifications. Such stakes and markings which the Engineer may have set for either his/her own guidance shall be scrupulously preserved by the Contractor, or its employees.

If any action by the Contractor should result in the destruction of such stakes or markings, an amount equal to the cost of replacing same may be deducted from subsequent estimates due the Contractor at the discretion of the Construction Supervisor. The Contractor shall satisfy itself as to the accuracy of all measurements before constructing any permanent structure and shall not take advantage of any errors which may have been made in laying out the work. Should any discrepancies become evident between the plans and the Contractor's field survey, the Contractor shall immediately notify the Inspector. If these discrepancies will create a change in any item in the Contractor's accepted final bid, the DEP reserves the right to re-design or negotiate. Should the Contractor fail to make notification of these discrepancies, DEP will not be held liable for any changes in the original quantities.

(b) The Contractor shall make all field measurements necessary for its work and shall be responsible for the accuracy of all dimensions, lines, levels, and grades. If a survey is required, it shall be performed at the expense of the Contractor. All survey work shall be performed by a West Virginia Licensed Land Surveyor who shall certify as to the accuracy of the survey to DEP.

9.0 DOCUMENTS, SHOP DRAWINGS, ETC., AT THE SITE

9.1 The Contractor shall maintain at the project site for DEP one (1) record copy of all drawings, specifications, addenda, change orders, and other modifications, in good order, marked currently to record all changes made during construction, and all approved shop drawings, product data, and samples, properly filed and referenced. All such documents and samples shall be delivered to the Construction Supervisor upon completion of the work.

9.2 The Contractor shall furnish the Inspector in writing two (2) sets of daily reports showing all personnel (by classification), equipment, and tools engaged in the work, for use in accounting records.

9.3 The Contractor shall be responsible for submitting a daily activity summary which shall be used to report progress of the various construction activities performed at the subject site. The summary report shall be submitted to the Inspector on a weekly basis on the prescribed forms. Processing invoices may be delayed if summary reports are not submitted.

10.0 STORAGE OF MATERIALS

10.1 The Contractor, under and with the approval, supervision, and direction of DEP, shall assume full charge of the area or areas of the project premises allocated for the storage of materials and equipment as required, allocating the necessary site space to any sub-contractor(s) for storage sheds and space for the storage of materials and equipment. Such arrangement of storage facilities

shall be orderly, convenient, shall not obstruct movement on the site, the work of others, or construction operations. All storage sheds, enclosures, and facilities shall fully protect the stored materials. The Contractor shall arrange with appropriate landowner(s) for any storage areas located outside of the project limits and such storage areas shall also be subject to DEP's approval.

10.2 All materials subject to damage by moisture, water, or weather shall be fully protected. All flammable, toxic, and explosive materials shall be safely stored in conformity with applicable safety requirements of State and Federal regulations and safety standards of the National Fire Protection Association.

11.0 PROTECTION OF WORK; DAMAGES

11.1 Protection and Replacement of Work.

(a) The Contractor shall protect its work from damage of any kind until completion of construction. Each contractor or sub-contractor shall adequately protect all preceding work from damage caused by it or its work. Should any part of the construction be subject to freezing or exposure to the elements, the same shall be fully protected to prevent damage.

(b) The Contractor and each sub-contractor shall provide protection against weather, frost, freezing, storms, and heat, to maintain all work, materials, installations, and equipment safe from injury and damage. The Contractor shall provide temporary covering and closures in the construction as required to protect it from damage by weather, until permanent construction provides such protection.

(c) Damaged or defective work must be replaced; all other work injured or damaged in the replacing of such work or in any way incidental thereto must be brought back to its original condition or replaced by the Contractor performing the work, without additional cost to DEP.

11.2 Damages to Existing Work.

All masonry damage, glass breakage, and other damage caused to existing buildings and appurtenances by the Contractor or by other contractors in the performance of work shall be properly replaced or repaired at the option of DEP, without additional cost to DEP.

12.0 TEMPORARY FACILITIES

12.1 Utilities

(a) General. All concerned with providing temporary utilities for use on the project are advised to determine locations of sources of supply and the conditions under which services can be brought to points of use on the site.

(b) Drinking Water. The Contractor shall arrange for drinking water and containers to be provided on the site.

(c) Utility Connections. The Contractor is to furnish power, gas, compressed air and any other utilities required for its own use during construction. The Contractor shall remove all temporary wiring, switches, lights, piping and connections to service facilities used during construction. Such connections shall not be made without approval of the Inspector.

(d) Temporary Supports. The Contractor shall provide such temporary supports as may be required during construction, including those necessary to ensure the stability of the proposed excavation.

(e) Equipment. The Contractor shall furnish all special apparatuses, welding machines, air compressors, hoisting equipment, tools, implements, cartage, scaffolding, ladders, planks, acetylene gas, oxygen gas, expendable materials, temporary light and heat, construction materials, shims and all other materials that may be required for the proper execution of the work.

(f) Temporary Buildings. The Contractor will furnish, place, and equip, at its own expense, and as it deems necessary, any portable construction building(s) such as a trailer, storage sheds or chemical sanitary facilities. These portable facilities must be within the designated project limits; otherwise, the Contractor is solely responsible for making necessary arrangements with the proper landowner when the buildings are set up outside of the project limits. The type and number of buildings are subject to the approval of the Inspector. All written instructions, orders, and other communication delivered to the temporary construction office set up on the site shall be considered as having been delivered to the Contractor itself. The Contractor shall provide and pay for its own fire protection, watchman, temporary utility hookups, etc. The Contractor will promptly remove from the project any office facilities, equipment or materials when so instructed by the Inspector.

(g) Sanitation Facilities. The Contractor shall provide and pay for adequate temporary toilet facilities for personnel during the project construction period. Toilets shall be of types approved by DEP and the State Division of Health, and situated only in approved locations. The Contractor shall be responsible for operation and sanitary maintenance of the temporary toilets and shall have them removed upon completion of construction.

ARTICLE III - GENERAL REQUIREMENTS

13.0 CONSTRUCTION SIGN

13.1 Work Required.

The work to be performed under this Section consists of providing all labor, material and equipment necessary to install a project sign as indicated on the detail included herein and as specified herein.

13.2 Materials.

(a) Sign face shall be 3/4" Marine Exterior plywood or aluminumor composite material. Posts and cross-brace shall be No. 2 Grade Pine or Fir, kiln dried and pressure treated.

(b) Hardware:

(1) All hardware shall be manufactured from good, commercial-quality material and meet all applicable ASTM standards.

(2) Spikes and nails shall be common wire-type and shall meet AISI steel specifications 1010 or 1020.

(3) All hardware shall be hot-dip galvanized in accordance with ASTM A-153.

13.3 Execution.

(a) Project Sign. The sign board shall be cut to the dimensions shown on the detail herein. The sign shall painted with one (1) coat of primer and two (2) coats of white enamel. All exterior cut edges shall be smooth sanded prior to painting. All edges shall be double primed. The letters, border and strips shall be painted as shown on the detail drawing. Posts and cross-brace shall be painted with two (2) finished coats of brown enamel.

The Contractor shall bolt the sign to posts and provide required cross-bracing. The posts and sign shall be erected and posts set in gravel base, as shown on the drawings. One (1) sign is required and is to be located at the discretion of the Inspector.

(b) Payment. Payment for the work which shall include installation of the project sign shall be part of the lump-sum bid for "Mobilization".

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Office of Abandoned Mine Lands & Reclamation

Earl Ray Tomblin
Governor

dep
Randy C. Huffman
Cabinet Secretary

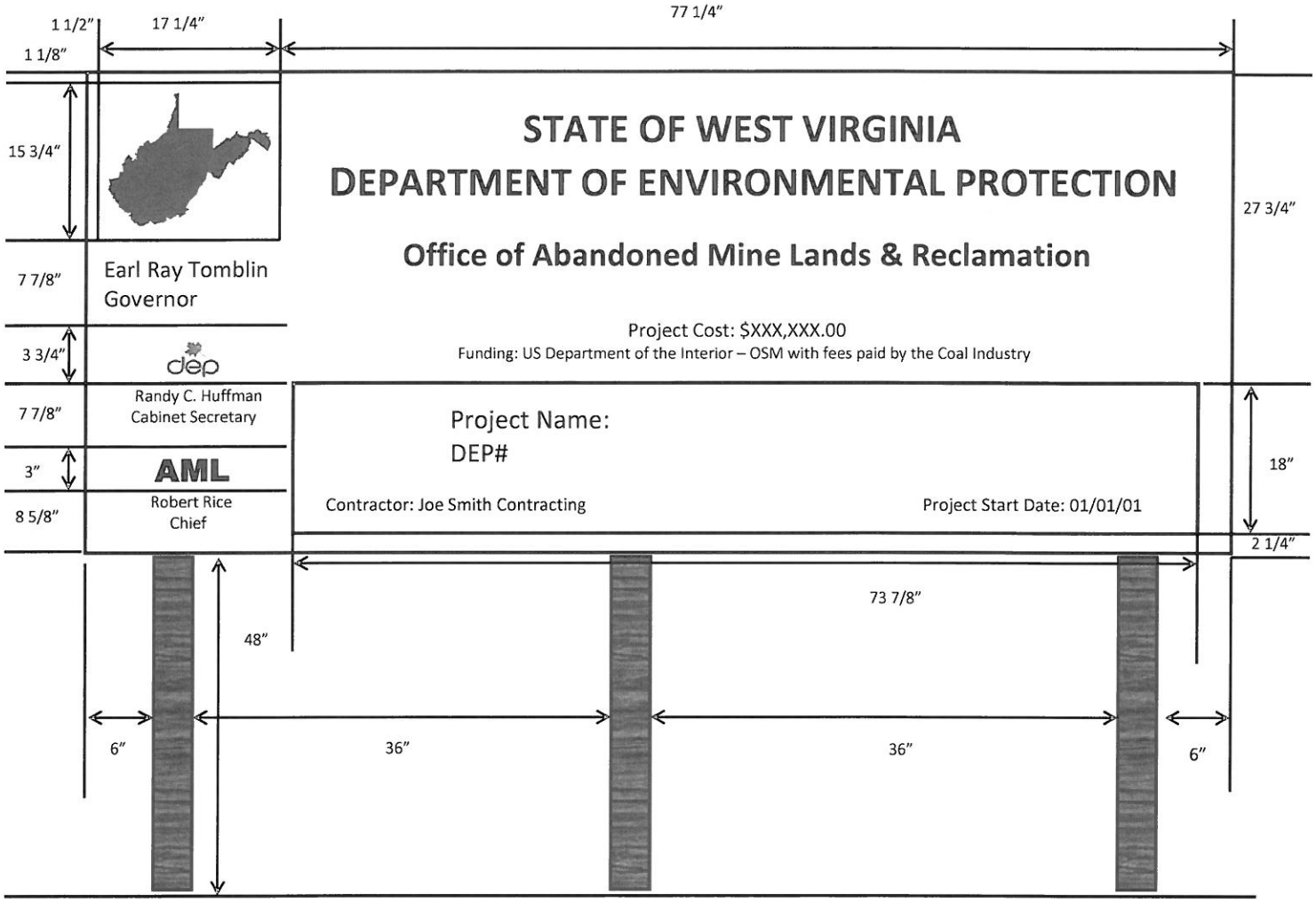
AML
Robert Rice
Chief

Project Cost: $XXX,XXX.00
Funding: US Department of the Interior – OSM with fees paid by the Coal Industry

Project Name:
DEP#

Contractor: Joe Smith Contracting

Project Start Date: 01/01/01


1 1/2"
1 1/8"
17 1/4"
77 1/4"
15 3/4"
27 3/4"
7 7/8"
3 3/4"
7 7/8"
3"
8 5/8"
18"
2 1/4"
48"
73 7/8"
6"
36"
36"
6"
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Office of Abandoned Mine Lands & Reclamation
Earl Ray Tomblin
Governor
dep
Randy C. Huffman
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Project Cost: $XXX,XXX.00
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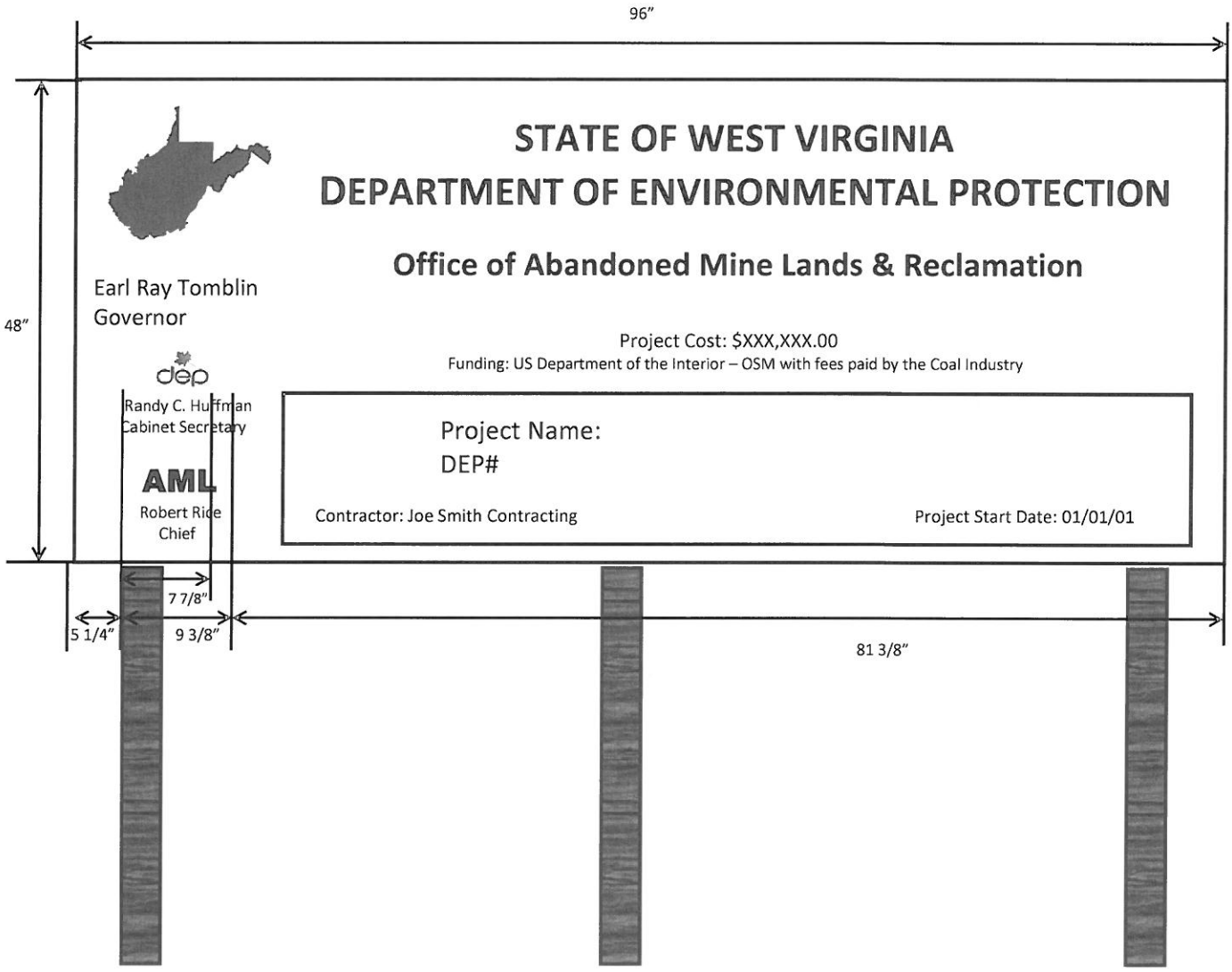

96"
48"
STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Office of Abandoned Mine Lands & Reclamation
Earl Ray Tomblin
Governor
Project Cost: $XXX,XXX.00
Funding: US Department of the Interior – OSM with fees paid by the Coal Industry
dep
Randy C. Huffman
Cabinet Secretary
AML
Robert Rice
Chief
Project Name:
DEP#
Contractor: Joe Smith Contracting
Project Start Date: 01/01/01
7 7/8"
5 1/4"
9 3/8"
81 3/8"

17 ½"

1 ¼ "
¾"
1 ¼"

Earl Ray Tomblin
Governor

9 ½ "

dep

1"
¾"
1"

Randy C. Huffman
Cabinet Secretary

8"

AML

1"
¾"
1"

Robert Rice
Chief

3 ¾ "

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Office of Abandoned Mine Lands & Reclamation

Project Cost: $XXX,XXX.00

Funding: US Department of the Interior – OSM with fees paid by the Coal Industry

Project Name:

DEP#

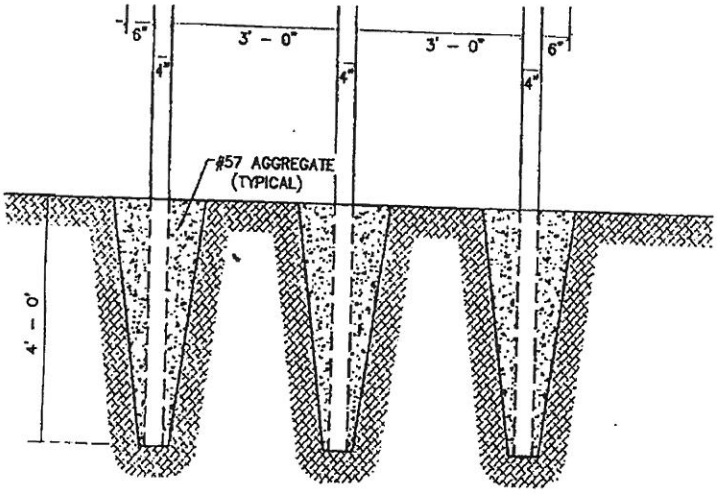
Contractor: Joe Smith Contracting

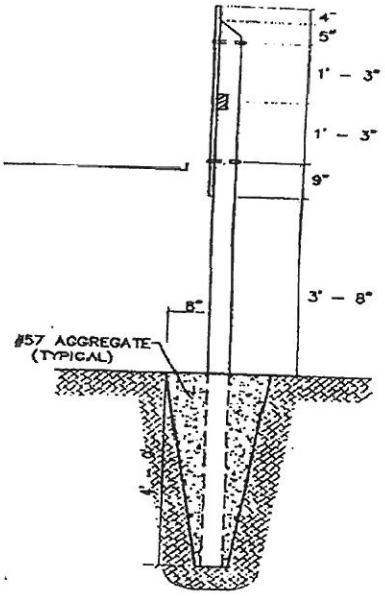
Project Start Date: 01/01/01

6"
2 ¼"
1 ½ "
2 ¼ "
3 ¾"
2 ¼ "
1 ½"
2"
3 ¾"
1 ½"
4 7/8"
2¼"
1 ½"
2 ¼"
4 7/8"
1 ½"
3 ¾"

Notes:

1. Sign board to be ¾" by 4'X 8' marine plywood.
2. Sign board color is to be white and letter colors are to be dark green and sized as shown on the detail.
3. 2"X 4" treated cross brace let into posts.
4. Mount sign to posts using 3/8"X 5" galvanized carriage bolt.
5. Posts are to be treated 4"X 4"X 12' and panted brown.
6. Location determined by WVDEP.





14.0 CLEANING & FINAL CLEAN-UP

14.1 Housekeeping - Periodic Cleaning.

The Contractor shall at all times keep the construction site free of accumulations of waste materials and rubbish caused by its operations. Periodically during the progress of the work, and also when directed to do so by DEP, the Contractor shall remove, or cause to be removed by sub-contractors responsible, accumulated waste materials, rubbish, and debris, and leave the construction area in good order.

14.2 Final Clean-Up.

The Contractor at all times shall dispose of all debris and waste resulting from work at the Contractor's dump site. The Contractor shall not put or spill any materials into any drainage system which would pollute area streams or waterways. The Contractor shall be liable for any stream pollution caused directly or indirectly by its own employees or those of it sub-contractors.

14.3 Final.

Should disputes arise between Contractor and separate contractors, or sub-contractors as to responsibilities for cleaning-up, and refusals to do so result therefrom, DEP may hold final payment until the cleanup work is completed.

15.0 TESTING.

15.1 When Testing Required.

Testing shall be performed as required by the specifications or ordered by the Regional Engineer. The Regional Engineer will determine the need, location, extent, and time of any testing herein specified, or in addition to that which is herein specified.

15.2 Payment for Testing.

The Contractor shall select an independent testing laboratory or utilize a laboratory run by the Contractor, to perform all testing for compaction, concrete, and soils as specified herein. All laboratory reports must be signed by a registered civil professional engineer. The Contractor shall be responsible for testing payments as an incidental to the various items of the bid schedule. If the Contractor allows work to proceed beyond a testing point resulting in the disassembly of structures or the uncovering of work for testing, payment for such will be the responsibility of the Contractor at no extra cost to DEP.

16.0 PROJECT COMPLETION - CERTIFICATES

16.1 **All certificates of testing, quality, compliance, and performance, as required, requested, and/or specified, shall be delivered to DEP upon delivery or completion of the work covered by the certificates.**

16.2 **All certificates of approval, compliance, and completion as required by codes, inspection and regulatory agencies, and local, State and Federal governmental authorities, shall be delivered to DEP upon completion of the work and inspections covered by such certificates.**

16.3 **The contractor shall submit to the WVDEP as built drawings certified by a Licensed Land Surveyor identifying all changes occurring on the project. The drawings shall be of professional quality. Unsuitable drawings will be returned for revisions. These drawings shall be approved by WVDEP prior to scheduling a Final Inspection.**

DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS & RECLAMATION

Report for Week Ending:_____ Project Name:_____

By:_____ Location:_____

Title:_____ Contractor:_____

DATE	**Daily Activity Summary**
Sunday	**NO WORK**
Monday	Weather:_____*F Conditions:_____
Tuesday	Weather:_____*F Conditions:_____
Wednesday	Weather:_____*F Conditions:_____
Thursday	Weather:_____*F Conditions:_____
Friday	Weather:_____*F Conditions:_____
Saturday	Weather:_____*F Conditions:_____

DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF ABANDONED MINE LANDS & RECLAMATION

WEEKLY QUANTITY SUMMARY

REPORT BY:_____ FOR WEEK ENDING:_____

PAY ITEM	UNITS	QUANTITY PERFORMED

ATTACH ANY SHEETS APPLICABLE TO THIS WEEKS WORK AND CHECK APPROPRIATE BOX.

Change Orders	☐
Field Changes	☐
Test Results	☐
Explanation of Work Stoppages Not Due to Weather	☐
Other (Explain)	☐

OFFICE OF ABANDONED MINE LANDS & RECLAMATION
USE ONLY

Initials

Project Superintendent: _____

Construction Inspector: _____

Date: _____/_____/_____

ARTICLE IV – SPECIAL CONDITIONS

ARTICLE IV - SPECIAL CONDITIONS

Sections Included:

ARTICLE IV - SPECIAL CONDITIONS

1.0 USE OF MINORITY, WOMEN'S, & SMALL BUSINESS ENTERPRISES

1.1 Should the Contractor intend to sublet a portion of the work on this project, it shall seek out and consider minority, women's, and small business enterprises as potential sub-contractors. The Contractor shall contact minority, women's, and small businesses to solicit their interest, capability, and prices, and shall retain proper documentation to substantiate such contacts.

1.2 The Contractor will sign and provide the enclosed Minority, Women's and Small Business Affirmative Action Certification to DEP along with the name(s) of any subcontractor(s) it submits for approval.

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
CONSTRUCTION CONTRACTOR'S
MINORITY, WOMEN'S AND SMALL BUSINESS
AFFIRMATIVE ACTION CERTIFICATION

We, _____, the undersigned, Construction Contractor on the Abandoned Mine Lands & Reclamation construction contract herein, intending to sub-contract a part of our contract work under Requisition No. _____, hereby certify as follows:

1) **We will include qualified small, minority and women's businesses on solicitation lists;**

2) **We will assure that small, minority and women's businesses are solicited whenever they are potential sources;**

3) **We will, when economically feasible, divide total requirements into smaller tasks or quantities so as to permit maximum small, minority and women's business participation.**

4) **Where our requirements permit, we will establish delivery schedules which will encourage participation by small, minority and women's businesses.**

5) **We will utilize the services and assistance of the Small Business Administration, the Office of Minority Business Enterprise of the Department of Commerce and the Community Services Administration as required.**

   We understand that we may obtain the information required under the foregoing provisions from the Governor's Office of Community & Industrial Development's Small Business Development Center, 1115 Virginia Street, East, Charleston, West Virginia 25301, Phone 304/348-2960.

6) **We will submit this certification to the Construction Supervisor when we submit proposed subcontractors for approval.**

7) **We agree that all documentation relative to affirmative action taken by us to seek out and consider the use of minority, women's and small business enterprises as sub-contractors shall be made available for inspection by representatives of the West Virginia Department of Environmental Protection and the U.S. Office of Surface Mining Reclamation and Enforcement;**

8) **This certification is an integral part of our proposal for the construction contract.**

Signed this _____ day of _____, 20___ .

_____
Signature of Authorized Representative

_____
Title

ARTICLE IV - SPECIAL CONDITIONS

2.0 EROSION & SEDIMENT CONTROL

The manual entitled "West Virginia Department of Enviromental Sediment Contol Design Manual BMP", 2006, is incorporated herein by reference as a guide for erosion and sediment control, except that where any provision of said manual is in conflict with any special erosion and sediment control provision set out and contained in this specification book and/or in the plans for this project, the plans and/or specification book shall prevail and be followed.

DISCLOSURE OF LOBBYING ACTIVITIES

Approved by OMB
0348-0046

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

1. Type of Federal Action:	2. Status of Federal Action:	3. Report Type:
☐ a. contract b. grant c. cooperative agreement d. loan e. loan guarantee f. loan insurance	☐ a. bid/offer/application b. initial award c. post-award	☐ a. initial filing b. material change **For Material Change Only:** year _____ quarter _____ date of last report _____

4. Name and Address of Reporting Entity:	5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:
☐ Prime ☐ Subawardee Tier _____, *if known*: **Congressional District**, *if known*: 4c	**Congressional District**, *if known*:
6. Federal Department/Agency:	**7. Federal Program Name/Description:** CFDA Number, *if applicable*: _____
8. Federal Action Number, *if known*:	**9. Award Amount**, *if known*: $
10. a. Name and Address of Lobbying Registrant (*if individual, last name, first name, MI*):	**b. Individuals Performing Services** (*including address if different from No. 10a*) (*last name, first name, MI*):
11. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.	Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____

Federal Use Only:	Authorized for Local Reproduction Standard Form LLL (Rev. 7-97)

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employeeof a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.

2. Identify the status of the covered Federal action.

3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.

4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.

5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.

6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizationallevel below agency name, if known. For example, Department of Transportation, United States Coast Guard.

7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.

8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."

9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.

10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.

    (b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).

11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

ASSURANCE REQUIREMENT REGARDING EQUAL EMPLOYMENT OPPORTUNITY FOR VENDORS, SUPPLIERS AND CONTRACTORS ENGAGED IN COMMERCIAL TRANSACTIONS WITH THE WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

We, _____, the undersigned, desiring to avail ourselves of the benefits of engaging in commercial transactions with the West Virginia Department of Environmental Protection, hereby agree that:

1) **All employment and personnel practices under this contract, Requisition No. _____, will be conducted without regard to race, sex, religion or national origin;**

2) **We will include in all recruitment advertisements the following wording:**

   "An Equal Opportunity Employer"; and

3) **We will provide the Chief of the Abandoned Mine Lands and Reclamation Division or his/her authorized representative, upon request, documentation that will enable him/her to judge the extent of our compliance with the requirements of Governor's Executive Order No. 4-65, of December 15, 1965.**

Signed this ____ day of _____, 20___.

_____

Signature of Authorized Representative

_____

Title

ARTICLE IV - SPECIAL CONDITIONS

3.0 GOVERNMENT-WIDE DEBARMENT & SUSPENSION REQUIREMENTS

U. S. Department of the Interior

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion

Lower Tier Covered Transactions

---

1. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

4. The terms "covered transaction," "debarred", "suspended", "ineligible", "lower tier covered transaction", "participant", "person", "primary covered transaction", "principal", "proposal", and "voluntarily excluded", as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

5. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction originated.

6. The prospective lower tier participant further agrees by submitting this proposal, that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Non procurement List (Tel.#).

8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

9. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

U. S. Department of the Interior

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion

Lower Tier Covered Transactions

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 43 CFR Part 12, Section 12.510, Participants' responsibilities. The regulations were published as Part VII of the May 26, 1988 Federal Register (pages 19160-19211). For assistance in obtaining a copy of the regulations, contact the U.S. Department of the Interior, Acquisition and Assistance Division, Office of Acquisition and Property Management, 18th and C Streets, N.W., Washington D.C. 20240.

(1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

_____

Name and Title of Authorized Representative

_____

Signature **Date**

ARTICLE IV - SPECIAL CONDITIONS

Instructions for Certification Regarding Lobbying

1. **This certification and a disclosure form should be filed by each person as required, with each submission that initiates agency consideration of such person for: (1) award of a Federal contract, grant, or cooperative agreement exceeding $100,000 or (2) an award of a Federal loan or a commitment providing for the United States to insure or guarantee a loan exceeding $150,000.**

2. **This certification and a disclosure form should be filed by each person as required, upon receipt by such person of (1) a Federal contract, grant, or cooperative agreement exceeding $100,000, or (2) a Federal loan or a commitment providing for the United States to insure or guarantee a loan exceeding $150,000, unless such person previously filed a certification, and a disclosure form, if required, at the time agency consideration was initiated.**

3. **Any person who requests or receives from a person referred to in paragraphs (1) and (2) above: (1) a subcontract exceeding $100,000 at any tier under a Federal contract; (2) a subgrant, contract, or subcontract exceeding $100,000 at any tier under a Federal grant; (3) a contract or subcontract exceeding $100,000 at any tier under a Federal loan exceeding $150,000; or (4) a contract or subcontract exceeding $100,000 at any tier under a Federal cooperative agreement, shall file a certification, and a disclosure form, as required, to the next tier above.**

4. **All disclosure forms, but not certifications, shall be forwarded from tier to tier until received by the person referred to in paragraphs(1) or (2) above. That person shall forward all disclosure forms to the appropriate Bureau/Office within the Department of the Interior.**

5. **Any certification or disclosure form filed under paragraph (4) above shall be treated as a material representation of fact upon which all receiving tiers shall rely. All liability arising from an erroneous representation shall be borne solely by the tier filing that representation and shall not be shared by any tier to which the erroneous representation is forwarded. Submitting an erroneous certification or disclosure constitutes a failure to file the required certification or disclosure, respectively. If a person fails to file a required certification or disclosure, the United States may pursue all available remedies, including those authorized by Section 1352, title 31, U.S. Code.**

U. S. Department of the Interior
CERTIFICATION REGARDING LOBBYING

This certification is required by Section 1352, title 31, U. S. Code, entitled "Limitation on use of appropriated funds to influence certain Federal contracting and financial transactions."

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

Certification for Contracts, Grants, Loans, and Cooperative Agreements

---

The undersigned certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions. To obtain a Standard Form LLL, contact DEP or the U.S. Office of Surface Mining, 603 Morris Street, Charleston, WV 25301, phone number 347-7158.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

Signature _____ **Date** _____

ARTICLE V - WAGE AND HOUR INFORMATION

PREVAILING WAGE RATES

can be obtained by contacting:

WV Division of Labor
Capitol Complex
Bldg. 6, Room 749B
Charleston, WV 25305

Phone: (304) 558-7890

Website: www.sos.wv.gov

ARTICLE VI - CONSTRUCTION SPECIFICATIONS

SPECIFICATIONS
FOR
SUGARCAMP RUN BURNING REFUSE PHASE II
NICHOLAS COUNTY, WEST VIRGINIA

Date: AUGUST 2015

Prepared by:

E.L. ROBINSON ENGINEERING

5088 WASHINGTON ST. WEST
CHARLESTON, WV 25313
PHONE: 304 776-7473
FAX: 304776-6426

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DIVISION II – TECHNICAL SPECIFICATIONS

APPENDICES

WVDEP – SUGARCAMP RUN BURNING REFUSE PHASE II

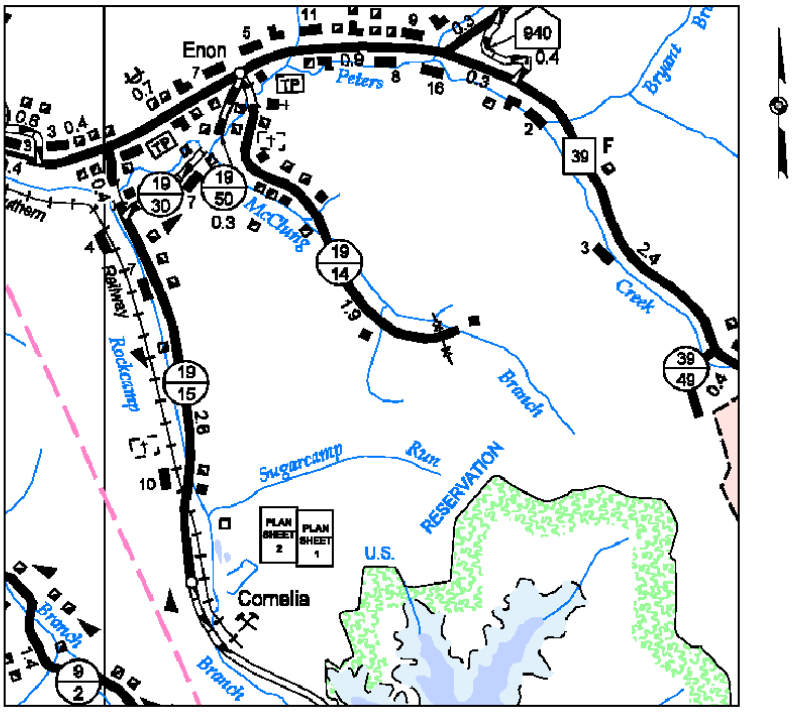
DIVISION I. - SPECIAL PROVISIONS

1.01 LOCATION AND SITE DESCRIPTION

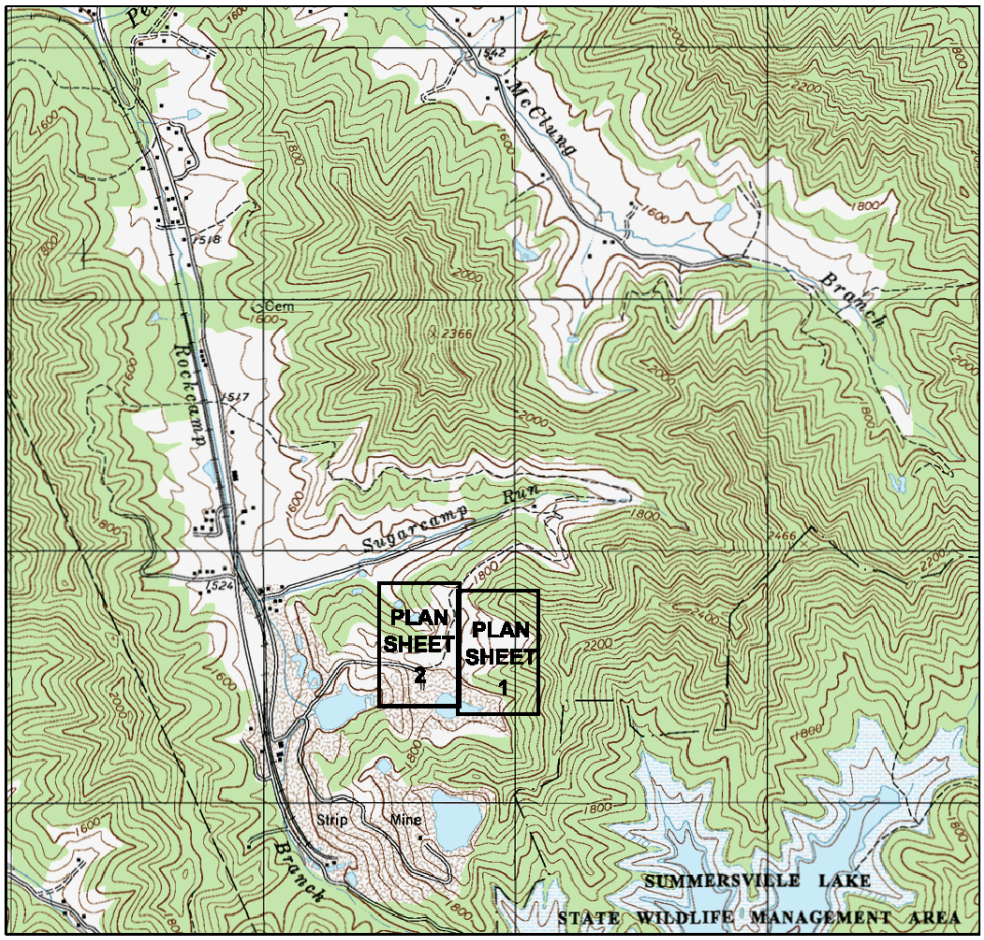
The subject project is located in Nicholas County, West Virginia near the community of Gilboa. The project is located off of Camp Fork Road County Rt. 19/15 along Sugarcamp Run adjacent to a permitted mine facility.

The AML problems to be addressed at this site include:

- Burning Refuse
- Polluted Drainage



COUNTY VICINITY MAP
NICHOLAS COUNTY



USGS VICINITY MAP
GILBOA QUADRANGLE

Directions to site

From Summersville take Route 39 South to Camp Fork Road CR 19/15. Take left and proceed approximately 2 miles to preparation plant facility on left. Proceed to the left thru the facility on an unimproved road to the site adjacent to the permitted refuse impoundment.

1.02 REFERENCE SPECIFICATIONS / DEFINITIONS

All references to "Owner" in these Specifications shall mean West Virginia Department of Environmental Protection, Office of Abandoned Mine Lands and Reclamation (WVDEP).

All reference to "Engineer" in these Specifications shall mean the Owner's Engineer or authorized representative.

All reference to "ASTM" shall mean the American Society of Testing and Material Specifications, Latest Edition unless otherwise noted.

All reference to "AASHTO Specifications" shall mean the Standard Specifications for Transportation Materials and Methods of Sampling and Testing by the American Association of State Highway and Transportation Officials, latest edition, and all subsequent addenda thereto.

All reference to "WVDOT Standard Specifications" shall mean State of West Virginia Department of Transportation, Division of Highways Standard Specifications for Roads and Bridges, adopted 2000, and all-subsequent addenda thereto.

All references to the "Contractor" shall be understood to mean the successful bidder and or firm or corporation undertaking the execution of the work under the terms of these Specifications.

All reference to "OSHA" shall be understood to mean The Occupational Safety and Health Administration and the standards set in the Occupational Safety and Health Act of 1970.

All reference to "refuse" and/or "mine spoil" shall be understood to mean all coal refuse, shale, sandstone and other rock fragments that were generated and disposed of as such within the project area during mining and processing of coal.

All reference to "AMD" shall be understood to mean all acid mine drainage discharges from the project site.

All reference to "OSM" shall be understood to mean Office of Surface Mining.

1.03 SCOPE OF WORK

The work covered by the Special Provisions and Technical Specifications consists of furnishing all labor, plant, power, equipment and supplies, and performing all operations necessary for the completion of the project. The Contractor shall perform all operations necessary for:

- Clearing and Grubbing at the site, and removal or burning of debris, trash, tree roots, and associated Materials;
- Construction and installation of support areas, and maintenance of access roads to the site;
- Regrading and extinguishment of coal refuse;
- Construction and installation of drainage control items;
- Revegetation
- Providing sediment control;

The Contractor also shall be responsible for surveying, including establishing construction baseline, measuring and developing all completed quantities on the job, and for ordering, purchase and delivery of any and all materials required for construction or required for development of support areas. The Contractor shall perform all other operations as incidental to the program as specified herein.

1.04 BIDDERS TO EXAMINE LOCATION

Prospective bidders are required to examine the locations of the proposed work and to determine, each in their own way, the difficulties which may be encountered in the prosecution of the same. The submission of a bid shall be prima facie evidence that such examination and determinations have been made by the Bidder. No claims for additional compensation will be considered by the Owner based on obstruction or conditions at the location of the work, which may add to the difficulties or costs of construction, even though such obstructions or conditions are not shown on the contract plans or indicated in the other construction documents. Prospective bidders are advised that should they deem it necessary to obtain any subsurface samples of test borings etc., at the site, they should obtain their own permission from the landowners

1.05 SCHEDULE OF WORK

Before commencing work on this project, the Contractor shall prepare and submit a schedule of construction activities for approval by the Owner. The Contractor shall provide adequate supervision, labor, tools, equipment, and materials to prosecute the work energetically and complete the work within the time specified. It is the intention not to delay the work for the checking of lines or grades, but if necessary, working operations shall be suspended for such reasonable time as the Engineer may require for the purpose. No special compensation shall be paid for the cost to the Contractor for any of the work or delay occasioned by checking lines and grades, by making other necessary measurements, or by inspection.

Work Hours- The contractor will perform the work specified in this contract during the hours of 7:00 am to 7:00 pm Monday thru Saturday. Work on Sunday and major holidays, as defined by the Engineer, will not be allowed on this project.

1.06 MEASUREMENT OF QUANTITIES

The Contractor shall be responsible for providing all necessary volumetric, dimension, and weight measurement equipment necessary to prosecute the work as shown on the Construction Drawings and to accurately determine quantities for payment of Contract Bid Items as approved by the Engineer. Such measurements and equipment shall be subject to the approval of the Engineer for use in this project.

1.07 BORROW (DISPOSAL) AREAS

All borrow (disposal) areas must be approved by WVDEP. Should the Contractor decide to obtain and utilize any borrow areas outside of construction limits, or move material from one property owner to another unless designated, the Contractor shall be responsible to obtain from the property owner(s) of the borrow areas, all necessary rights of entry, including rights of entry for WVDEP and OSMRE for inspection purposes. The said rights of entry agreement must state that the property owner(s) agree to indemnify and hold harmless the WVDEP from all liability and/or damages resulting from the contractor's use of property for which the contractor was to obtain rights of entry for borrow, disposal, access or other purposes. Said indemnification shall include, but is not limited to, liability and damages resulting from the contractor's failure to obtain any

or not all the rights of entry; failure to obtain the proper rights of entry; failure to utilize appropriate language in the rights of entry agreements; or failure to obtain permission and signature of all persons or entities holding a legal interest in the subject properties covered by the rights of entry.

The Contractor also shall submit a borrow area reclamation plan for prior approval by WVDEP. The Contractor shall observe the following NEPA compliance schedule relative to selecting and utilizing any off site borrow areas and or any waste disposal areas.

a. No borrow (disposal) site operations will affect a site listed in, eligible or proposed to be listed in the National Register of Historic Places.

b. No borrow (disposal) operations will be located within one-quarter mile of any Federally listed established or prospective component of the National Wild and Scenic River System under 16 USC 1274 and 1276.

c. Borrow (disposal) site operations will not cause a significant encroachment within the base floodplain (CE.O. 11988: Floodplain Management).

d. Borrow (disposal) site operations will not be located in or affect a critical habitat of a Federally listed endangered or threatened species under 16 USC 1531, et. seq.

e. No borrow (disposal) operations will occur in wetland areas which are designated by appropriate agencies.

f. Borrow (disposal) site operations will be consistent with any approved plans governing ambient air quality.

g. Adherence to these mitigation measures does not relieve the Contractor of the obligation or responsibility to obtain any other Federal, State, or local approvals required to use borrow (disposal) areas and conduct such activities.

h. Documentation: Copies of borrow (disposal) site approvals and concurrences will be submitted to the WVDEP prior to the commencement of reclamation activities.

i. Site Monitoring: Borrow (disposal) activities will be monitored by the State to ensure compliance with contractual requirements, applicable Federal, State, and local laws, and any permit conditions.

1.08 DISPOSAL OF UNSUITABLE MATERIAL

All waste areas shall be obtained in accordance with Special Provisions Section 1.07 of these specifications. All unsuitable materials (wood, trash, debris, and garbage) as determined by the Engineer shall be wasted by the Contractor, at his/her expense, outside the limits of work conforming to the requirements of Sections 4.3 of these Specifications. Wood may be burned in conformity with Sections 4.3 of these Specifications.

The Contractor shall observe the NEPA compliance schedule relative to selecting and utilizing any off-site disposal areas in accordance with Special Provisions Section 1.07 of these Specifications.

1.09 INTERPRETATION OF APPROXIMATE ESTIMATE OF QUANTITIES

The estimate of quantities of work to be done and/or materials to be furnished under the Special Provisions and Technical Specifications, as shown on the Contract Bid Schedule, is approximate and is given only as a basis of calculation upon which the award of the Contract is to be made. WVDEP reserves the right to increase or decrease any or all of the quantities of work or to omit any of them, as it may deem necessary.

1.10 SAFETY

All regulations of the Occupational Safety and Health Act of 1970 (OSHA) are in effect for this Contract. WVDEP shall not be liable for any citations received by the Contractor as a result of failure to comply with applicable OSHA standards. Compensation is to be included in the various items of the Contract for the expense involved in complying with these standards. In addition, the Contractor shall comply with Section 107.7 of the WVDOH Standard Specifications regarding public convenience and safety. Contractor shall be required to submit a work safety plan for working in and around the burning refuse area. Plan shall include but not limited to monitoring of heat, carbon monoxide and prevention of exposure to dust.

1.11 REGULATIONS

All appropriate Township, County, State, and Federal Regulations shall apply to this Contract. It shall be the Contractor's sole responsibility to be aware of these regulations and to comply with them. WVDEP shall not be liable for any citations received by the Contractor. The Contractor shall keep the existing roads open and safe to public vehicular traffic at all times and shall provide appropriate barriers and warning devices as directed by the Engineer.

1.12 LAWS TO BE OBSERVED

The Contractor shall at all times, observe, comply with, and post as required all Federal, State, and local laws, ordinances, and regulations in any manner affecting the conduct of the work or applying to employees on the project as well as all orders or decrees which have been or may be promulgated or enacted by any legal bodies or tribunals having authority or jurisdiction over the work, materials, employees, or Contract. The Contractor shall protect and indemnify WVDEP and its representatives against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree whether by the Contractor or by the Contractor's employees.

1.13 PERMITS, LICENSES AND FEES

The WVDEP shall provide the NPDES Stormwater permit from the Division of Water and Waste Management, a WVDOH Encroachment permit if required, the Water Quality Certification from the Division of Water and Waste Management and an ACOE Regional permit if required. The Contractor shall procure all other permits and licenses, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. Permits required for this project may include but are not limited to: a Stream Activity permit from the WV Division of Natural Resources and burning permits from the WV Division of Forestry and WVDEP, Division of Air Quality. A copy of the permits as procured shall be furnished to the Owner prior to initiation of the work under this Contract.

1.14 ELECTRICITY, WATER SUPPLY AND SANITARY FACILITIES

There are no available supplies at the site of electricity and water and, additionally, there are no sanitary facilities. Arrangements for electric service, water supply and sanitary facilities shall be made by the Contractor, and all costs for such arrangements shall be borne by the Contractor at no additional cost to the Department.

1.15 UTILITIES AND OTHER OBSTRUCTIONS

The Contractor shall be solely responsible to correctly locate all existing active underground and overhead utilities at the project sites and take precautions to avoid damage to them. Any existing utility lines damaged by the Contractor shall be replaced by the Contractor or repaired at no cost to the Owner. The Contractor shall notify the utility companies likely to be affected well in advance and before beginning any work within the project sites. In the event of damage to the existing utilities or other facilities, the Contractor shall notify the affected utility Owner(s) and the Engineer immediately and make, or have made, all necessary repairs and bear the expense thereof and resulting damage caused thereby. It shall be the responsibility of the Contractor to arrange for relocating the utility lines, where required and as directed by the Engineer, in accordance with the guidelines set forth by the utility company, prior to beginning construction. The Contractor will be reimbursed for actual charges invoiced by the Utility Company. The utility companies (and WVMIS) must be contacted by the Contractor at least one week prior to commencement of construction activities for the purpose of field locating and marking utility owned facilities within the project area. The name, address, and phone number of the WVMIS Utility location service and of the utility companies are as follows:

WVMIS
1-800-245-4848

1.16 SITE CLEANUP

Before the project shall be considered as having been satisfactorily completed, the Contractor shall clean and remove, from the project site, all surplus and discarded materials, and equipment and shall further remove all debris and objectionable materials of any kind from areas used or disturbed by the construction operations within or within sight of the project area.

1.17 ROCK BLASTING

All blasting operations shall be conducted in strict accordance with applicable State and Federal laws relating to rock blasting and the storage and use of explosives. The contractor shall maintain and keep in full force and effect blasting insurance to protect and indemnify the Owner and/or his agents or representative from claims for damages and shall defend all suits at law. The Contractor shall submit to the Owner a request for permission to blast rock, a reclamation plan for the area to be disturbed, and proof of blasting insurance coverage prior to initiating blasting operations. Failure to obtain approval for blasting prior to initiating the work will result in no payment for items utilizing this rock.

1.18 TEMPORARY ACCESS ROADS

The Contractor shall construct and maintain temporary access roads for convenient access to the various parts of the work, and for other necessary purposes incidental to the performance of this Contract. The

location of access roads shall be approved by the Engineer prior to construction. No separate payment for construction and maintenance of such roads will be made. The Contractor shall erect such temporary fences or guards as may be necessary to keep unauthorized persons away from the work. Grading and surfacing of temporary access roads, excavations, fills and embankments for purposes of construction, or for convenience, beyond the limits of ordered excavations and all temporary fences and guards, shall be provided by the Contractor and shall be maintained in good condition. The Contractor shall be required to maintain all roads used by his hauling equipment in a dust-controlled condition. Upon completion, the Contractor shall return the disturbed areas to the approximate original condition as approved by the Engineer. The Contractor is responsible for maintaining access roads, and controlling water along the access roads. **A portion of the access roads are WVDEP permitted mine access roads and the contractor shall comply with all requirements associated with the permit.**

The contactor shall be required to obtain a right of entry agreement from any property owner(s) prior to the utilization or construction of any access outside of the construction limits shown on the plans. Such agreement shall require the property owner(s) to indemnify and hold WVDEP harmless from any and all injuries or damages, whatsoever, resulting from the Contractor's use of the property.

1.19. TRAFFIC CONTROL

The Contractor shall maintain and protect traffic, protect the work in progress, protect adjacent property from excess dust resulting from the construction and maintain traffic through, around, or adjacent to the construction area. All materials used for traffic control shall be in accordance with the current WVDOH manual: "Traffic Control for Streets and Highway Construction and Maintenance Operations." A copy of the operational plan accepted by the WVDOH shall be submitted to the WVDEP for approval prior to its implementation. All traffic control required during the work shall be considered incidental to the project.

1.20 SITE CONDITIONS AND ENVIRONMENTAL PROTECTION

Conditions at the site shall be examined by the Contractor, and the Contractor shall assume responsibility as to the contours and the character of the earth, rock, water and other items that may be encountered during the excavation and filling operations.

The Contractor shall be responsible for controlling and handling water encountered during construction, including dewatering of mine pools for mine seal installations, by providing equipment and labor to insure safe and proper construction. The Contractor shall submit a plan to the WVDEP at the pre-construction meeting for approval. The WVDEP's approval of this plan does not relieve the Contractor of his responsibility for controlling water.

The Contractor shall be responsible for the operation and maintenance of any required diversion or pumping facilities for removing ground water from work areas during the progress of the work under this Contract.

The Contractor shall be responsible for furnishing all materials, equipment, labor and incidentals necessary for the installation of silt barriers and check dams as designated in the drawings. Sediment control shall be placed on regraded areas concurrent with construction and prior to revegetation.

The Contractor shall be responsible for implementing the measures called for in the NPDES Stormwater permit provided by the WVDEP for erosion and sediment control. Sediment control measures shall be in-place and operational prior to any disturbance occurring in the project area. The WVDEP's approval of this plan does not relieve the Contractor of his responsibility to be in compliance with any laws and/or permits.

The Contractor shall take any necessary steps to prevent erosion or silting problems from occurring and to minimize pollution or sedimentation of the stream. If any such problems develop, the Contractor shall be responsible to take immediate corrective action.
The Contractor shall be responsible for the repair or replacement of streets or driveways (blacktop, gravel & concrete), trees, shrubs, fences, and any other physical features that are disturbed by construction which were not included in the proposed scope of work for the project to original condition or better at his own expense.
The Contractor shall be responsible for the replacement of any existing boundary or corner markers disturbed by construction activities.
The Contractor shall be responsible for water handling and disposal of any oil generated during construction activities.

1.21 CONTROL AND REVIEW OF WORK BY THE ENGINEER

All services rendered by the Engineer consist of professional opinions and recommendations made in accordance with generally accepted engineering practice. Under no circumstances is it the intent of the Engineer to directly control the physical activities of the Contractor or the Contractor's workmen's accomplishment of work on this project.

The presence of the Department's Field Representative and/or Engineer at the site is to provide the Department a continuing source of professional advice, opinions and recommendations based upon the Field Representative's and/or Engineer's observations of the Contractor's work and does not include any superintending, supervision or direction of the actual work of the Contractor or the Contractor's workmen. Any construction review of the Contractor's performance conducted by the Engineer is not intended to include review of the adequacy of the Contractor's safety measures, in, or near the construction site.

1.22 CITATION OF OTHER SPECIFICATIONS

Whenever the Specifications for this Contract refer to the specifications of any society, institute, association or government organization, then such specifications cited shall become a part of this Contract as if written in full. Commonly used abbreviations have the following meanings:

ASTM - American Society for Testing Materials

ASA - American Standards Association

AWWA - American Water Works Association

AASHTO - American Association of State Highway and Transportation Officials

ACI - American Concrete Institute

WVDOT – West Virginia Department of Transportation

WVDOH- West Virginia Department of Highways

Where reference is made to a specification, it shall be the latest revision of the referenced Specification available on the date bids are received unless otherwise noted on the Plans or elsewhere herein.

1.23 NPDES STORMWATER PERMIT GUIDELINES

VEGETATIVE PRACTICES

Except as noted below, stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than seven days after the construction activity in that portion of the site has permanently ceased.

- Where the initiation of stabilization measures by the fourth day after construction activity temporarily or permanently ceases is precluded by snow cover, stabilization measures shall be initiated as soon as conditions allow.

- Where construction activity will resume on a portion of the site within 14 days from when activities ceased, (e.g., the total time period that construction activity is temporarily halted is less than 14 days) then stabilization measures do not have to be initiated on that portion of the site by the seventh day after construction activities have temporarily ceased.

Areas where the seed has failed to germinate adequately (uniform perennial vegetative cover with a density of 70%) within 30 days after seeding and mulching must be reseeded immediately, or as soon as weather conditions allow. Diversions must be stabilized prior to becoming functional.

MAINTENANCE & INSPECTION

At a minimum, all erosion and sediment controls on the site will be inspected at least once every seven calendar days and within 24 hours after any storm event of greater than 0.5 inches of rain per 24-hour period.

All controls should be cleaned out when sediment reaches one half the sediment capacity of that control.

Inspection and maintenance records must be kept onsite

1.24 CONSTRUCTION PLANS AND DRAWINGS

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DIVISION II. – TECHNICAL SPECIFICATIONS

1.0 MOBILIZATION AND DEMOBILIZATION

1.1 Description

This work shall consist of the performance of construction preparatory operations, including the movement of personnel and equipment to the project site, installation of the project sign, and for the establishment of the Contractor's DEP approved facilities necessary to begin work on a substantial phase of the contract. It shall also include all demobilization activities. All equipment and material storage areas are to be approved by the WVDEP.

1.2 Method of Measurement

The method of measurement for determining the mobilization and demobilization work done as described above will be on a lump sum basis, with partial payments as listed below.

1.3 Basis of Payment

The bid for Mobilization shall be a lump sum and cannot be more than 10% of the **"TOTAL AMOUNT BID"** for the project. Partial payments will be as follows:

One-half of the amount bid will be released to the Contractor with the first estimate payable, not less than 15 days after the start of work at the project site.

The final one-half of the amount bid shall be released on the final payment estimate.

Nothing herein shall be construed to limit or preclude partial payments otherwise provided by the Contract.

No deduction will be made, nor will any increase be made, in the lump sum mobilization item amount regardless of decreases or increases in the final total contract amount or for any other cause.

1.4 Pay item

Item 1.0 **"Mobilization and Demobilization",** per lump sum. Cannot be more than 10% of the **"TOTAL AMOUNT BID"** for the project.

2.0 CONSTRUCTION LAYOUT

2.1 Description

This item consists of furnishing, placing, replacing and maintaining construction layout stakes, baseline stations, primary control points and any disturbed property location monuments as necessary for the proper performance of the work under this contract. It further consists of determining the exact units of measure for payment. It also consists of checking and making any field adjustments to the plan grades and elevations that may be necessary due to the wide variability of coal refuse shrinkage factors when compacted.

Additionally, this item also includes the generation of cross-sections of the site indicating pre and post-construction lines for submission to the WVDEP. "As-Built" Drawings, including the Reclamation Plan and any others specifically requested by the WVDEP, shall be provided to the WVDEP prior to the Final Inspection Meeting. "As Built" plans are to be submitted in hard copy format for approval. After approval has been given, the contractor shall submit the approved plans on a CD in PDF and AutoCAD format.

2.2 Materials

Conventional survey stakes, flagging, drafting media, etc.

2.3 Construction Methods

The Engineer will locate and reference for one time, and one time only, back sites and bench marks necessary for the proper layout of the work. The Contractor shall make all calculations involved and shall furnish and place all layout stakes.

The Contractor shall provide a field work force and shall set all additional stakes needed, such as offset stakes, reference point stakes, slope stakes, grade stakes, stakes for drainage, or other structures, supplementary bench marks, and any other horizontal or vertical controls necessary to secure a correct layout of the work. **Prior to commencement of work the contactor shall flag construction work limits. Limits shall be flagged to clearly define the permit areas adjacent to the project.** The Contractor shall be responsible for having the layout staking work conform to the lines, grades, elevations, and dimensions called for on the Plans. The Contractor shall furnish a copy of his survey records for checking by the WVDEP and for the Owner's permanent file. These records shall be furnished as they are completed during the progress of the work. Any inspection or checking of the Contractor's layout by the WVDEP and the acceptance of all or any part of it shall not relieve the Contractor of his responsibility to secure the proper dimensions, grades, and elevations.

The Contractor shall exercise care in the preservation of existing stakes and bench marks, including existing property line markers, and shall have them reset at his expense when any are damaged, lost, displaced, or removed. The Contractor shall use primary control points for re-establishing baseline stations wherever previously surveyed stations have been destroyed or removed. At a minimum, the Contractor shall confirm the location of existing baseline stations by field survey of each station's relationship to a suitable primary control point. Should any discrepancies be found, primary control points shall supersede any existing baseline stations.

The Contractor shall use competent personnel and suitable equipment for the layout work required and shall provide that it be done under the supervision of, or approved by, a Registered Professional Engineer or Licensed Land Surveyor.

The Contractor shall provide the WVDEP existing ground and proposed ground line cross-sections and notes for acceptance prior to any earthwork activities and as-built ground line cross-sections and notes as soon as practical after the completion of construction. Failure to do so could either preclude any future alteration to the total amount bid for earthwork and/or retard the final installment payment for earthwork.

Acceptable cross-sections shall be drawn or reproduced on bond paper and at the same scale provided in the design drawings. Each sheet shall be lightly gridded to match the cross sections in the design drawings and shall contain station numbers, elevations, baseline offset distances, cross-section lines and types, date, responsible parties and a legend shall be clearly illustrated. Cross sections which do not encompass all areas of both earthwork excavation and fill placement shall be considered incomplete without exception

All survey notes, calculations, sections, plans, or other documents produced pursuant hereto shall be certified as correct by a Registered Professional Engineer or Licensed Land Surveyor. The WVDEP shall be allotted sufficient time to reasonably review submitted cross-sections and investigate any and all discrepancies, throughout the course of construction. Unacceptable and/or incomplete cross-sections shall be returned to the Contractor for necessary revision. No earthwork, nor any other directly related work item, shall be initiated prior to the WVDEP's acceptance of a complete set of pre-construction cross-sections. Costs incurred by the Contractor from the delay of any construction activities required by the WVDEP to recover, review and investigate project cross-sections as described herein shall be the sole responsibility of the Contractor.

"As-Built" Drawings, including the Reclamation Plan and any others specifically requested by the WVDEP, shall be provided to the WVDEP prior to the Final Inspection Meeting.

2.4 Method of Measurement

There shall be no measurement of this item as it is lump sum. Payment will be for furnishing, setting, maintaining, and resetting the stakes, when necessary; for furnishing all engineering personnel, equipment, materials, and all incidentals thereto; and for providing the WVDEP pre and post-construction ground line cross-sections and "as-built" drawings as described herein.

2.5 Basis of Payment

This item shall be paid at the bid lump sum price. The amount shall not exceed five percent (5%) of the **"Total Amount Bid"** for the project. No deduction will be made, nor will any increase be made in the lump sum construction layout item amount regardless of decreases or increases in the final total contract amount or for any other cause.

2.6 Pay Item

Item 2.0, **"Construction Layout"**, per lump sum. Cannot be more than 5% of the **"Total Amount Bid"** for the project.

3.0 QUALITY CONTROL

3.1 Description

This work shall consist of assuring the materials supplied and the work performed is in conformance with these specifications.

3.2 Applicable Publications

Work shall comply with, but not be limited to, the provisions of the following codes, standards and specifications:

ASTM C-31	"Making and Curing Concrete Test Specimens in the Field"
ASTM C-39	"Compressive Strength of Cylindrical Concrete Specimens"
ASTM C-88	"Sodium Sulfate Soundness"
ASTM D-698	"Test for Moisture-Density Relations of Soils And Soil-Aggregate Mixtures, Using 5.5 lb. Hammer and 12 in. Drop".
ASTM D-1556	"Test for Density of Soil in-place by the Sandcone Method".
ASTM D-2922	"Test for Density of Soil & Soil Aggregate In-place by Nuclear Methods".
ASTM D-3017	"Test for Moisture Content of Soil & Soil Aggregate in-place by Nuclear Methods".
EPA-600/2-76-184	Handbook for Soil and Water Analysis.

3.3 Submittals

The Contractor shall submit a minimum of two (2) copies of shop drawings, catalog cuts and material certifications as applicable to the WVDEP of all off-site materials to be incorporated into the work. Written approval from the WVDEP will be required prior to incorporation of these items into the work.

The Contractor shall submit at least two (2) copies of the results of all tests conducted on materials requiring testing. As a minimum, these tests will include moisture content and density tests of the soil in accordance with the provisions of ASTM D-698 (Standard Proctor), in-place field density tests by ASTM D-1556 or ASTM D-2922, Sodium Sulfate Soundness Tests on stone for the riprap material in accordance with ASTM C-88, compressive strength tests on grout and concrete in accordance with ASTM C-39, and soil tests to determine the lime and nutrient requirements of the areas to be revegetated.

3.4 Construction Methods

The Contractor shall furnish the services of his own testing laboratory or select an independent testing laboratory, as long as the laboratory is under the direct supervision of a Registered Professional Civil Engineer. The laboratory must be approved by the WVDEP.

Testing for compaction, aggregate, grout, soil nutrient and lime requirements, etc., shall be performed as required by these specifications or as requested by the WVDEP in writing. The WVDEP will determine the locations and time of any testing herein specified and the need and extent of any testing in addition to that which is herein specified.

The Contractor shall be responsible to perform laboratory tests of the backfill, coal refuse, and mine spoil, to identify the compaction requirements, the standard proctor density and to determine their use as cover and fill materials. In addition, field density tests shall be performed in accordance with these construction specifications. All test results shall be submitted to the WVDEP for approval of compaction criteria prior to compaction of the fill and after fill compaction to verify that the required compaction is obtained.

Only new and first class materials which conform to the requirements of these Specifications shall be used unless specified otherwise. When requested by the WVDEP, the Contractor shall furnish a written statement of the origin, composition, and manufacturer of any or all materials (manufactured, produced, or grown) that are to be used in the work. The sources of supply of each material used shall be approved by the WVDEP before delivery is started. If, at any time, sources previously approved fail to produce materials acceptable to the WVDEP, the Contractor shall furnish materials from other approved sources.

3.5 Method of Measurement

The method of measurement for determining the quantity of quality control work done as described above will be on a lump sum basis.

3.6 Basis of Payment

The quantity of work done will be paid at the bid lump sum price for this item, which price and payment shall be full compensation for doing all the work herein prescribed in a workmanlike and acceptable manner; including the furnishing of all labor, materials, tools, equipment, supplies and incidentals necessary to complete the work.

No deduction will be made, nor will any increase be made, in the lump sum quality control amount regardless of decreases or increases in the final total contract amount or for any other cause.

3.7 Pay Item

Item 3.0, **"Quality Control",** per lump sum. Cannot be more than 3% of the **Total Amount Bid** for the project.

4.0 SITE PREPARATION

4.1 Description

Work performed under this section shall include clearing and grubbing, access roadway construction, access roadway rehabilitation, removal and disposal of all trees, stumps, shrubs and any other vegetation, wood, debris, abandoned mining structures and garbage of any nature from the limits of the areas of construction and any other areas as approved by WVDEP. This work shall also include the preservation from injury to all vegetation, utilities or other objects to remain.

Roads shall be protected as per notes on the attached plans. Stone consisting of a four (4) inch layer of Class I Aggregate shall be placed on disturbed access roads at the completion of the construction as shown on the attached plans or directed by the WVDEP.

This work consists of the installation of temporary and permanent fence at any location where fence is disturbed during construction.

4.2 Materials

4.2.1 Tree Wound Dressing

Trunk damage to trees shall be painted with Tree-kote or an equal antiseptic and waterproof paint with an asphaltic base. This paint shall not contain coal-tar creosote, turpentine or other materials harmful to plants or animals.

4.2.2 Road Restoration Stone

Road restoration stone shall consist of Class I Aggregate as defined by WVDOT Specifications.

4.3 Construction Methods

4.3.1 Clearing and Grubbing

The specific areas to be cleared and grubbed are as shown on the Contract Drawings and are generally described as, but not limited to, those specific areas of excavation, backfill, or drainage structure installation.

The Contractor shall clear the site within the limits of the areas to be reclaimed. The WVDEP shall exercise control over clearing and shall designate all trees, plants and other objects to be removed or to remain.

Install perimeter erosion and sediment controls (BMP's) prior to clearing and grubbing. These controls shall be approved by the WVDEP inspector before clearing and grubbing begins. Clearing and grubbing shall be completed prior to initiation of earthwork operations only to the extent necessary to complete the work. The Contractor shall confine his operations strictly to required areas. If he clears and grubs beyond the required areas, whether knowingly or accidentally, he shall, at his expense, replant and

otherwise restore all areas outside the limit lines to a condition equal to that existing prior to start of work.

All stumps, roots, buried logs and brush shall be removed. Grass, however, may be incorporated into the resoiling material. Tap roots and other projections over 1 ½ inches in diameter shall be grubbed out to a depth of at least ten (10) inches below the planned subgrade or slope elevation. All holes remaining after the grubbing operation shall have the sides broken down to flatten out the slopes, and shall be filled with suitable materials, moistened and properly compacted.

Cleared and grubbed areas shall be worked such that positive drainage is provided to prevent ponding of water.

All organic material shall be burned on site pending the contractor securing the necessary permits, however, burning of the combustible material will not be permitted within close proximity to coal seams, structures, or on or near coal refuse. The Contractor shall obtain all permits and licenses required prior to burning the material. A plan showing the location of material to be burned and all fire control measures to be implemented, including copies of permits and licenses shall be submitted to the WVDEP's representative at the site for approval. All timber 8" in diameter and larger at stump height shall be cut prior to clearing and grubbing operations. Timber shall be topped with branches removed and stacked and stockpiled in an appropriate manner in an accessible location approved by WVDEP on the property from which it was cut. Timber to be stockpiled shall not be pushed down by equipment prior to being cut nor can it be indiscriminately shoved into a stockpile.

All other materials generated from required clearing and grubbing operations shall be removed and disposed of by the Contractor. All garbage, tires, construction debris, mining debris, mining structures, etc., within the limits of construction, shall be disposed at a licensed landfill. Weigh ticket as receipts for this material will be required.

4.3.2 Access Roads

Existing site access roads shall provide safe, all-weather access to the site. These existing roads, including paved roads, shall be maintained during construction and left in an equal or improved state of repair after construction.

Construction of the access roads that require access interruption are to be coordinated with residents, commercial businesses and utility companies and kept to a minimum. The Contractor is responsible for locating and avoiding all underground and overhead utilities and constructions during access road upgrading and maintenance.

It shall be the sole responsibility of the Contractor to correctly locate and avoid all underground, on-ground, and overhead utilities, facilities and other structures and constructions, and for that purpose, shall employ all necessary precautions and methods to insure avoidance of and damage to such constructions. In the event damage does occur, the Contractor shall notify the affected Owner and the WVDEP immediately and make or have made all necessary repairs and bear the expense thereof and resulting

damage caused thereby. See Division I, Section 1.15, Utilities and Other Obstructions, of the Special Provisions for more information on utilities.

Road restoration stone shall consist of Class I Aggregate as defined by WVDOT Specifications. The stone shall be placed and compacted in a four inch layer as indicated in the attached plans at the **completion** of construction in the specific area of the project. **The contractor shall be solely responsible for maintaining roads and driveways during construction.**

4.3.3 Moving Existing Water Treatment Line and Power Source

The contractor will be responsible for coordinating with Alpha Natural Resources in moving the existing waterline and associated power line extending from their impoundment to the treatment pond at the toe of the refuse pile to an area outside of the proposed work limits.

4.3.4 NEPA Compliance Schedule

The West Virginia Department of Environmental Protection has determined that off-site disposal (or borrow) may be required to complete reclamation on this site. Since the most effective location has not been determined, the following procedures will be observed relative to selection and utilizing any disposal (or borrow location).

No disposal (or borrow) site operations will affect a site listed in, eligible or proposed to be listed in the National Register of Historic Places.

No disposal (or borrow) operations will be located within one-quarter mile of any Federally listed, established or prospective component of the National Wild and Scenic River System under 16 USC 1274 and 1276.

Disposal (or borrow) site operations will not cause a significant encroachment within the base floodplain (E.O. 11988: Floodplain Management).Disposal (or borrow) site operations will not be located in or affect a critical habitat of a Federally listed endangered or threatened species under 16 USC 1531, et. seq.

No disposal (or borrow) operations will occur in wetland areas which are designated by appropriate agencies. Disposal (or borrow) site operations will be consistent with any approved plans governing ambient air quality.

Adherence to these mitigation measures does not relieve the grantee or recipient of the obligation or responsibility to obtain other Federal, State, or local approvals required to use disposal (borrow) and conduct such activities.

Documentation: Copies of disposal (borrow) site approvals, and concurrences will be submitted to the Department of Environmental Protection prior to the commencement of reclamation activities.

Site Monitoring: Disposal (borrow) activities will be monitored by the State to ensure compliance with contractual requirements, applicable Federal, State, and local laws, and any permit conditions.

4.3.5 Debris Removal

Trash, garbage, railroad ties, roofing shingles, tires plastic, metal and other unsuitable material shall be disposed of by the Contractor at his/her own responsibility and expense outside the work limits in an approved landfill, as approved by the Engineer, unless otherwise directed.

Concrete, foundation ruins, bricks, stone and cinder blocks, if encountered will be incorporated into the fill shall be of size less than two feet in any dimension and shall be buried at least one foot below finished grade in locations approved by the WVDEP. Hollow core cinder blocks shall be crushed prior to incorporation into the fill.

In the area where structures and buildings are demolished and removed, the removal operation shall extend to 1 foot below finished grade. The areas shall then be regraded as necessary to blend into adjacent finished grades. Regrading shall be such that all areas are free draining and surface runoff will not pool or impound as directed by the engineer.

4.4 Method of Measurement

4.4.1 Site Preparation

The method of measurement for site preparation will be on a lump sum basis. Clearing and Grubbing, Stockpiling timber, removal of trees, shrubs, equipment, garbage, tires, junk, demolition of structures, debris removal, access road construction, access road rehabilitation will not be measured but will be considered incidental to the site preparation operations. In addition, storage and restoration of plantings shall also be considered as part of the clearing and grubbing.

4.4.2 Road Restoration

The contractor is responsible for maintenance of roads during construction. Road restoration stone placed at the completion of the project shall be paid per ton base on submitted and approved weight tickets.

4.4.3 Waterline and Power Relocation

The contractor is responsible for relocating the power and water line to an area outside the work limits. The completion of this task will be coordinated with Alpha Natural Resources and be measured per lump sum.

4.5 Basis of Payment

4.5.1 Site Preparation

The quantity of work done will be paid at the contract lump sum bid for this item, which price and payment shall be full compensation for doing all the work herein prescribed in a workmanlike and acceptable manner; including the furnishing of all labor, materials, tools, equipment, supplies, and incidentals necessary to complete the work. No deduction will be made, nor will any increase be made, in the lump sum site preparation amount regardless of decreases or increases in the final total contract amount or for any other cause.

4.5.2 Road Restoration

Road restoration stone placed at the completion of the project shall be measured and paid per ton delivered and placed under bid item “Road Restoration”.

4.5.3 Water and Power Line Relocation

Water and Power line relocation shall be measured and paid per lump sum.

4.6 Pay Item

Item 4.1, “Site Preparation”, per lump sum. Cannot be more than 10% of the Total Amount Bid for the project.

Item 4.2, “Road Restoration Stone”, per ton

Item 4.3, “Water and Power Line Relocation”, per lump sum

5.0 EROSION AND SEDIMENT CONTROL

5.1 Description

This item shall consist of furnishing all materials, equipment, labor and incidentals necessary for the installation of Silt Fence, Super Silt Fence, Straw Wattles, Stone Check Dams and Stabilized Construction Entrance as designated in the Drawings. Erosion and Sediment control shall be installed about the perimeter of disturbed areas prior to any construction activities. Erosion and Sediment control shall be placed on regraded outslope areas concurrent with construction and prior to revegetation. Installation locations are shown in the Drawings. Additional locations may be added at discretion of the WVDEP. Silt Fence, Super Silt Fence, Straw Wattles, Stone Check Dams and Stabilized Construction Entrance materials, installation, and maintenance shall be in accordance with the Erosion and Sediment Control Best Management Practice Manual, West Virginia Department of Environmental Protection, Division of Water and Waste Management, dated 2006. Work performed without first installing the proper Erosion and Sediment Control will not be paid.

5.2 Materials

5.2.1 Silt Fence

Silt fencing shall meet all applicable requirements of the West Virginia DOT DOH Specifications.

Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of 6 months expected usable construction life at a temperature range of 0 to 140 degrees Fahrenheit.

If wooden stakes are utilized for silt fence construction, they must be a minimum of 2” x 2” when oak is used and 2” x 4” when pine is used. Wooden stakes should have a minimum length of 4 feet.

If steel posts (standard “U” or “T” section) are utilized for fence construction, they must have a minimum weight of 1.33 pounds per linear foot and should have a minimum length of 5 feet.

5.2.2 Super Silt Fence

Fencing shall be 48inches in height and constructed in accordance with the WV DOT, Division of Highways specification for Chain Link Fencing. The DOT specification for a 6-foot fence shall be used, substituting 48-inch fabric and 6 foot length posts. The filter fabric shall meet the requirements of 715.11.5/AASHTO M 288, Section 7, Class 1.

5.2.3 Stone Check Dams

Stone check dams shall be constructed at the locations indicated on the plans or as approved by the WVDEP representative. Aggregate of 2 to 4 inch size shall be used for drainage areas not to exceed 2 acres. A combination of 4 to 8 inch aggregate and the smaller aggregate shall be used for drainage areas not to exceed 5 acres.

5.2.4 Straw Wattles

The Straw Wattles shall consist of cylinders of recycled, compressed, 100% agricultural straw, and are wrapped in photodegradable black synthetic netting. Twelve (12) inch diameter wattles, 25-feet in length shall be utilized and shall be North American Green (NAG) WS1210, or approved Equal.

The Stakes shall consist of 1"x1" stake, 24 inches in length made from suitable hardwoods. Stakes shall be spaced 4 foot minimum on each straw wattle. Other methods of anchoring may be used if specifically approved by the WVDEP.

5.2.5 Stabilized Construction Entrance

Stone used for construction of the Stabilized Construction Entrance shall be 4 inch to 6 inch for heavy duty usage. The geotextile fabric shall be Thrace-LINQ 140EX or an Engineer approved equal.

5.2.6 Stormwater Detention Pond

The standpipe shall consist of 24" corrugated steel culvert shown on the drawings. The culvert shall be bituminous coated steel and will have 2 2/3" x ½" metal corrugated. The minimum wall thickness shall be as shown on the drawings or an engineer approved equal. Pipe fittings shall be produced by the pipe manufacturer or as specified by the pipe manufacturer to result in proper installation. The Contractor shall join the pipes in a method approved by the ENG. The principle spillway outlet shall consist of a 24 inch HDPE pipe as specified in Section 7 of these specifications. The pond clay liner shall consist of Unified Soil Classification ML, or ML-CL. A one (1) foot layer of #1 stone shall be placed immediately above the clay in the pond. Contractor may use A 60 mil HDPE liner installed on a 6" Compacted Sand or Select material with no particle size more than ¼". The emergency spillway shall consist of grouted riprap as specified in Section 7 of these specifications. Concrete for used in construction shall be Class B concrete in accordance Section 601.3 WVDOH Standard Specifications for Roads and Bridges 2000 and Supplemental Specifications-January 1, 2009.

5.2.7 Erosion Control Matting

Erosion Control Matting for all benches as indicated on the plan sheets shall be North American Green C125 Erosion Control Blanket, or approved equal.

5.3 Installation

5.3.1 Silt Fence

The height of a silt fence shall be a minimum of 16 inches above the original ground surface and shall not exceed 34 inches above ground elevation. The filter fabric shall be purchased in a continuous roll cut to the length of the barrier to avoid the use of joints.

When joints are unavoidable, the silt fence shall be spliced together only at a support post, by twisting the last post of each run around each other, and securely sealed.

A trench shall be excavated approximately 4 inches wide and 4 inches deep on the upslope side of the proposed location of the measure. The filter fabric shall be fastened securely to the upslope side of the posts using one inch long (minimum) heavy-duty wire staples or wire ties and eight inches of the fabric shall be extended into the trench. The fabric shall not be stapled to existing trees. The most common type of silt fence has the stakes attached to the fabric at the factory. The 4-inch by 4-inch trench shall be backfilled and the soil compacted over the filter fabric.

Silt fence shall be removed when it has served its useful purpose, but not before the upslope area has been permanently stabilized. Turn the end of a run of silt fence slightly uphill to prevent runoff from going around the end.

5.3.2 Super Silt Fence

The poles do not need to be set in concrete. Chain link fence shall be fastened securely to the fence posts with wire ties or staples. The Chain Link fence shall be installed in the trench with the fabric. Geotextile fabric shall be fastened securely to the chain link fence with ties spaced every 24" at the top and mid-section. Geotextile fabric shall be embedded a minimum of 12" into the ground. When two sections of geotextile fabric adjoin each other, they shall be overlapped by 6" and folded. Metal posts as specified by DOT can be replaced by pressure-treated 4" x 4" posts.

5.3.3 Straw Wattles

The Straw Wattles shall be installed end to end at locations shown on the plans, per the detail. Straw Wattles, shall be set in a 2"-3" deep trench by 12" wide. Stakes shall be placed every 3 to 4 feet, driven thru the middle of the wattle, with 2"-3" of the top of the stake exposed.

5.3.4 Stone Check Dams

The maximum height of the dams shall be 3 feet. The center of the dam must be at least 6 inches lower than the outer edges. Side slopes shall not exceed 2 feet horizontal to 1 foot vertical.

5.3.5 Stabilized Construction Entrance

Stone Measuring (4-6 Inch) for heavy use or material delivery entrances the length is as required, but not less than 70 feet (Except on a Single Residence Lot where a 30 foot minimum length would apply) The Thickness should not be less than 6 inches. The width shall be a minimum of 12 feet, but not less than the full width at points where ingress or egress occurs. Geotextile Fabric shall be placed over the entire area prior to the placing of stone. All surface water flowing or diverted toward construction entrances shall be piped across the entrance. If a culvert is impractical, a mountable berm with 5:1 slopes shall be used. If necessary, divert and water running down the access road to a sediment trap located on either side of the stabilized construction entrance.

5.2.8 Stormwater Detention Pond

The Stormwater Detention Pond shall be constructed as per the attached plans. The pond shall be excavated and lined with a one (1) foot layer of clay material as defined above. The 24 inch BCCMP standpipe shall be mounted on the concrete anchor and attached to the 24 inch HDPE principle outlet pipe. The emergency spillway shall be constructed per the attached plans line and grades. At the completion of construction and the establishment of vegetation acceptable to DEP, three (3) equally spaced six (6) inch diameter holes shall be cut at the bottom and top of the standpipe to allow water to flow through the abandoned detention pond.

5.3.9 Erosion Control Matting

The erosion control mat shall be installed as per the manufactures instructions.

5.4 Maintenance

5.4.1 Silt Fence

Silt fences shall be inspected every work day and immediately after each rainfall of 0.5 inch or greater. Any required repairs or maintenance shall be made immediately. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. If the fence is not installed on the contour (perpendicular to the flow of water) both of these conditions can occur. Should the fabric on a silt fence decompose or become ineffective prior to the end of the expected usable life and the barrier still is necessary, the fabric shall be replaced promptly.

Sediment deposits should be removed after each storm event. They must be removed when deposits reach approximately one-half the height of the barrier. If any section of silt fence is knocked down during a rain event (because it was installed in an area of concentrated flow) then other measures such as a sediment trap and diversion or super silt fence must be installed.

5.4.2 Super Silt Fence

Super Silt fences shall be inspected every work day and immediately after each rainfall of 0.5 inch or greater. Any required repairs or maintenance shall be made immediately. Close attention shall be paid to the repair of damaged Super Silt Fence resulting from end runs and undercutting. If the fence is not installed perpendicular to the flow of water, these conditions will occur. Should the fabric on a Super Silt Fence decompose or become ineffective, the fabric shall be promptly replaced. Sediment deposits shall be removed when deposits reach approximately one-half the height of the barrier.

5.4.3 Stone Check Dams

Stone Check Dams shall be inspected every work day and immediately after each rainfall of 0.5 inch or greater. Any required repairs or maintenance shall be made immediately. Replace stone and repair dams as necessary to maintain the correct height and configuration. Sediment should be removed from behind the dams when it has

accumulated to one half of the original height of the dam. All Rock Check dams shall be removed from the site at the end of construction.

5.4.4 Stabilized Construction Entrance

Stabilized Construct Entrances shall be inspected every work day and immediately after each rainfall of 0.5 inch or greater. Any required repairs or maintenance shall be made immediately. The entrance shall be maintained in a condition that will prevent tracking of sediment onto public right-of-ways or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public right-of-ways must be removed immediately.

Stabilized Construction Entrances is to be cleaned when full of sediment or refreshed with new stone at no cost to the WVDEP. The stabilized construction entrances will be removed at the end of the project unless approved by the WVDEP.

5.4.5 Stormwater Detention Pond

The Stormwater Detention Pond shall be inspected every work day and immediately after each rainfall of 0.5 inch or greater. Any required repairs or maintenance shall be made immediately. Sediment should be removed from the pond when it has accumulated to one fourth of the original height of the dam. Sediment shall be placed in an area within the construction limits and allowed to dry prior to placement in the fill areas.

5.5 Method of Measurement

5.5.1 Silt Fence

Silt Fence measurement shall be performed to the nearest linear foot of Silt Fence placed in conformance with specifications and accepted by the WVDEP. Only that Silt Fence which is illustrated in the Drawings shall be included for measurement. Any additional Silt Fence installed by the Contractor to meet any applicable State or Federal Law or Regulation shall be the Contractor's sole responsibility and all costs pursuant thereto shall be borne fully by the Contractor. Any Silt Fence which is not illustrated in the Drawings that the Contractor may install to protect streams or for other purposes shall not be included for measurement and shall be the sole responsibility of the Contractor. However, any Silt Fence approved by the WVDEP prior to placement shall be included for measurement.

5.5.2 Super Silt Fence

Super Silt Fence measurement shall be performed to the nearest linear foot of Super Silt Fence placed in conformance with specifications and accepted by the WVDEP. Only that Super Silt Fence which is illustrated in the Drawings shall be included for measurement. Any additional Super Silt Fence installed by the Contractor to meet any applicable State or Federal Law or Regulation shall be the Contractor's sole responsibility and all costs pursuant thereto shall be borne fully by the Contractor. Any Super Silt Fence which is not illustrated in the Drawings that the Contractor may install to protect streams or for other purposes shall not be included for measurement and shall be the sole responsibility

of the Contractor. However, any Super Silt Fence approved by the WVDEP prior to placement shall be included for measurement.

5.5.3 Straw Wattle

Straw Wattle measurement shall be performed to the nearest linear foot of Straw Wattle placed in conformance with specifications and accepted by the WVDEP. Only that Straw Wattle which is illustrated in the Drawings shall be included for measurement. Any additional Straw Wattle installed by the Contractor to meet any applicable State or Federal Law or Regulation shall be the Contractor's sole responsibility and all costs pursuant thereto shall be borne fully by the Contractor. Any Straw Wattle which is not illustrated in the Drawings that the Contractor may install to protect streams or for other purposes shall not be included for measurement and shall be the sole responsibility of the Contractor. However, any Straw Wattle approved by the WVDEP prior to placement shall be included for measurement.

5.5.4 Stone Check Dams

This item shall be measured per each Stone Check Dam constructed and accepted by the engineer.

5.5.5 Stabilized Construction Entrance

This item shall be measured per each Stabilized Construction Entrance constructed and accepted by the engineer and include excavation, filter fabric, stone, waste disposal, removal at completion of project, and all other items necessary for proper construction of the Stabilized Construction Entrance.

5.5.6 Stormwater Detention Pond

This item shall be measured per lump sum constructed and accepted by the engineer and include excavation, clay lining, principle spillway construction, emergency spillway construction, maintenance, waste disposal, and all other items necessary for proper construction of the Stormwater Detention Pond.

5.5.7 Erosion Control Matting

Measurement shall be performed to the nearest square yard of erosion control mat placed in conformation with the plans and specifications and accepted by the WVDEP.

5.6 Basis of Payment

5.6.1 Silt Fence

This item shall be paid at the bid unit price per linear foot of Silt Fence placed and accepted by the WVDEP. Payment shall constitute full compensation for all materials, labor, equipment and incidentals necessary to perform the work. Additionally, payment shall constitute full compensation for any required maintenance, sediment removal and disposal of installed Silt Fence.

5.6.2 Super Silt Fence

This item shall be paid at the bid unit price per linear foot of Super Silt Fence placed and accepted by the WVDEP. Payment shall constitute full compensation for all materials, labor, equipment and incidentals necessary to perform the work. Additionally, payment shall constitute full compensation for any required maintenance, sediment removal and disposal of installed Super Silt Fence.

5.6.3 Straw Wattle

This item shall be paid at the bid unit price per linear foot of Straw Wattle placed and accepted by the WVDEP. Payment shall constitute full compensation for all materials, labor, equipment and incidentals necessary to perform the work. Additionally, payment shall constitute full compensation for any required maintenance.

5.6.4 Stone Check Dams

This item shall be paid for at the bid unit price per each Stone Check Dam constructed and accepted by the engineer. Payment shall constitute full compensation for all materials, labor, equipment and incidentals necessary to complete the work. Payment shall constitute full compensation for any required maintenance, sediment removal and disposal.

5.6.5 Stabilized Construction Entrance

This item shall be paid for at the bid unit price per each Stabilized Construction Entrance constructed and accepted by the engineer. Payment shall constitute full compensation for all materials, labor, equipment and incidentals necessary to complete the work. Payment shall constitute full compensation for any required maintenance, sediment removal, disposal, and removal of the construction entrance at the end of the project.

5.6.6 Stormwater Detention Pond

This Item shall be paid at the lump sum price as constructed and accepted by the Engineer. Payment shall constitute full compensation for all materials, labor, equipment, and incidentals necessary to perform the work. Additionally, payment shall constitute full compensation for any required maintenance.

5.6.7 Erosion Control Matting

This Item shall be paid at the unit price per square yard of erosion control mat placed and accepted by the Engineer. Payment shall constitute full compensation for all materials, labor, equipment, and incidentals necessary to perform the work. Additionally, payment shall constitute full compensation for any required maintenance.

5.7 Pay Item

Item 5.1 “Silt Fence”, per linear foot

Item 5.2 “Super Silt Fence”, per linear foot

Item 5.3 “Straw Wattle”, per linear foot

Item 5.4 “Stone Check Dam”, per Each

Item 5.5 “Stabilized Construction Entrance”, per Each

Item 5.6 “Stormwater Detention Pond”, per lump sum

Item 5.7 “Erosion Control Matting”, per square yard

6.0 REVEGETATION

6.1 Description

This work shall cover all operations incidental to the establishment of vegetation within the limits of construction as shown on the Construction Drawings and any other areas as approved by the WVDEP. This work also includes the furnishing and the application of fertilizer, agricultural limestone and mulch and the furnishing and sowing of seed, all in accordance with these Specifications and as designated herein.

No areas outside the limits of construction shall be disturbed without prior approval from the WVDEP in order to ensure that Right of Entry has been obtained.

Any areas outside the limits of construction, disturbed by the Contractor shall be revegetated by the Contractor at no expense to the WVDEP.

6.2 Materials

6.2.1 Fertilizer

The commercial fertilizer to be used shall consist of a 10-20-10 grade of uniform composition and furnished in standard containers. These containers, in accordance with applicable state and federal laws, must be clearly marked with the following information:

a. Weight
b. Name of Plant Nutrients
c. Guaranteed Nutrients Percentages

Fertilizer rates shall be formulated from soil test results. In the absence of soil testing a rate of 1,000 lbs/acre will serve as a preferred minimum. Fertilizer shall be applied immediately to all areas reaching final grade by one of the two following methods:

a. Apply and incorporate fertilizer during seedbed preparation.

b. Apply fertilizer in hydroseeding mixture following seedbed preparation

6.2.2 Limestone

The lime to be used will be agricultural grade pulverized limestone containing not less than 75% total carbonates. Fineness will be such that not less than 75% will pass through a #100 sieve and 100% will pass through a #10 sieve.

Lime rates shall be at a rate of 4 tons/acre. If soil testing is performed and indicates additional lime is required, the contractor shall increase the rate of lime only after the approval of the engineer.

Lime should be thoroughly mixed into the top six (6) inches of soil.

6.2.3 Seed Mixtures

The variety of grass and legume seed furnished for the project shall bear a tag, in accordance with applicable state and federal laws, with the following information listed:

1. Lot Number
2. Seed Producers Name
3. Percent Purity
4. Percent Germination
5. Date of Germination Testing
6. Weed Seed Content (should be *<0.25%* by weight)

All leguminous seed shall be inoculated with the specified strain of rhizobia which shall be a pure culture of bacteria selected for maximum vitality. No rhizobia shall be used which has passed the expiration date on each package. The inoculant shall be applied at five times the recommended rate except when used in a hydroseeding mixture when the rate will be ten times the recommended rate.

6.2.4 Temporary Seed Mixtures

All stockpiles and other disturbed areas which will require further disturbance in which the additional disturbance will be delayed for a period of three (3) weeks or longer shall be vegetated according to the following guidelines:

Variety of Seed	Spring 3/15-5/15	Summer 5/31-8/15	Fall 8/15-10/15	Winter 10/15-11/15
	Lbs/acre			
Annual Ryegrass (Lolium multiflorum)	20		20	
German Millet* (Setaria italica)		50		
Cereal Rye (Secale Cereale)				90

*DO Not Use Japanese Millet

All areas to be temporarily seeded which are to be redisturbed shall be fertilized with 500 lbs/acre of 10-20-10. All areas reaching final grade to be temporarily seeded shall be fertilized according to Section 6.2.1. Lime shall be applied according to Section 6.2.2 and mulch according to Section 6.2.7.

6.2.5 Permanent Seed Mixtures

Permanent vegetation shall be established on all areas reaching final grade or other areas not likely to be destroyed by further construction activities. Any areas that reach final grade between May 31 -August 15 or October 15 - March 15 shall be seeded with the appropriate temporary seed mixture according to Section 6.2.4. These areas shall then be reseeded with a permanent seed mixture, without Annual Ryegrass, during the next defined seeding period according to this section. The actual date of permanent seeding will require the WVDEP's approval.

Variety of Seed	Spring 3/15-5/15	Fall 8/15 – 10/15
	Lbs./acre	
Orchardgrass (Dactylis glomerata)	15	15
Birdsfoot Trefoil (2) (Lotus corniculatus)	15	15
Red Clover (Trifolium pratense)	10	10
Annual Ryegrass (Lolium multiforum)	15	15
Bicolor Lespedezal	1	1
Foxtail Millet Or Hairy Vetch (3) (Vicia Villosa) or Winter Wheat	12 5 20	12 5 20

1. Seed-rate suggested is for Pure Live Seed (PLS) in lbs/acre.
2. Herbaceous legumes must be treated with the appropriate bacterium before seeding. On areas which are steeply sloping (Steeper than 1.7:1) or slide prone substitute Crownvetch (Coronilla varia) at 20 lbs./acre for Birdsfoot Trefoil.

6.2.6 Lawn Seed Mixture

Existing lawn/mowed areas disturbed during construction shall be reseeded using the following mix.

Rate	Seed	Minimum	Specifications
Lb/1000 sq. ft.	Variety	% Purity	%Total Germination
0.45	Red Fescue (Pennlawn)	98	85
0.90	Kentucky Bluegrass	85	75
0.70	Merion Bluegrass	90	75
0.20	Annual Ryegrass*	95	85

*Use Annual ryegrass only in mixtures seeded after August 1 and May 15.

6.2.7 Mulch Material

Straw

Straw mulch shall include baled wheat or oats straw or baled grass hay. Straw mulch shall be dry and reasonably free of weed seeds, sticks or other foreign material. Straw mulch shall be applied at a rate of 2 tons/acre. The straw mulch shall be anchored with 100 gallons/acre asphalt emulsion or 750 lbs/acre wood cellulose fiber. No grass hay should be used for mulch on the existing lawn/mowed areas.

Wood Cellulose Fiber

Wood cellulose fiber may be used only on slopes steeper than 2:1. The rate of application shall be 1,500 lbs/acre. A mulch for use with the hydraulic application of seed, fertilizer and lime shall consist of wood cellulose fiber. It shall be processed in such a manner that it will contain no growth or germination inhibiting factors and shall be dyed green. It shall be manufactured in such a manner that (1) after addition and agitation in slurry tanks with fertilizers, lime, seeds, and water, the fibers in the material will become uniformly suspended to form a homogeneous slurry and (2) the material, when hydraulically sprayed on the ground, will form a blotter-like ground cover impregnated uniformly with seed, will allow rainfall to percolate to the underlying soil.

The wood cellulose fiber shall be supplied in packages having a gross weight not to exceed 100 pounds. Weight specifications of this material from suppliers, and for all applications, shall refer only to air dry weight of the fiber material. Air dry weight is based on the normal weight standard of the Technical Association of the Pulp and Paper Industry for Wood Cellulose and is considered equivalent to 10 percent moisture. Each package of the cellulose fiber shall be marked by the manufacturer to show the air dry weight content.

6.2.8 Water

Water shall be reasonably free of injurious and other toxic substances harmful to plant life. The source of water is subject to the approval of the WVDEP.

6.3 Construction Methods

All revegetation activities shall be conducted immediately following completion of final grade so as to utilize the fine soil material as a seedbed before this material is lost via subsequent rainfall.

On sites where appropriate equipment can operate the seedbed shall be prepared by breaking up surface crusts and loosening the soil material to a minimum of six (6) inches. Discing, harrowing, cultipacking or other acceptable tillage operations may be used to prepare the seedbed. On sites where appropriate equipment cannot operate, the seedbed shall be prepared by "tracking in" with a dozer or scarifying by other approved methods. Rocks larger than six (6) inches in diameter, trash, weeds and other debris that will interfere with seeding or maintenance shall be removed or disposed of as approved by the WVDEP. Seedbed preparation shall be suspended when soil moisture conditions are not suitable for the preparation of a satisfactory seedbed as determined by WVDEP. All yard/mowed areas shall be hand raked with all rocks 2" diameter and larger removed.

Seedbed preparation and seeding shall take place progressively as various regraded areas are brought to final grade.

All seeding operations shall be performed immediately following seedbed preparation in such a manner that the seed is applied in the specified quantities uniformly on the designated areas.

Seed application shall consist of approved hydroseeding methods where feasible. Any seed left in hydroseeder overnight shall be reinoculated before that seed shall be applied. Other methods of seed application may be utilized for site-specific reasons when approved by the WVDEP.

Any area failing to establish a vegetative stand due to weather or adverse soil conditions shall be reseeded, relimed, refertilized and remulched as approved by the WVDEP.

The Contractor shall maintain all seeded areas until final acceptance of the project. All areas shall be protected from any further equipment traffic and any damaged areas shall be repaired and reseeded. Maintaining seeded areas shall consist of watering, refilling, refertilizing, reliming, reseeding and remulching erosion gullies and all bare areas.

A second and third seeding will be applied as needed, or as approved by the WVDEP.

Second Step Seeding

The second step seeding will take place during the first defined seeding period following the initial seeding. No payment shall be made for second step seeding, this work is part of the contract if completed before the final inspection, or shall be considered warranty if completed after the final inspection. The following shall be used as a guide for second step application:

a. For areas with less than a 50 percent stand or subject to severe erosion, apply the complete amount of seed, fertilizer, lime and mulch as specified.
b. For areas with over 50 percent stand apply one half the original fertilizer, lime and seed. If erosion is a problem, apply one half the original mulch specified in Section 6.2.9.

Third Step Seeding

The third step seeding shall consist of spot applications on areas not showing a satisfactory stand. The seeding shall take place at the next defined seeding period following the second step application. The quantity of material to be used shall be determined on the same basis as for the second step application.
Second and third step seeding shall be considered part of the contract if completed before the final inspection or considered warranty if completed after the final inspection.

6.4 Method of Measurement

The method of measurement for revegetation will be to the plan view acre measured and rounded to the nearest whole acre. Payment to include all temporary seeding, lime, fertilizer, seed and mulch for the first seeding only. Submittal of lime, fertilizer and seed tickets shall be required prior to payment. Subsequent seeding will not be measured or paid for but will be considered incidental to initial seeding.

The Contractor shall be paid only for those areas disturbed and revegetated during operations necessary for completion of the work. The quantity shall not include areas disturbed for storage facilities and staging areas unless prior approval was obtained from the WVDEP. No payment shall be made for any seeding conducted after the final inspection; this work is considered warranty.

6.5 Basis of Payment

The quantities of work done will be paid at the contract unit price bid as listed below, which price and payment shall be full compensation for doing all the work herein prescribed in a workmanlike and acceptable manner; including the furnishing of all labor, materials, tools, equipment, supplies, and incidentals necessary to complete the work.

No payment will be made for seeding after the initial seeding. All work done after initial seeding will be done as maintenance of a completed phase of work or as warranty work after the final inspection.

6.6 Pay Items

Item 6.0 “**Revegetation",** per plan view acre

7.0 DRAINAGE STRUCTURES

7.1 Description

Work in this Section shall be performed in accordance with the Plans and as specified herein. The work shall include, but is not limited to, the following:

a. Installation of temporary site drainage, at the discretion of the Contractor or as directed by the WVDEP. All drainage structures shall be constructed from the downstream point up. A plan for constructing ditches shall be submitted to WVDEP for approval prior to commencing this work.

b. Installation of permanent surface and subsurface drainage systems.

Permanent drainage items include drainage channels, low water crossings, and underdrains with cleanouts and conveyance pipes if determined necessary. Work performed under this item shall consist of furnishing all labor, equipment and materials necessary to construct the drainage structures shown on the drawings

7.2 Materials

7.2.1 Excavated Material

Shall consist of in place natural ground and rock. All excavation shall be considered incidental to placement of drainage structures.

7.2.2 Riprap for Ditches

This material shall consist of sound, non acid producing, durable limestone or sandstone from a WVDEP approved source. Dolomitic limestone and Shale shall not be used on this project.

The Contractor should be aware that no provisions have been made to obtain rock on site. All rock riprap used throughout the project shall consist of locally available, commercially purchased, or on-site durable stone meeting the following requirements. Surface mine rock meeting requirements will also be considered for use. The rock riprap shall have a maximum weighted loss of thirty percent when subjected to five (5) cycles of the Sodium Sulfate Soundness Test – ASTM C88 (ASTM C88-99a Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate), as modified by the American Association of State Highway and Transportation Officials (AASHTO) T-104. The use of on-site rock materials for riprap may be permitted with prior approval from the WVDEP. In order to be considered for use as riprap, the rock shall be subjected to laboratory testing and is required to be certified by the testing laboratory as non-acid producing. A certification on sodium sulfate soundness test shall be submitted to the WVDEP prior to delivery. Riprap for Ditches shall range in nominal diameter from 3 inches to 18 inches, with 50% of the rock 12 to 18 inches, 25% of the rock 6 to 12 inches, and 25% of the rock 3 to 6 inches. All rock borrow areas must be approved by the WVDEP, and the Contractor must provide a reclamation plan for approval. The use of all rock borrow areas located outside of construction limits, or

located inside construction limits requiring the movement of rock from one property owner to another, shall require the Contractor to obtain from the property owner a right-of-entry agreement in which the property owner indemnifies and holds the WVDEP harmless from any injury or damages whatsoever resulting from the use of property.

7.2.3 Grout

Grout to be used in the grouted riprap ditch shall consist of a cubic yard (CY) mixtures as follows
Cement-470lbs
Fly Ash -220lbs
Water- 316lbs
Air entrainment 6% +/- 2%
Sand- 2676lbs
Rheobuild 1000 (as need to achieve the required slump and strength
The amount of water shall be approved or as designated by WVDEP.

The minimum required compressive strength of the grout shall be 2000 psi @ 28 days. All testing shall be the responsibility of the contractor as part of the specifications. Two sets (4 cylinders) of test cylinders per day shall serve as a minimum. Grout test cylinders shall be made and tested in general accordance with ASTM C-31 and C-39 respectively. One cylinder shall be tested at 7 days age, two test cylinders shall be tested at 28 days age, and one cylinder shall be held as a spare.

The acceptability of the grout will be determined by the above laboratory tests and/or visual inspection as required by the Department. Grout specified on the basis of compressive strength will be considered satisfactory if the average of all strength test results equal or exceed the specified strength and no individual strength test falls below the required strength by more than 500 psi.

7.2.4 Geotextile

Geotextile shall consist of Thrace-LINQ 140EX, or Engineer approved equal. The geotextile shall be free of any chemical treatment or coating which reduces permeability, and shall be inert to chemicals found in the soil and water at the site. The geotextile shall be furnished in a protective wrapping which shall protect the geotextile from ultraviolet radiation and from abrasion due to shipping and handling. Immediately following receipt of geotextile on the job site, the geotextile liner shall be inspected and stored in a clean dry area where it will not be subject to mechanical damage or exposure to moisture or direct sunlight. The geotextile shall not be exposed to sunlight for a period of greater than two weeks.

7.2.5 Stone for Underdrains

Stone for the Underdrains shall consist of 3” to 6” Non-Calcareous stone from a WVDEP approved source. The stone shall have a maximum weighted loss of 30% when subjected to five (5) cycles of the sodium sulfate soundness test as determined by ASTM C-88.

7.2.6 Pipe for Underdrains

The pipe for the underdrains shall be 8" I.D. SDR 35 PVC pipe with 1" perforations, and fittings. Pipe fittings shall be produced to the manufacturer's specifications to result in proper installation. The Contractor shall join the pipes in a method approved by the Engineer.

7.2.7 Conveyance Pipe

The conveyance pipe shall be 8" I.D. SDR 35 PVC non-perforated pipe. The Contractor shall provide all necessary pipe fittings required for a proper installation.

7.2.8 Polyethylene Pipe

Polyethylene pipe shown on the drawings shall be high-density polyethylene as manufactured by Hancor, Inc. Findlay, Ohio or an engineer-approved equal. HDPE corrugated pipe shall be smooth interior, and shall conform to AASHTO M294 Type S. The capacity of the pipe if installed in accordance with the manufacture's requirement will support an H-20 highway loading. The contractor is therefore cautioned that if equipment used in reclamation activities exceeds this loading the contractor shall take all measures as necessary to protect the culverts from damage.

7.2.9 Modified Type G Drop Inlet

The Type G Modified Drop Inlet shall conform to WVDOT Specifications Section 605 to the dimensions shown on the Detail Sheets.

7.2.10 Wingwall for 24"Pipe

The wingwall constructed at the upstream end of the Pipe culvert shall be constructed in accordance with the WVDOH Standard detail Sheet DR2 for Pipe Culvert Wingwalls Sheet 1. The concrete material for construction of the headwall shall conform to WVDOH Class "B" concrete. The reinforcing steel for the headwall shall conform to the requirement of Section 709.1 of the WVDOH Standard Specifications for Roads and Bridges.

7.3 Construction Methods

7.3.1 Ditches

7.3.1.1 All Drainage structures shall be constructed as shown on the Plans or as directed by WVDEP. The ditches shall be excavated to the lines and grades shown on the Plans. Final grading shall be performed to eliminate any irregularities in the grade which might impound water.

7.3.1.2 The excavation shall be done in a safe and careful manner. Construction shall begin at the outlet end so that ponding and wet excavation conditions can be held to a minimum. Excavation should be as close to the neat line installation detailed as possible.

7.3.1.3 Compacted earth fill necessary shall be placed in twelve (12) inch loose lifts and compacted. The soil shall be tested in accordance with the provisions of ASTM D 698 (Standard Proctor). The acceptable compaction for the top two (2) feet of fill immediately beneath the drainage structure shall be 95% as determined by this testing. The moisture content shall be ±3 percent from optimum at the time compactive effort is applied. The frequency of compaction tests shall be as approved by the WVDEP Representative; however a minimum of one compaction test per day or one test per every 500 lineal feet of drainage channel is required. Fill foundation areas shall be stripped of sod and topsoil, and the top eight inches scarified and compacted prior to placement of the fill. Fill benches shall be constructed to allow placement of fill in horizontal layers. Fill bench construction or fill foundation preparation will be considered incidental to the construction of drainage structures.

7.3.1.4 No additional compensation shall be considered for rock excavation. All areas disturbed during construction of the ditches shall be revegetated in accordance with Section 6, "Revegetation", of these Specifications.

7.3.1.5 Where ditches are to receive riprap, the subgrade shall be excavated such that final grades will meet those shown on the drawings, and the required depths are achieved. The subgrade shall be proof-rolled before placing riprap. If coal refuse is encountered at any of the ditch excavations, a 12 inch soil layer shall be placed between the coal refuse and the riprap.

7.3.1.6 The final location of the drainage structures may be adjusted by the WVDEP in the field to minimize the disturbed area, or as field conditions require.

7.3.1.7 The areas to receive drainage structures shall be cleared and grubbed in accordance with Section 4.0 of these Specifications.

7.3.1.8 Excavation for all structures is unclassified and considered incidental to regrading and drainage structure installation; no additional compensation will be considered for rock excavation. All areas disturbed during construction of the ditches will be revegetated in accordance with Section 6 of these specifications. Excess material from ditch excavations may be used elsewhere on the project as fill material.

7.3.1.9 Riprap shall be placed to its required thickness in one operation without damaging or displacing the underlying material. Excess handling of riprap materials causing break down of these materials will not be permitted. Riprap shall be placed in accordance with Section 218.3.2, West Virginia Department of Highways Standard Specifications for Roads and Bridges. Stone shall be delivered, stockpiled and placed in such a manner as to keep the material from being segregated. It is anticipated that some placement by hand will be required.

7.3.1.10 Prior to placement of the grout on the riprap, Riprap shall be free of sticks, leaves, soil, trash and debris prior to placing the grout. The riprap materials shall be dampened by spraying it with water from an approved source. The

grout shall penetrate the full thickness of the riprap. The contractor shall provide laborers to tamp grout into the voids between the riprap. The surface of the ditch shall be broom finished smooth. The Contractor shall use pumps or other measures to prevent flowing water from damaging the freshly grouted ditch. Flowing water shall not be allowed in the grouted ditch until the grout is sufficiently cured so that it will not be damaged. Water will not be allowed to flow under the grouted channel. Grout Keys shall be installed at locations on the plan and profile sheets and be installed in accordance with the details of this plan set.

7.3.2 Underdrains

7.3.2.1 Underdrains, if determined necessary, will be constructed at the location designated and approved by WVDEP. The dimensions of the underdrains shall be as shown on the Drawings. The trench shall be relatively smooth and free of sharp protrusions, and depressions. Excavated material shall be stockpiled and dried. The backfill is to be made with this material if the WVDEP deems this material as acceptable. Excavation shall be made by cutting a trench into the ground to the elevation where the underdrain is to be placed. A portion of the underdrains may require excavation through rock. No blasting will be allowed.

7.3.2.2 All trenches will be filled in at the end of each day's work with no trench open overnight. Water must be removed until the water level is below the area to be excavated.

7.3.2.3 The geotextile shall be placed in the trench prior to stone placement. The geotextile shall be placed in such a manner as to cover the bottom and sides of the trench. Excess material shall be provided to be folded over the stone and provide a 1 foot overlap.

7.3.2.4 A minimum 4 inch bedding layer of fine mineral aggregate shall be placed in the bottom of the trench. The underdrain pipe shall be firmly embedded in the bedding material. The perforated pipe shall be placed with the perforations down. After placement of the pipe, 3" to 6" stone shall be placed until the underdrain is filled to the required depth. The stone for the underdrains shall be placed in such a manner so as to avoid damaging the geotextile. The contractor shall limit the drop height of stone to minimize the likelihood of damages. Any damages resulting from the placement of stone shall be repaired by the contractor at his own expense and to the satisfaction of the WVDEP.

7.3.3 Conveyance Pipe

A minimum 4 inch bedding layer of fine mineral aggregate shall be placed in the bottom of the trench. The conveyance pipe shall be firmly embedded in the bedding material. After placement of the pipe, soil backfill shall be placed in maximum 12" lifts and compacted to 95% of its Standard Proctor Density.

7.3.4 HDPE Pipe Culvert

The Contractor shall install 24-inch diameter HDPE pipe at the locations shown on the Plans. The inlet ends of the HDPE pipes shall begin at the locations shown on the Plans.

The Contractor shall install the HDPE pipe in accordance with the manufacturer's recommendations. The pipe trench and installation shall be in accordance with the dimensions indicated on the Detail Sheets. The Class 1 Aggregate backfill material used shall be compacted to 95% of the maximum dry density as determined by ASTM D698.

7.3.5 Modified Type "G" Drop Inlet

Modified Type 'G' drop Inlets shall be constructed as shown on the Reclamation Plans in conformance with the details.

7.3.6 Wingwall for 24" Pipe

The wingwall constructed at the downstream end of the Pipe culvert on the pond access road shall be constructed in accordance with the attached plans and details.

7.4 Method of Measurement

7.4.1 Type I Riprap Ditch

The method of measurement for the 12' x 3' Triangular Type I Riprap Ditch shall be per linear foot (Slope Distance) and include the cost of excavation, waste disposal, riprap, and all other items necessary for proper construction.

7.4.2 Type II Grouted Riprap Ditch

The method of measurement for the 12' x 3' Triangular Type II Grouted Riprap Ditch shall be per linear foot (Slope Distance) and include the cost of excavation, waste disposal, riprap, grout, grout keys, inlet protection and all other items necessary for proper construction.

7.4.3 Type III Grouted Riprap Ditch

The method of measurement for the 2' x 8' Triangular Type III Grouted Riprap Ditch shall be per linear foot (Slope Distance) and include the cost of excavation, waste disposal, riprap, grout, grout keys and all other items necessary for proper construction.

7.4.4 Underdrain

The method of measurement for the Underdrain shall be per linear foot, measured along the centerline of the pipe in the trench, and include the cost of excavation, waste disposal, rock, pipe and fittings, cleanouts, filter fabric, conveyance pipe, and all other items necessary for proper construction.

7.4.5 Underdrain Conveyance Pipe

The method of measurement for the Underdrain Conveyance Pipe shall be per linear foot, measured along the centerline of the pipe in the trench, and include the cost of excavation, waste disposal, rock, pipe and fittings, and all other items necessary for proper construction.

7.4.6 24" HDPE Pipe Culvert

The method of measurement for the 24" diameter culvert shall be measured on a linear foot basis of pipe installed. This measurement shall include all excavation, pipe bedding, pipe, backfill materials and compaction

7.4.7 Modified Type 'G' Drop Inlet

The method of measurement for the Type "G" and Modified Type 'G' Inlet shall be per each including all items necessary for the installation of the inlet per the drawings.

7.4.8 Wingwall for 24" Pipe Culvert

The method of measurement for the Wingwall for the 24" diameter culvert shall be measured as a unit. This measurement shall include all excavation, bedding, concrete, reinforcing steel, forming and all other items, materials or work necessary for the acceptable Wingwall construction.

7.4.9 Bench to Channel Transition

The method of measurement for the Bench to Channel Transition shall be per each including all items necessary for the installation of the Transition per the drawings.

7.5 Basis of Payment

7.5.1 Type I Riprap Ditch

Payment shall be per linear foot of 12' x 3' 'Deep Triangular Type II Riprap Ditch acceptably constructed.

7.5.2 Type II Grouted Riprap Ditch

Payment shall be per linear foot of 12' x 3' 'Deep Triangular Type II Grouted Riprap Ditch acceptably constructed.

7.5.3 Type III Grouted Riprap Ditch

Payment shall be per linear foot of 8' x 2' 'Deep Triangular Type IV Grouted Riprap Ditch acceptably constructed.

7.5.4 Underdrain

Payment shall be per linear foot of Underdrain acceptably constructed.

7.5.5 Underdrain Conveyance Pipe

Payment shall be per linear foot of Underdrain Conveyance Pipe acceptably constructed.

7.5.6 24" HDPE Pipe Culvert

The basis of payment for the 24 inch HDPE Culvert per linear foot installed and accepted.

7.5.7 Modified Type 'G' Drop Inlet

The basis of payment for the Modified Type "G" Drop Inlet shall be per each shall include all excavation, bedding, concrete, reinforcing steel, forming and all other items, materials or work necessary for the acceptable construction.

7.5.8 Wingwall for 24" Pipe Culvert

The basis of payment for the Wingwall for the 24" diameter culvert shall be measured as a unit. This payment shall include all excavation, bedding, concrete, reinforcing steel, forming and all other items, materials or work necessary for the acceptable construction.

7.5.9 Bench To Channel Transition

The method of measurement for the Bench to Channel Transition shall be per each and include the cost of excavation, waste disposal, riprap, and all other items necessary for proper construction.

7.6 Pay Items

Item 7.1 "Type I Riprap Ditch", per linear foot

Item 7.2 "Type II Grouted Riprap Ditch", per linear foot

Item 7.3 "Type III Grouted Riprap Ditch", per linear foot

Item 7.4 "Underdrain", per lineal foot

Item 7.5 "Underdrain Conveyance Pipe", per lineal foot

Item 7.6 "24 Inch HPDE Culvert", per linear foot

Item 7.7 "Modified Type "G" Inlet", per each

Item 7.8 "Wingwall for 24″ Pipe Culvert″, per each

Item 7.8 "Bench to Channel Transition″, per each

8.0 UNCLASSIFIED EXCAVATION

8.1 Description

Work performed under this section shall consist of furnishing all labor and equipment necessary to excavate and redeposit this material to the grades and in the areas indicated on the drawings. The work to be performed consists of the completion of all excavation, trenching, water supply and pumping, quenching of coal refuse and material placement, soil cover placement and site regrading. Quenching will consist of the excavation of the burning material and the application of water. Once quenched, the coal refuse material will be replaced in the excavation area in the manner outlined herein and as approved by the Engineer. This work shall also consist of providing an adequate source of water and all equipment necessary to complete the project. The Contractor shall supply all pumps, tanks, hoses, nozzles, trucks, and other equipment necessary to provide an adequate water supply to perform this work through the duration of the project. This shall include the effort and cost of hauling water if an adequate water supply is not available on site. No work is to commence in the refuse fire area/s until all pumps, tanks, water and hoses are on site and operational. This work shall also include the excavation, handling and disposal of potentially contaminated soils within the work area.

8.2 Safety and Environmental Protection

The Contractor shall obey all Occupational Safety and Health Administration (OSHA) requirements and Mine Safety and Health Administration (MSHA) requirements pertaining to the excavation of coal refuse material. All appropriate State and Federal water quality requirements shall also be adhered to in the performance of the work.

The Contractor shall take all measures necessary to minimize smoke and dust production that could affect the occupants of the nearby residences or disrupt traffic along local roads.

Any material that is found to be in excess of 140 degrees Fahrenheit shall be considered burning material and shall be handled accordingly. With respect to fire and safety control, the following shall be adhered to during the abatement activities:

Extreme caution shall be taken when heavy equipment is operating near or on the burning refuse embankment. The Contractor shall thoroughly examine the areas to be worked prior to moving equipment into the area.

All material in excess of 140 degrees Fahrenheit will be quenched with water to reduce its temperature and control dust levels prior to excavation. No material shall be removed when it contains visible flames.

The Contractor shall have available on site at all times a minimum of two (2) carbon monoxide (CO) detectors and a methane (CH_4) detector and shall check for the gases on a regular basis in areas where equipment operators and other workers might be exposed. Regular checks for CO shall also be made in the residences as required by the Engineer. The supervisor shall use an MSHA-approved CO detector for these purposes. No separate payment shall be made for this work. The equipment operators shall at all times have a CO detector in the cab of the machinery being operated and shall monitor for CO on a constant basis.

The Contractor shall be capable of providing at least 200 gallons of water per minute to the extinguishment area. A fog nozzle and an adjustable nozzle shall be utilized to deliver the maximum amount of water to the refuse areas at any time during excavation.

As an added safety precaution, a storage tank truck with a minimum (or as required by the Engineer) of 750 gallons of water shall be on-site at all times and shall be equipped with hoses and pumps necessary to deliver water to the burning areas. The tank must be kept full at all times. The system must be available and in working order at all times.

The Contractor will be required to take the protective measures deemed necessary to protect any structures or improved property at the site from damages of any kind. Any damages shall be the sole responsibility of the Contractor and shall be performed to the satisfaction of the WVDEP.

8.3 General

8.3.1 Material Removal

Material removal (excavation) shall consist of the required removal of materials from the areas shown and the sloping and finishing of the areas to the required lines, grades and cross-sections. Payment shall be based on cubic yards of excavation.

The reclamation approach described in these Contract Documents is intended to provide a lasting, stable configuration. Although the Project incorporates previously proven slope stabilization techniques, the Contractor is required to exercise care to avoid intermediate site conditions which may result in unstable situations during the construction process.

The Contractor must utilize material removal techniques which are generally considered to be conducive to retaining slope stability, including but not limited to working the slopes from the top to the bottom to preclude undermining and maintaining the work areas in a fashion which will not induce instability. Additionally, slopes once disturbed shall be brought to the design template as soon as practicable and shall be protected in accordance with Section 5.0 and 6.0 of these Technical Specifications, if applicable. The conditions set forth in this sub-section shall firmly apply until the WVDEP has accepted the area where material has been removed as being satisfactorily complete. The WVDEP may not accept any area as to being satisfactorily complete if an adjacent work area remains in a condition which may cause damage to the subject area.

8.3.2 Material Placement

Material placement shall consist of performing all operations in connection with the placing of all materials in fill areas (to include preparation of surface, spreading and compaction) to the lines and grades shown on the Drawings. No burning refuse (defined as greater than 140°F) and/or no combustible material shall be placed in fill areas.

All areas where material is to be placed shall be constructed to the lines, grades and cross-sections indicated on the drawings, unless otherwise approved by the WVDEP.

The Contractor shall maintain and protect areas where material is to be placed in a satisfactory condition at all times until final completion and acceptance of all work under

the Contract. If in the opinion of the WVDEP the hauling equipment causes horizontal shears or slickened sides, rutting, quaking, heaving, cracking or excessive deformation where material is placed, the Contractor shall limit the type, load or travel speed of the hauling equipment on the areas where material is placed. During material placement the Contractor shall remove from the areas of fill any material which the WVDEP considers objectionable and shall also dispose of such material and refill the areas as approved, all at no additional cost to the WVDEP.

The Contractor shall have satisfied himself by personal visit to the site or by such other means as he may have chosen, as to the actual conditions and requirements of the work. No allowance will be made for any claim that the bid was based upon incomplete information as to the nature and character of the site, the work involved, or for materials of an unexpected character found in excavations.

All Contractors and perspective bidders must receive permission from the Landowner before obtaining any subsurface samples and/or test borings holding WVDEP harmless against any injury or damage whatsoever resulting from this use of the property.

8.3.3 Soil Cover

Soil cover material shall be naturally occurring topsoil from the excavations or from the potential borrow areas. This material shall be free of all rocks six (6) inches in size or larger.

Small quantities of soil cover material may be encountered during excavation, but these quantities may not be sufficient to provide soil cover for all regraded areas. The Contractor shall obtain soil cover material from the potential borrow areas or from additional offsite soil borrow areas as necessary. All offsite borrow shall be performed in compliance with the conditions contained herein and also in accordance with specifications Special Provision 1.07.

A potential borrow area is indicated on plans. The borrow area shown may not have sufficient quantity for project. In that event the additional borrow areas are needed it shall be the responsibility of the Contractor to obtain such areas, at no expense to the WVDEP, and in accordance with any applicable local, state, and/or federal regulations including compliance with NEPA requirements (See Special Provision 1.07 and section 4.3.4 for NEPA Compliance Schedule). All additional borrow areas must be approved by the WVDEP and the Contractor must provide a reclamation plan for approval. In addition, for all additional borrow areas outside the construction limits, or located inside construction limits requiring movement of soil from one property owner to another, the Contractor must obtain from the property owner a right-of-entry agreement in which the property owner indemnifies and holds the WVDEP harmless from any injury or damages whatsoever resulting from the use of property.

8.4 Construction Methods

8.4.1 Excavation (General)

Material excavation shall consist of the required removal of materials from the areas shown and the sloping and finishing of the areas to the required lines and grades as shown on the drawings. The slopes may be varied only by permission of the WVDEP. Any excavation beyond planned grades will not be paid for unless prior authorization is obtained from the Engineer. Slopes shall be trimmed neatly to present a uniform surface, free from hollows and protrusions and loose or overhanging rocks. The tops of all slopes shall be rounded to form a smooth, uniform transition to the existing ground. Areas cut to grade in refuse are to be undercut one foot below the final grades shown on the reclamation plan with final grades achieved with soil cover material.

No material shall be placed in any area until the area has been cleared, grubbed, and stripped as specified; and the surface has been approved by the WVDEP. The Contractor shall keep the area free from water or unacceptable materials after placement operations have started. All slopes shall be benched before fill material is placed. Where benching is not required the areas to receive fill shall be scarified before placement of fill.

The Contractor shall place material in areas of fill in a controlled manner in horizontal lifts extending the entire length and width of the area where material is to be placed. The thickness of each lift shall not exceed twelve (12) inches before compaction. No fill material shall be placed on frozen material, and no frozen material shall be used as fill material. Rocks larger than 12-inch diameter shall not be incorporated in fill material.

Compaction to a minimum of 90 percent of the maximum dry density as determined by the standard proctor test, ASTM D 698, shall be obtained utilizing available spreading and hauling equipment or compacting equipment. Field density testing shall be by sand cone method (ASTM D 1556) or by nuclear gauge method (ASTM D 2922). Tests shall be performed at a minimum 1 test per day, or as directed by the Engineer. Testing shall be performed by the Contractor or by an independent testing company. In either case the cost will be the Contractor's responsibility as part of the Quality Control Item.

All fill material used for the project shall contain sufficient moisture to achieve the required compaction. The moisture content shall be ±3 percent from optimum at the time the compactive effort is applied.

Drainage structures shall be constructed to the lines and grades as shown on the plan sheets and/or cross-sections. All excavation necessary for construction of these structures shall be incidental to the construction of each drainage structure and included in the unit bid cost item for each drainage structure.

The Contractor shall make every reasonable effort to construct the project uniformly. No payment will be made for any earthwork performed outside the construction limits approved by the WVDEP. No extra material shall be removed or placed outside of these limits without permission.

Material removal carried below the indicated depths, except when approved by the WVDEP, shall be replaced with material satisfactory to the WVDEP. Additional payment will not be made for unauthorized material removal nor for any backfilling necessitated thereby.

The Contractor shall select equipment of such type, size, and quantity to perform the work efficiently and within the requirements set forth in these Specifications. If it is determined that these Specifications are not being met due to inappropriate equipment, the Contractor shall change his equipment as necessary to bring the work into compliance with the Specifications.

The Contractor shall select compaction equipment that will produce the specified density. Compaction equipment that produces a sealed, slick surface will not be permitted. All compaction equipment must be approved by the WVDEP prior to use. If a sealed, slick surface develops during compaction of the fill, the surface shall be scarified to a depth of 4 inches prior to placement of the next lift.

8.4.2 Excavation (Burning)

The general limits of excavation are outlined in the attached plans. The actual final limits will be determined in the field by the WVDEP. Depth of excavation will be to native soil, non-burning refuse, or rock. Quenched material will be stockpiled, dried, and replaced in the excavation area.

At all times, water shall be applied to the excavated areas by use of the 200 GPM (rated) pump hoses and nozzles in a controlled matter. At no time is excavation to proceed under dry conditions when fire is present.

All excavated material that is burning or heated beyond 140 degrees Fahrenheit shall be cooled to ambient temperature on the site. Extinguishment of the burning material is to be accompanied by direct spraying of the material or working the material until the temperature has reached ambient air temperature. The Contractor shall at all times provide suitable thermometers for use by his personnel and WVDEP representatives at the site. A minimum of two thermometers shall be provided. The thermometers shall read a minimum of 90^{O}F.

The materials must be extinguished to the satisfaction of the Engineer. Material shall be cooled to the ambient air temperature prior to final placement. In addition, all extinguishment areas shall be checked to ascertain that carbon monoxide is not being produced. If any hot spots are found, additional excavation and quenching will be required. The Engineer may also require the Contractor to mix coal refuse material with incombustible soil material for use in the backfilling operations.

The extinguished refuse material shall be replaced within the excavation limits as approved by the Engineer. It is intended that the final fill configuration match the approximate lines and grades shown on the attached plans or as directed by the Engineer at the time of construction. If these grades cannot be achieved due to material shrinkage, grades will be adjusted with approval of the Engineer. Material shall not be placed on burning, saturated or frozen material. In addition, material shall not be placed on natural

ground that exceeds ambient temperature. The natural ground shall be cooled prior to fill placement.

At the end of each workday, all fill areas shall be regraded to provide positive drainage and compacted as directed by the WVDEP to seal the area from water saturation. Before fill is placed during the next work period, these areas shall be properly scarified and dried before fill placement continues.

8.4.3 Excavation (Contaminated Soils)

A construction observer shall observe soil and refuse moved by heavy equipment within the former refuse disposal area. All soil exhibiting an odor or visual signs of contamination by diesel fuel, oil or semi-volatile organic compounds such as naphthalene or other polynuclear aromatic hydrocarbons (PAHs) shall be placed on a 10 mil HDPE liner. The liner shall be placed over hay bales or other acceptable barrier structures around the perimeter of the liner that will prevent soil or water leaching from the soil or refuse to escape the HDPE liner.

Visual indication of soil contamination is generally a black or dark gray color. The texture of the material may or may not be oily or have a sheen. Coal is obviously black and visual indications will be limited to an oily appearance or a sheen. Odors frequently associated with contamination can be the odor of gasoline, diesel fuel, oil, pungent or an un-natural odor not normally associated with soil or refuse. After the soil has been placed onto the liner, the soil will be covered with HDPE to prevent precipitation from leaching through the stockpiled soil or refuse.

The only way to verify contamination is by laboratory analysis of the suspect materials. Soils to be sampled from the material moved to the HDPE liner should be divided into approximately 300 ton areas by marking the area so that the analysis can be associated with the samples collected for analysis. Each approximately 300 ton area should be sampled for the following constituents:

- Total Petroleum Hydrocarbons (TPH): Gasoline Range Organics, Diesel Range Organics, Oil Range Organics (GRO/DRO/ORO) by EPA Method 8015B.
- TCLP metals by EPA Method SW1311.
- PAHs by EPA Method 8270C.
- Flashpoint.

The laboratory analysis shall be performed by a WVDEP certified laboratory. Sampling protocols shall be performed in accordance with EPA methods contained in SW-846. Analytical results meeting or exceeding any of the following action levels shall be disposed in a properly licensed landfill. Action levels are in accordance with the "West Virginia Guidance Document For Leaking Underground Storage Tank (LUST) Site Assessments And Corrective Actions", August 2001.

- TPH-GRO, DRO or ORO – 100 mg/Kg (parts per million) for any one of the three constituents.
- TCLP metals – used for potential landfilling purposes only.

- PAHs – if any single PAH exceeds 1.0 mg/Kg.
- Flashpoint – used for potential landfilling purposes only.

Soil or refuse that does not meet or exceed any of the action levels is to be placed within the Sugarcamp AML site as non-contaminated material. Application to the landfill for acceptance of the contaminated material is a separate task.

8.4.4 Soil Cover Placement

Prior to placement of soil cover material the regraded area shall be graded to remove all surface irregularities. All regraded areas cut to grade in topsoil or topsoil substitute do not require soil cover. Soil cover shall be applied for a total thickness of **four (4) feet** across the refuse area.

Soil cover material shall neither be frozen nor shall it be placed on frozen ground or under moisture conditions that prevent grading equipment from producing a uniform surface.

After placement, the soil cover material shall be compacted to ensure proper bonding of the soil cover material to the regraded area. Compaction equipment shall be capable of operating on the slopes shown on the contract drawings and shall produce a uniform surface free of ruts and loose soil. No minimum density shall be required for compaction, but soil cover material shall be "tracked in" with on-site equipment. "Tracking-in" shall take place by operating the equipment up and down the regraded slope such that the cleat marks are parallel to the final contours. **Compaction shall be as specified in Section 8.4.1.**

The final grade of the soil cover shall be free of surface irregularities and shall be built to the lines and grades shown on the contract drawings.

As the soil cover material is placed and compacted, it shall be protected from erosion by the methods detailed in Section 5.0 "Sediment Control" and shall also be seeded and mulched in accordance with Section 6.0 "Revegetation".

Upon completion of the work, the borrow area and related disturbance shall be neatly trimmed and all debris and soil disposed of in an acceptable manner. All highwalls created are to be eliminated and final graded soil slopes shall not be steeper than 2H:1V unless otherwise proven to be stable or compatible to the reclamation project. All borrow areas shall require that a reclamation plan be submitted to WVDEP for approval. The borrow areas and related disturbance shall be graded, fertilized, limed, seeded, and mulched in accordance with Section 6.0 "Revegetation" of these specifications.

It shall be the responsibility of the Contractor to obtain, at no expense to the WVDEP, all necessary offsite borrow areas or waste areas in accordance with any applicable local, state, and/or federal regulations including compliance with NEPA requirements. Any borrow or waste areas shall be obtained in accordance with Section 4.3.4 of these specifications.

The Contractor shall maintain and keep in full force and effect insurance to protect and indemnify the Owner and/or his agents or representative, from claims for damages and shall defend all suits at law.

8.5 Method of Measurement

8.5.1 Excavation

The method of measurement for excavated material shall be based on cubic yards removed. This quantity shall be derived from surveyed cross-sections at fifty (50) feet maximum intervals using the average end area method. Surveying shall be incidental to work performed in this section. Cross sections, volume calculations, and compaction tests are to be submitted when applying for excavation payment. There will be no compensation for excavation beyond lines and grades shown on the design cross sections and plans without prior approval from the Engineer. Payment for surveying shall be as indicated in Item 2.0, **"Construction Layout".**

8.5.2 Soil Cover

Soil cover material including hauling, spreading, and compacting shall be measured per plan view acre of area satisfactorily soil covered as surveyed upon completion. Soil if encountered beneath the refuse pile and excavated for soil cover shall not be paid per unclassified but be paid under the per acre soil cover item.

Surveying shall be incidental to work performed in this section. Payment for surveying shall be paid for in Item 2.0, "Construction Layout".

8.5.3 Contaminated Material Disposal

Excavated materials that do not conform to standards to waste on site shall be hauled to a certified landfill. The measurement for this material shall be per ton delivered to a landfill based on certified weight tickets. This shall include all handling, testing, hauling and fees charged by the landfill. No additional payment will be made for materials deemed suitable for disposal on site.

8.6 Basis of Payment

8.6.1 Excavation

Payment for materials excavated to achieve the final grade will be by the unit price bid for **"Unclassified Excavation".**

8.6.2 Soil Cover

The basis of payment for "Soil Cover" shall be paid per plan view acre of area satisfactorily covered with specified soil cover.

8.6.3 Contaminated Material Disposal

The basis of payment for "Contaminated Material Disposal" shall be per ton delivered to approved certified landfill.

8.7 Pay Items

Item 8.1, **"Unclassified Excavation",** per cubic yard

Item 8.2, **"Soil Cover",** per plan view acre

Item 8.3, **"Contaminated Material Disposal",** per ton

9.0 UTILITIES

9.1 Description

This work shall consist of all necessary measures to maintain and protect all utilities within the limits of work specified herein and on the construction drawings. Care shall be taken to protect these locations from the Contractor's heavy equipment during the work.

The Contractor shall be responsible for making all necessary arrangements and/or performing all necessary work to the satisfaction of the affected utility company in connection with any utility disturbances that occur.

The Contractor shall be solely responsible for locating all utilities within the limits of work. All damage made to existing utilities by the Contractor shall be the sole responsibility of the Contractor. In the event damage does occur, the Contractor shall notify the affected Owner and the WVDEP immediately and make or have made all necessary repairs and bear the expenses thereof and resulting damage caused thereby.

9.2 Materials

All materials used for utility related disturbance shall be in accordance with these specifications or as indicated by the affected utility.

9.3 Construction Methods

All work shall be in accordance with these specifications or in accordance with those methods as indicated by the affected utility. In the event that a utility relocation is necessary the contractor shall submit an estimate for the relocation to WVDEP for approval prior to performing the work.

9.4 Method of Measurement

If an unknown utility is encountered the WVDEP will be contacted at once. An attempt to alter the proposed reclamation construction so that it does not interfere with the utility will be made. If this proves impossible, the WVDEP, and the utility will determine the most economical approach at the utility relocation. If it is determined the contractor will move the utility. Payment for utility work will not be a separate pay item, but will be paid per pre-approved contractor invoices only. Permit fees required for any utility work shall be excluded as a pay item.

APPENDIX

TRIAD ENGINEERING, INC.
ST. ALBANS & MORGANTOWN, WEST VIRGINIA
OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sugar Camp Run Burning Refuse
Project Location Summersville WV
Project Manager JSH
Boring No. B-1
Job No. 01-13-0578
Ground Surface Elevation 1891.43

Temp in °F

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	°F SAMPLE Blows /6"	No.	Type	Rec.	RQD
grey shale coal Refuse SURFACE	0.0	0.0					
		5.0	75.2°F				
		10.0	172.4°F				
Coal Refuse		15.0	189.3°				
" "		20.0	196.6°				
" "		25.0	204.8°				
into Brown Cby at 29.0		30.0	174.3°				
		35.0	151.8°				
AR → BTB - 40.0		40.0	139.1°				
		45.0					
		50.0					
		55.0					

Start Date 9-22-13 Hammer Wt. ~~140~~ Lbs. Rock Core Dia. Driller RAL
Finish Date 9-22-13 Hammer Drop N/A Inches Boring Method HSA Helper JE
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
ST. ALBANS & MORGANTOWN, WEST VIRGINIA
OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sosar Camp Run Burning Refuse
Project Location Summersville WV
Project Manager JJH
Boring No. B-2
Job No. 01-13-0578
Ground Surface Elevation 1893.1E

Temp in °/F

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
Grey Shale & Rock Refuse		5.0	149.6 0				
9-22-13		10.0	183.2 0				
		15.0	188.9				
Coal Refuse		20.0	203.0				
		25.0	213.0				
		30.0	229.0				
" "		35.0	230.*				
		40.0	187.5				
		45.0	181.6				
" "		50.0	233.*				
		55.0	260.1				

Start Date 9-22-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAC
Finish Date 9-23-13 Hammer Drop ____ Inches Boring Method ____ Helper JE
Drill Rig TRACK

Ground Water Depth
FIRST NOTED ____ Ft.
AT COMPLETION ____ Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
ST. ALBANS & MORGANTOWN, WEST VIRGINIA
OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sugar Camp Run Burning Refuse Boring No. B-2
Project Location Summersville WV Job No. 01-13-0578
Project Manager SJH Ground Surface Elevation

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	309.0				
Hard to Auser at 63.0		65.0	272.0				
orig?		70.0	196.5				
		75	AR				
BPB -73.0							

Start Date 9-22-93 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAC
Finish Date 9-23-93 Hammer Drop ____ Inches Boring Method HSA Helper JG
Drill Rig TRACK

Ground Water Depth
FIRST NOTED ____ Ft.
AT COMPLETION ____ Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
ST. ALBANS & MORGANTOWN, WEST VIRGINIA
OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sugarcamp Run Burning Refuse
Project Location Summersville WV
Project Manager SJH
Boring No. B-3
Job No. 01-13-0578
Ground Surface Elevation

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0-0			Temp Probe		
Coal Refuse		5-0	166.3 °	1			
		10-0	201.4	2			
		15-0	228.0	3			
		20-0	240.0	4			
		25-0	236.0	5			
		30-0	238.0	6			
		35-0	292.0	7			
		40-0	328.0	8			
		45-0	341.0	9			
		50-0	387.0	10			
		55-0	379.0	11			

Start Date 9-25-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAC
Finish Date 9-26-13 Hammer Drop ____ Inches Boring Method HSA Helper JS
Drill Rig Track

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
ST. ALBANS & MORGANTOWN, WEST VIRGINIA
OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sugarcamp Run Burning Refuse
Project Location Summerville WV
Project Manager JJH
Boring No. B-3
Job No. 01-13-0578
Ground Surface Elevation

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	370.0	12	TEMP probe		
Coal Refuse		65.0	435.0	13			
		70.0	389.0	14			
		75.0	386.0	15			
		80.0	405.0	16			
		85.0	357.0	17			
		90.0	443.0	19			
		95.0	452.0	18			
		100.0	640.0	20			
Hard To Auger AT 105.0		105.0	839.0	21			
Drove Spoon Gray Shale							
AT 110.0		110.0	580.0	22			

Start Date 9-6-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAL
Finish Date 9-26-13 Hammer Drop ____ Inches Boring Method HSA Helper ____
Drill Rig Diedrich

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
ST. ALBANS & MORGANTOWN, WEST VIRGINIA
OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sugar Camp Raw Burning Refuse Boring No. B-4
Project Location Summersville WV Job No. 01-13-0578
Project Manager _____ Ground Surface Elevation _____

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
Coal Refuse		5.0	126.1	1			
		10.0	154.4				
		15.0	207.0				
		20.0	225.0				
" "		25.0	240.0				
		30.0	306.0				
		35.0	290.0				
		40.0	291.0				
" "		45.0	315.0				
		50.0	320.0				
		55.0	315.0				

Start Date 9-26-18 Hammer Wt. _____ Lbs. Rock Core Dia. _____ Driller TAL
Finish Date _____ Hammer Drop _____ Inches Boring Method _____ Helper JE
Drill Rig Track

Ground Water Depth
FIRST NOTED _____ Ft.
AT COMPLETION _____ Ft.
AFTER ____ HRS. _____ Ft.
BACKFILLED _____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
ST. ALBANS & MORGANTOWN, WEST VIRGINIA
OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sopsecamp Run Burning Refuse
Project Location Summersville
Project Manager
Boring No. B-4
Job No. 01-13-0578
Ground Surface Elevation

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	267.0				
COAL Refuse		65.0	315.0				
		70.0	369.0				
" "		75.0	319.0				
		80.0	418.0				
		85.0	303.0				
" "		90.0	316.0				
		95.0	318.0				
9-26-13		100.0	356.0				
9.27.13							
Drilled JE		105.0	595.0				
Helper MJ							
		110.0	462.0				
		115.0	329.0				

Start Date 9-26-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAL
Finish Date ____ Hammer Drop ____ Inches Boring Method ____ Helper JE
Drill Rig TRACK

Ground Water Depth
FIRST NOTED ____ Ft.
AT COMPLETION ____ Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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TEST BORING LOG

Project Name _____ Boring No. B-4
Project Location _____ Job No. _____
Project Manager _____ Ground Surface Elevation _____

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE				
			Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	1200	4/11.0				
AR @ 121.0'							

Start Date _____ Hammer Wt. _____ Lbs. Rock Core Dia. _____ Driller _____
Finish Date _____ Hammer Drop _____ Inches Boring Method _____ Helper _____
Drill Rig _____

Ground Water Depth
FIRST NOTED _____ Ft.
AT COMPLETION _____ Ft.
AFTER ____ HRS. _____ Ft.
BACKFILLED _____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sugar Camp Run Burning Refuse Boring No. B-5
Project Location Summerville WV Job No. 01-13-0578
Project Manager STA Ground Surface Elevation 1879 ft

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
Brown clay into coal Refuse at 6.0		5.0	69.3	1	Temp Probe		
		10.0	155.0	2			
Course coal Refuse		15.0	174.1	3			
" " "		20.0	191.0	4			
		25.0	190.8	5			
		30.0	197.6	6			
		35.0	207.0	7			
" " "		40.0	209.0	8			
		45.0	203.0	9			
		50.0	259.0	10			
" " "		55.0	211.0	11			

Start Date 10-1-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAC
Finish Date 10-1-13 Hammer Drop ____ Inches Boring Method HSA Helper RA
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
ST. ALBANS & MORGANTOWN, WEST VIRGINIA
OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sugar Camp Run Burning Refuse
Project Location Summersville WV
Project Manager SJH
Boring No. B-5
Job No. 01-13 0578
Ground Surface Elevation 1879.95

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	280.0	12	Rock Plug		
Coal Refuse		65.0	317.0	13			
		70.0	339.0	14			
		75.0	348.0	15			
		80.0	360.0	16			
		85.0	344.0	17			
		90.0	398.0	18			
		95.0	635.0	19			
Hard TO Auger AT 97.0		100.0	279.0	20			
Drove Spoon AT 105.0		105.0	1035.0	21			
Brown Clay INTO Shale (HDT) AR		110.0	1016.0	22			
BTB 110.0							

Start Date 10-1-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAC
Finish Date 10-1-13 Hammer Drop ____ Inches Boring Method HSA Helper RA
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
ST. ALBANS & MORGANTOWN, WEST VIRGINIA
OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sugar Run Burning Refuse
Project Location Summersville WV
Project Manager JTH
Boring No. B-6
Job No. 01-13-0578
Ground Surface Elevation 1863.53

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0	171.1	1	Temp Probe		
Fine Coal Refuse		5.0	169.9	2			
		10.0	195.2	3			
" "		15.0	195.2	4			
		20.0	232.0	5			
		25.0	225.0	6			
" "		30.0	238.0	7			
		35.0	259.0	8			
		40.0	291.0	9			
Course at 50.0		45.0	371.0	10			
Harder to Auger at 48.0		50.0	244.0	11			
Brown Clay in Auger Cuttings		53.0	618	12			

Start Date 10-2-13 Hammer Wt. ____ Lbs.
Finish Date 10-2-13 Hammer Drop ____ Inches
Rock Core Dia. ____
Boring Method HSA
Driller RAL
Helper SA
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Temp Probe

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
ST. ALBANS & MORGANTOWN, WEST VIRGINIA
OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sugar Camp Run Burning Refuse
Project Location Summersville WV
Project Manager JTT
Boring No. B-6
Job No. 01-13-0578
Ground Surface Elevation 1863.53

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE				
			Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	669.0	13	Temp Probe		
Brown Sandy Clay Hard							
To Auger At 58.0							
BTB - 60.0							

Start Date 10-2-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAC
Finish Date 10-2-13 Hammer Drop ____ Inches Boring Method HSA Helper RA
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
ST. ALBANS & MORGANTOWN, WEST VIRGINIA
OFFICES IN VIRGINIA, MARYLAND & PENNSYLVANIA

TEST BORING LOG

Project Name Sugarcamp RW Burning Refuse
Project Location Summersville WV
Project Manager JVt
Boring No. B-7
Job No. 01-13-0578
Ground Surface Elevation 1838.40

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
Rock & coal frags					Temp Probe		
		5.0	69.4	1			
Gray Shale fill 6.0		10.0	63.9	2			
TO							
Little coal Refuse		15.0	63.1	3			
		20.0	68.5	4			
		25.0	71.5	5			
fine coal Refuse		30.0	87.5	6			
11-14-13		35.0	98.9	7			
fine coal Refuse		40.0	212.0	8			
		45.0	651.0	9			
into Brown sandy clay AT 47.0		50.0	702.0				
BTB - 50.0							

Start Date 10-14-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAL
Finish Date 10-15-13 Hammer Drop ____ Inches Boring Method HSA Helper JH/AAA
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name: Susac Camp Run Burning Refuse
Project Location: Summersville WV
Project Manager: JJH
Boring No. B-8
Job No. 01-13-0578
Ground Surface Elevation: ____

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
1' Clay. NW to coal Refuse		5.0	59.5	1	Temp probe		
		10.0	61.0	2			
		15.0	65.0	3			
		20.0	70.0	4			
		25.0	70.0	5			
		30.0	80.1	6			
		35.0	179.4	7			
		40.0	171.5	8			
		45.0	146.6	9			
		50.0	258.4	10			
		55.0	218.0	11			

Start Date 10-14-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller BAC
Finish Date 10-14-13 Hammer Drop ____ Inches Boring Method HSA Helper JH
Drill Rig ____

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS (circled)
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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TEST BORING LOG

Project Name Sugar Camp Run Burning Refuse Boring No. B-8
Project Location Summersville WV Job No. 01-13-0578
Project Manager _____ Ground Surface Elevation _____

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	271.0	12	Temp probe		
Course coal Refuse		65.0	270.0	13			
		70.0	431.0	14			
		75.0	484.0	15			
Hard To Auger At 79.0		80.0	435.0	16			
AR AT 82.5		82.5	447.0				
BTB -83.5		~~100~~					

Start Date 10-14-13 Hammer Wt. _____ Lbs. Rock Core Dia. _____ Driller DAL
Finish Date 10-14-13 Hammer Drop _____ Inches Boring Method HSA Helper JH/AAR
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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TEST BORING LOG

Project Name Sugar Camp Run Burning Refuse
Project Location Summersville WV
Project Manager JJH

Boring No. B-9
Job No. 01-13-0578
Ground Surface Elevation 1844.65

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0-0			Temp Ridge		
Course coal Refuse		5-0	40.3	1			
		10-0	61.1	2			
		15-0	65.4	3			
		20-0	88.9	4			
		25-0	108.6	5			
		30-0	98.4	6			
		35-0	93.2	7			
		40-0	96.4	8			
		45-0	91.8	9			
		50-0	100.3	10			
		53-0	93.7	h			

Start Date 10-10-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAL
Finish Date 10-11-13 Hammer Drop ____ Inches Boring Method HSA Helper JC
Drill Rig Track

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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TEST BORING LOG

Project Name Sugarcamp Run Burning Refuse
Project Location Summersville WV
Project Manager JJH
Boring No. B-9
Job No. 01-13-0578
Ground Surface Elevation

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	100.9	12	Temp Probe		
fine coal Refuse		65.0	1368	13			
		70.0	177.5	14			
		75.0	256.0	15			
" " "		80.0	278.0	16			
		85.0	487.0	17			
		90.0	630.0	18			
		95.0	641.0	19			
" " "		100.0	513.0	20			
		105.0	349.0	21			
		110.0	630.0	22			
		115.0	520.0	23			

Start Date 10-10-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAL
Finish Date 10-11-13 Hammer Drop ____ Inches Boring Method HSA Helper SE
Drill Rig TRACK

Ground Water Depth
FIRST NOTED DRY Ft.
AT COMPLETION DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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TEST BORING LOG

Project Name Sugarcamp Run Burning Refuse Boring No. B-9
Project Location Summersville WV Job No. 01-13-0578
Project Manager SJH Ground Surface Elevation

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	120.0	480.0	24			
	12.5	125.0	728.0	25			
Harder to Auger At 123.0		130.0	576.0	26			
AR AT 133.5		133.5	623.0	27			
BTB - 133.5'							

Start Date 10-10-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAL
Finish Date 10-11-13 Hammer Drop ____ Inches Boring Method HSA Helper JE1
Drill Rig TRACK

Ground Water Depth
FIRST NOTED DRY Ft.
AT COMPLETION DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name Sugarcamp Run Burning Refuse
Project Location Summersville WV
Project Manager JJH

Boring No. B-10
Job No. 01-13-0578
Ground Surface Elevation 1846.22

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
Brown Clay into Coarse Coal Refuse		5.0	78.1	1	Temp Probe		
		10.0	87.6	2			
		15.0	96.6	3			
		20.0	98.7	4			
		25.0	99.2	5			
		30.0	96.7	6			
		35.0	95.4	7			
		40.0	99.8	8			
		45.0	111.7	9			
		50.0	139.5	10			
		53.0	140.3	11			

Start Date 10-9-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAC
Finish Date 10-10-13 Hammer Drop ____ Inches Boring Method ____ Helper JE
Drill Rig Track

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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TEST BORING LOG

Project Name Sugar Camp Run Recycling Refuse
Project Location Summersville WV
Project Manager SJH
Boring No. B-10
Job No. 01-13-0578
Ground Surface Elevation

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	144.3	12	Temp Probe		
Course Refuse		65.0	155.7	13			
" " "		70.0	168.1	14			
		75.0	284.0	15			
		80.0	339.0	16			
		85.0	396.0	17			
		90.0	462.0	18			
		95.0	522.0	19			
" " "		100.0	603.0	20			
		105.0	540.0	21			
Very Hot at 110.0		110.0	2000+ over Limit	22			
		115.0	1180.0	23			

Start Date 10-9-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAC
Finish Date 10-10-13 Hammer Drop ____ Inches Boring Method HSA Helper JA
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name SUGAR CAMP RUN BURNING REFUSE
Project Location SOMMERSVILLE WV
Project Manager JJH
Boring No. B-10
Job No.
Ground Surface Elevation

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	120.0	2000+	24	TEMP PROBE		
OVER LIMIT ON METER 2000+		125.0	917	25			
OVER LIMIT 917 AFTER 20 min HARDER TO AUGER AT 124.0		130.0	? 120.4	26			
B/S @ 130.0							

Start Date 10-9-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAC
Finish Date 10-10-13 Hammer Drop ____ Inches Boring Method HSA Helper JA
Drill Rig TRACK

Ground Water Depth
FIRST NOTED DRY Ft.
AT COMPLETION DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name: Sugar Camp Run Burning Refuse
Project Location: Summersville WV
Project Manager: JJH
Boring No.: B-11
Job No.: 01-13-0578
Ground Surface Elevation: 1842.89

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
Course coal Refuse		5.0	79.1	1	Temp Probe		
		9.5	163.8	2			
		15.0	160.2	3			
		20.0	148.8	4			
		25.0	138.6	5			
		30.0	131.2	6			
		35.0	124.5	7			
		40.0	122.5	8			
		45.0	119.8	9			
		50.0	140.6	10			
		55.0	147.0	11			

Start Date: 10-8-13 Hammer Wt.: ____ Lbs. Rock Core Dia.: ____ Driller: RAL
Finish Date: 10-9-13 Hammer Drop: ____ Inches Boring Method: ____ Helper: JE
Drill Rig: TRACK

Ground Water Depth
FIRST NOTED: Dry Ft.
AT COMPLETION: Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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TEST BORING LOG

Project Name: SUGARCAMP RUN BURNING REFUSE — Boring No.: B-11
Project Location: SUMMERSVILLE WV — Job No.: 01-13-0578
Project Manager: JLT — Ground Surface Elevation: _____

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	207.0	12	TEMP PROBE		
Course Refuse							
INTO fine Refuse AT 65.0		65.0	247.0	13			
		70.0	239.0	14			
10-8-13		75.0	406.0	15			
BACK IN TO COURSE REFUSE		80.0	1006.0	16			
		85.0	1161.0	17			
		90.0	1332.0	18			
		95.0	528.0	19			
		100.0	439.0	20			
INTO BROWN SANDY CLAY		105.0	243.0	21			
BTB - 105.0							

Start Date: 10-8-13 — Hammer Wt. _____ Lbs. — Rock Core Dia. _____ — Driller: RAL
Finish Date: 10-9-13 — Hammer Drop _____ Inches — Boring Method: HSA — Helper: JE
Drill Rig: TRACK

Ground Water Depth
FIRST NOTED DRY Ft.
AT COMPLETION DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name: Sugar Camp Run Burning Refuse
Project Location: Summersville WV
Project Manager: JSH
Boring No.: B-12
Job No.: 01-13-0578
Ground Surface Elevation: 1832.78

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
Brown clay into course Refuse at 4.0		5.0	85.7	1	Temp Probe		
Back into Gray clay at 8.0		10.0	84.1	2			
Back into course Refuse at 13.0		15.0	101.7	3			
		20.0	122.7	4			
		25.0	146.5	5			
		30.0	158.1	6			
into fine Refuse at → (Soft)		35.0	157.8	7			
		40.0	159.9	8			
		45.0	195.9	9			
		50.0	241.0	10			
		55.0	349.0	11			

Start Date: 10-8-13 Hammer Wt. _____ Lbs. Rock Core Dia. _____ Driller: RAC
Finish Date: 10-8-13 Hammer Drop _____ Inches Boring Method: HSA Helper: SB
Drill Rig: TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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TEST BORING LOG

Project Name Sugar Camp Run Burning Refuse
Project Location Summersville WV
Project Manager JJH
Boring No. B-12
Job No. 01-13-0578
Ground Surface Elevation

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	296	12	Temp Probe		
Gray silty clay							
into Brown sandy clay		65.0	170.0	13			
Drove spoon 50/1							
BTB - 65.1							

Start Date 10-8-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAL
Finish Date 10-8-13 Hammer Drop ____ Inches Boring Method HSA Helper JK
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name Sugarcamp Run Burning Refuse
Project Location Summersville WV
Project Manager STH
Boring No. B-13
Job No. 01-13-0578
Ground Surface Elevation 1733.29

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
GRAY SANDY CLAY W/ TR SHALE FRAG: NO COAL REFUSE		5.0	61.6	1	TEMP PROBE		
AR AT 8.0		8.0	64.5	2			
BTM - 8.0							

Start Date 10-3-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAE
Finish Date 10-3-13 Hammer Drop ____ Inches Boring Method HSA Helper JB
Drill Rig TRACK

Ground Water Depth
FIRST NOTED DRY Ft.
AT COMPLETION DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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TEST BORING LOG

Project Name: Sugarcamp Run Burning Refuse
Project Location: Summersville WV
Project Manager: JJH
Boring No.: B-14
Job No.: 01-13-0578
Ground Surface Elevation: 1736.70

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0			Temp Probe		
Gray Sandy Clay into Brown Sandy Clay at 5.0		5.0	66.4	1			
No Coal							
AR at 7.0		7.0	65.9	2			
BTB - 7.0							

Start Date: 10-3-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller: RAC
Finish Date: 10-3-13 Hammer Drop ____ Inches Boring Method: HSA Helper: JE
Drill Rig: TRACK

Ground Water Depth
FIRST NOTED: DRY Ft.
AT COMPLETION: DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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TEST BORING LOG

Project Name: SUGAR CAMP RUN BURNING REFUSE — Boring No.: B-15
Project Location: SUMMERSVILLE WV — Job No.: 0173-0578
Project Manager: JJH — Ground Surface Elevation: 1732.94

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
BROWN & GRAY CLAY					TEMP PROBE		
		5.0	65.6	1			
INTO COAL REFUSE AT 12.0		10.0	66.3	2			
		15.0	72.9	3			
		20.0	83.6	4			
BROWN CLAY AT 25.0		25.0	102.1	5			
BACK INTO REFUSE AT →		30.0	119.0	6			
BACK INTO CLAY AT 37.0 (CORE)		35.0	111.1	7			
		40.0	134.2	8			
		45.0	120.5	9			
BTB - 45.0							

Start Date 10-4-13 — Hammer Wt. ____ Lbs. — Rock Core Dia. ____ — Driller RAC
Finish Date 10-4-13 — Hammer Drop ____ Inches — Boring Method HSA — Helper JE
Drill Rig TRACK

Ground Water Depth
FIRST NOTED DRY Ft.
AT COMPLETION DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name: Sugarcamp Run Burning Refuse
Project Location: Summersville WV
Project Manager: SJH

Boring No: B-16
Job No.: 01-13-0578
Ground Surface Elevation: 1733.59

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
Brown Clay into Coal Refuse Coarse		5.0	77.9	1	Temp Probe		
		10.0	83.2	2			
		15.0	84.5	3			
		20	98.9	4			
		28.0	97.3	5			
		30.0	113.5	6			
		35.0	116.2	7			
		40.0	104.2	8			
		45.0	119.9	9			
		50	119.6	10			
		55.0	117.7	11			

Start Date: 10-4-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller: RAL
Finish Date: 10-4-13 Hammer Drop ____ Inches Boring Method: HSA Helper: JC
Drill Rig: TRACK

Ground Water Depth
FIRST NOTED: DRY Ft.
AT COMPLETION: DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name Sugar Camp Run Burning Refuse
Project Location Summersville WV
Project Manager JJH

Boring No. B-16
Job No. 01-13-0578
Ground Surface Elevation 1737.59

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	115.7	12	Temp Probe		
INTO Gray Clay AT 66.0		65.0	120.1	13			
Very Hard TO Auger AT 73.0		70.0	119.0	14			
		75.0	115.2	15			
INTO Gray Shale		80.0	112.4	16			
BTB — 80.0							

Start Date 10-4-13 Hammer Wt. ____ Lbs.
Finish Date 10-4-13 Hammer Drop ____ Inches
Rock Core Dia. ____
Boring Method HSA
Driller RAC
Helper JE
Drill Rig TRACK

Ground Water Depth
FIRST NOTED DRY Ft.
AT COMPLETION DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name SUGARCAMP RUN BURNING REFUSE
Project Location SUMMERSVILLE WV
Project Manager JJH

Boring No. B-17
Job No. 01-13-0578
Ground Surface Elevation 1732.76

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
BROWN CLAY INTO COAL AT 4.0 MIXED WITH CLAY		5.0	51.1	1	TEMP PROBE		
		10.0	57.8	2			
INTO COURSE REFUSE AT 10.0		15.0	60.5	3			
		20.0	82.4	4			
		25.0	100.2	5			
		30.0	109.1	6			
		35.0	108.0	7			
" " "		40.0	111.7	8			
		45.0	124.0	9			
		50.0	108.2	10			
		53.0	128.1	11			

Start Date 10-4-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAC
Finish Date 10-4-13 Hammer Drop ____ Inches Boring Method HSA Helper SG
Drill Rig TRACK

Ground Water Depth
FIRST NOTED DRY Ft.
AT COMPLETION DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name: Sugar Camp Run Burning Refuse
Project Location: Summersville WV
Project Manager: JJH
Boring No.: B-17
Job No.: 01-13-0578
Ground Surface Elevation: 1732.76

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60	124.4	12	Temp Probe		
Very Hard To Auger At 68.0 Red Dog		65.2	157.9	13			
		70	200.2	14			
		75	118.2	15			
Into Gray Shale At 78.0							
B/B - 80.0		80	124.9	16			

Start Date: 10-4-13 Hammer Wt. ____ Lbs.
Finish Date: 10-4-13 Hammer Drop ____ Inches
Rock Core Dia. ____
Boring Method: HSA
Driller: RAL
Helper: JB
Drill Rig: Track

Ground Water Depth
FIRST NOTED: Dry Ft.
AT COMPLETION: Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name SugarCamp Run Burning Refuse Boring No. B-18
Project Location Summersville WV Job No. 01-13-0578
Project Manager JJH Ground Surface Elevation

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
~~Gray~~ Brown clay into Gray Rock frags shale at 5.0		5.0	51.3	1	Temp Probe		
		10.0	57.1	2			
		15.0	64.4	3			
Gray clay with little coal frags & Red Dog		20.0	79.1	4			
Back into Gray clay at 25.0		25.0	116.7	5			
		30.0	180.3	6			
" —		35.0	251.0	7			
		40.0	405.0	8			
		45.0	349.0	9			
Red Dog at 51.0		50.0	360.0	10			
		53.0	57.3	11			

Start Date 10-7-13 Hammer Wt.____ Lbs. Rock Core Dia.________ Driller RAC
Finish Date 10-7-13 Hammer Drop____ Inches Boring Method________ Helper JC
Drill Rig TRACK

Ground Water Depth	Sampler Type	Boring Method
FIRST NOTED Dry Ft.	SS - DRIVEN SPLIT SPOON	(HSA) - HOLLOW STEM AUGERS
AT COMPLETION Dry Ft.	ST - PRESSED SHELBY TUBE	CFA - CONTINUOUS FLIGHT AUGERS
AFTER____HRS.____Ft.	B - BAG SAMPLE	DC - DRIVING CASING
BACKFILLED________Hrs.	RC - ROCK CORE	MD - MUD DRILLING

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TEST BORING LOG

Project Name SISAR Camp Run Burning Refuse
Project Location Summersville WV
Project Manager JJH
Boring No. B-18
Job No.
Ground Surface Elevation

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	60.0	355.0	12	TBM		
Red Dog into		65.0	202.0	13	Probe		
Gray silty clay at 67.0		70.0	114.0	14			
B.T.B @ 70.0							

Start Date 10-7-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAL
Finish Date 10-7-13 Hammer Drop ____ Inches Boring Method HSA Helper JE
Drill Rig TRACK

Ground Water Depth
FIRST NOTED DRY Ft.
AT COMPLETION DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TRIAD ENGINEERING, INC.
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TEST BORING LOG

Project Name Sugar Camp Run Burning Refuse
Project Location Summersville WV
Project Manager
Boring No. B-19
Job No. 01-13-0578
Ground Surface Elevation 1736.45

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0						
Gray silty clay with rock & coal frags		5.0	103.2	1	Temp probe		
		10.0	104.7	2			
		15.0	102.9	3			
Red Dog & Brown clay mix		20.0	105.4	4			
into Brown clay at 22.0 looks (orig) ? X		25.0	103.7	5			
into coal at 28.0		30.0	110.8	6			
Back into Gray Clay at 32.0	(orig)	35.0	127.6	7			
		40.0	122.2	8			
Hard to Auger at 43.0		45.0	116.9	9			
Drove Spoon Gray Shale at 53.0 BTB-53.0		50.0	110.1	10			
		55.0	106.4	11			

Start Date 10-7-13 Hammer Wt. ____ Lbs.
Finish Date 10-7-13 Hammer Drop ____ Inches
Rock Core Dia. ____
Boring Method HSA
Driller RAC
Helper JC
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name SUGAR CAMP RUN BURNING Refuse
Project Location SUMMERSVILLE WV
Project Manager JJH
Boring No. B-20
Job No. 01-13-0578
Ground Surface Elevation 1743.39

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
Brown & Gray Clay with Rock frag;		5.0	56.5	1	Tube Push		
Harder TO Auger AT 13.5		10.0	58.4	2			
Gray Shale iwo Brown Sandstone AT 16.0		15.0	53.0	3			
AR AT 17.5		20.0	64.4	4			
BTB - 17.5		25.0					
		30.0					

Start Date 10-8-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAL
Finish Date 10-8-13 Hammer Drop ____ Inches Boring Method ____ Helper JE
Drill Rig TRUCK

Ground Water Depth
FIRST NOTED DRY Ft.
AT COMPLETION DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
~~HSA~~ - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name: Sugar Camp Run Burning Refuse — Boring No.: B-21
Project Location: Summersville WV — Job No.: 01-13-0578
Project Manager: JTH — Ground Surface Elevation: 1651.02

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
Weathered Brown Sandstone			4-8-14	1	SS	14"	
		2.5	5-6-8	2	SS	14"	
Weathered Brown ← GRAY Shale		5.0	5-11-12	3	SS	18"	
GRAY Shale →		7.5	21-50/5"	4	SS	10"	
" " "		10.0	50/5"	5	SS	5"	
TTB - 10.5'							

Start Date: 10-2-13 — Hammer Wt.: 140 Lbs. — Rock Core Dia.: — Driller: RAL
Finish Date: 10-2-13 — Hammer Drop: 30 Inches — Boring Method: HSA — Helper: RA
Drill Rig: 1 BACK

Ground Water Depth
FIRST NOTED: Dry Ft.
AT COMPLETION: Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
(SS) - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name: Sugarcamp Run Burning Refuse — Boring No. B-22
Project Location: Summersville WV — Job No 01-13-0578
Project Manager: JJH — Ground Surface Elevation 1698.16

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0	2-4-3	1	SS	8"	
Gray silty clay with coal + Red Dogfrag:		2.5	2-2-3	2	SS	18"	
Brown silty Sandy clay →		5.0	2-2-2	3	SS	18	
		7.5	3-3-2	4	SS	18	
Looks ORIS AT 10.5 Brown sandy clay		10.0	3-4-4	5	SS	14	
		15.0	4-5-6	6	SS	18	
		20.0	5-4-5	7	SS	14	
		25.0	4-8-8	8	SS	14	
Hard To Auser AT 29.0 Gray Shale AT 31.0		30.0	36-14-50/0	9	SS	12"	
BTB- 31.0							

Start Date 10-2-13 — Hammer Wt. 140 Lbs. — Rock Core Dia. — Driller RAC
Finish Date 10-2-13 — Hammer Drop 30 Inches — Boring Method HSA — Helper RA
Drill Rig TRACK

Ground Water Depth
FIRST NOTED 25.0 Ft.
AT COMPLETION 25.0 Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
(SS) DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name SUGARCAMP RUN BURNING REFUSE Boring No. B-23
Project Location SUMMERSVILLE WV Job No. 01-13-0878
Project Manager JJH Ground Surface Elevation 16.44

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0	1-1-1	1	SS	18	
BROWN SANDY CLAY WITH COAL FRAG.		2.5	1-1-1	2		18	
		5.0	WOH/18	3		18	
BAD ODOR AT 7.5 (OIL)?		7.5	2-1-1	4		18	
HARD (RED DOG)		10.0	9-10-7	5		10	
WATER (VERY WARM)		15.0	5-3-2	6		18	
INTO BROWN SANDY CLAY		20.0	16-11-9	7		18	
SOFT GRAY SHALE →		25.0	12-5-8	8		18	
AIR AT 28.0		28.0	5%	9		0	
STB - 28.0							

Start Date 10-2-13 Hammer Wt. 140 Lbs. Rock Core Dia. Driller RAL
Finish Date 10-2-13 Hammer Drop 30 Inches Boring Method HSA Helper RA
Drill Rig RACK

Ground Water Depth
FIRST NOTED 10.0 Ft.
AT COMPLETION 15.0 Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
(SS) DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name Sugarcamp Run Burning Refuse Boring No. B-24
Project Location Summersville WV Job No. 01-13-0578
Project Manager JTH Ground Surface Elevation 1655.0

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0	4-5-3	1	SS	18"	
Brown clay with coal & Red Dog frag:		2.5	2-1-2	2	SS	12"	
		5.0	3-3-6	3	SS	18"	
INTO Brown silty clay AT 6.4		7.5	3-4-5	4		18"	
" " "		10.0	2-6-10	5		18"	
Weathered Shale		15.0	3-3-6			18"	
AT 20.0		20.0	8-15-24			18"	
Gray Shale AT 23.0		25.0	35-50/3			9"	
BTB -25.9							

Start Date 10-3-13 Hammer Wt. 140 Lbs. Rock Core Dia. Driller TAL
Finish Date 10-3-13 Hammer Drop 30 Inches Boring Method HSA Helper JE
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION Dry Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
(SS) - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name SUSAR CAMP RUN Burning Refuse Boring No. B-25
Project Location Summersville WV Job No. 01-13-0578
Project Manager JH Ground Surface Elevation N/A

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
8" of clay into coal Refuse		5.0	51.5	1	TEMP Probe		
		10.0	201.0	2			
		15.0	244.0	3			
		20.0	609.0	4			
into Red Sandy Clay at 23.0		25.0	720.0	5			
Brown Sandy Clay at 30.0		30.0	413.0	6			
		35.0					
BTB- 30.0		40.0					

Start Date 10-15-13 Hammer Wt. ____ Lbs. Rock Core Dia. ____ Driller RAL
Finish Date 10-15-13 Hammer Drop ____ Inches Boring Method HSA Helper JH/AAA
Drill Rig TRACK

Ground Water Depth
FIRST NOTED DRY Ft.
AT COMPLETION DRY Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
(HSA) - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

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TEST BORING LOG

Project Name: Sugar Camp Run Burning Refuse — Boring No.: B-26
Project Location: Summersville WV — Job No.: 01-13-0578
Project Manager: JSH — Ground Surface Elevation: N/A

SOIL / ROCK DESCRIPTION	Strata Depth	Depth Scale	SAMPLE Blows /6"	No.	Type	Rec.	RQD
SURFACE	0.0	0.0					
18" of Brown Clay into Coal Refuse		5.0	92.5	1	Temp Probe		
		10.0	128.9	2			
Into Brown Clay at 17.0		15.0	197.1	3			
		20.0	201.0	4			
Brown Sandy Clay		25.0	153.4	5			
BTB - 25.0							

Start Date 10-15-13 — Hammer Wt. ____ Lbs. — Rock Core Dia. ____ — Driller RAL
Finish Date 10-13 — Hammer Drop ____ Inches — Boring Method HSA — Helper JH/AAA
Drill Rig TRACK

Ground Water Depth
FIRST NOTED Dry Ft.
AT COMPLETION DH Ft.
AFTER ____ HRS. ____ Ft.
BACKFILLED ____ Hrs.

Sampler Type
SS - DRIVEN SPLIT SPOON
ST - PRESSED SHELBY TUBE
B - BAG SAMPLE
RC - ROCK CORE

Boring Method
HSA - HOLLOW STEM AUGERS
CFA - CONTINUOUS FLIGHT AUGERS
DC - DRIVING CASING
MD - MUD DRILLING

TEST BORING LOG

Sheet 1 of 1

Project Number: 01-13-0116 Project Name: **Summersville Refuse Drilling** Boring No.: **B-100**

Logger: Boring Location: See Boring Location Plan

Date Started: 2/5/13 Drill/Method: CME-550X/HSA

Date Completed: 2/5/13 Driller: MAJ Ground Elev.:

Depth (feet)	Sample No.	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
							Shelby Tube; Standard Split Spoon; Core Sample; Auger Probe				
0							FILL - COARSE COAL REFUSE				
5.0											
10.0							124° F. @ 10 feet				
15.0											
20.0							136° F. @ 20 feet				
25.0											
30.0							165° F. @ 30 feet				
35.0											
40.0							193.4° F. @ 40 feet -Boulders from 40 to 50 feet.				
45.0											
50.0							210° F. @ 50 feet				
						53.0	**Auger Refusal at 53.0 feet.**				
55.0							Boring Terminated at 53.0 feet.				
60.0											

TRIAD_C SUMMERSVILLE REFUSE DRILLING GPJ TRIAD 3 GDT 2/13/13

TRIAD ENGINEERING, INC.

219 Hartman Run Road
Morgantown, WV 26505
304.296.2562
Fax: 304.296.8739

Remarks: -Dry at completion of augering.

TEST BORING LOG

Sheet 1 of 3

Project Number: **01-13-0116**
Project Name: **Summersville Refuse Drilling**
Boring No.: **B-101**
Logger:
Boring Location: See Boring Location Plan
Date Started: 2/5/13
Drill/Method: CME-55/HSA
Date Completed: 2/7/13
Driller: MAJ
Ground Elev.:

Depth (feet)	Sample No.	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
							FILL - COARSE COAL REFUSE				
5.0											
10.0							127.2° F. @ 10 feet				
15.0											
20.0							148.3° F. @ 20 feet				
25.0											
30.0							155.2° F. @ 30 feet				
35.0											
40.0							217° F. @ 40 feet				
45.0											
50.0							237° F. @ 50 feet				
55.0											
60.0							267° F. @ 60 feet				

Shelby Tube | Standard Split Spoon | Core Sample | Auger Probe

TRIAD_C_SUMMERSVILLE REFUSE DRILLING.GPJ TRIAD 3.GDT 2/13/13

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304.296.2562
Fax: 304.296.8739

Remarks: -Dry at completion of augering.

TEST BORING LOG

Project Number: **01-13-0116** Project Name: **Summersville Refuse Drilling** Boring No.: **B-101**

Logger: Boring Location: See Boring Location Plan

Date Started: 2/5/13 Drill/Method: CME-55/HSA

Date Completed: 2/7/13 Driller: MAJ Ground Elev.:

Depth (feet)	Sample No.	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
65.0							FILL - COARSE COAL REFUSE (continued)				
70.0							219° F. @ 70 feet				
75.0											
80.0							232° F. @ 80 feet				
85.0											
90.0							212° F. @ 90 feet				
95.0											
100.0							335° F. @ 100 feet				
105.0											
110.0							260° F. @ 110 feet				
115.0											
120.0							250° F. @ 120 feet				

Shelby Tube; Standard Split Spoon; Core Sample; Auger Probe

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Fax: 304.296.8739

Remarks: -Dry at completion of augering.

TEST BORING LOG

Project Number: **01-13-0116** Project Name: **Summersville Refuse Drilling** Boring No.: **B-101**

Logger: Boring Location: See Boring Location Plan

Date Started: 2/5/13 Drill/Method: CME-55/HSA

Date Completed: 2/7/13 Driller: MAJ Ground Elev.:

Depth (feet)	Sample No.	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
125.0							FILL - COARSE COAL REFUSE (continued)				
130.0							366° F. @ 130 feet **Auger Refusal at 131.0 feet.**				
						131.0	Boring Terminated at 131.0 feet.				
135.0											
140.0											
145.0											
150.0											
155.0											
160.0											
165.0											
170.0											
175.0											
180.0											

Shelby Tube; Standard Split Spoon; Core Sample; Auger Probe

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304.296.2562
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Remarks: -Dry at completion of augering.

TEST BORING LOG

Project Number: **01-13-0116** Project Name: **Summersville Refuse Drilling** Boring No.: **B-102**

Logger: Boring Location: See Boring Location Plan

Date Started: 2/7/13 Drill/Method: CME-550X/HSA

Date Completed: 2/11/13 Driller: MAJ Ground Elev.:

Shelby Tube | Standard Split Spoon | Water Level First Noted 100.0 ft.

Core Sample | Auger Probe

Depth (feet)	Sample No.	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
5.0							FILL - COARSE COAL REFUSE				
10.0							71° F. @ 10 feet				
15.0											
20.0							102° F. @ 20 feet				
25.0											
30.0							175° F. @ 30 feet				
35.0											
40.0							204° F. @ 40 feet				
45.0											
50.0							222° F. @ 50 feet				
55.0											
60.0							249° F. @ 60 feet				

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Fax: 304.296.8739

Remarks: -Caved-in at 72'

TEST BORING LOG

Project Number: **01-13-0116** Project Name: **Summersville Refuse Drilling** Boring No.: **B-102**

Logger: Boring Location: See Boring Location Plan

Date Started: 2/7/13 Drill/Method: CME-550X/HSA

Date Completed: 2/11/13 Driller: MAJ Ground Elev.:

Shelby Tube | Standard Split Spoon | Water Level First Noted 100.0 ft.

Core Sample | Auger Probe

Depth (feet)	Sample No.	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
65.0							FILL - COARSE COAL REFUSE (continued)				
70.0							220° F. @ 70 feet				
75.0											
80.0							285° F. @ 80 feet (263° F. after 15 hours)				
85.0											
90.0							371° F. @ 90 feet				
95.0							-Boulders from 95 to 100 feet.				
100.0							490° F. @ 100 feet		▽		
105.0											
110.0							566° F. @ 110 feet				
115.0											
120.0							445° F. @ 120 feet				

TRIAD C SUMMERSVILLE REFUSE DRILLING.GPJ TRIAD 3.GDT 2/13/13

Remarks: -Caved-in at 72'.

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Fax: 304.296.8739

TEST BORING LOG

Project Number: **01-13-0116** Project Name: **Summersville Refuse Drilling** Boring No.: **B-102**

Logger: Boring Location: See Boring Location Plan

Date Started: 2/7/13 Drill/Method: CME-550X/HSA

Date Completed: 2/11/13 Driller: MAJ Ground Elev.:

Shelby Tube | Standard Split Spoon | Water Level First Noted 100.0 ft.

Core Sample | Auger Probe

Depth (feet)	Sample No	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
125.0							FILL - COARSE COAL REFUSE (continued)				
130.0							475° F. @ 130 feet				
135.0											
140.0							496° F. @ 140 feet				
145.0											
150.0							330° F. @ 150 feet				
155.0											
160.0							970° F. @ 160 feet				
						162.0	Boring Terminated at 162.0 feet.				
165.0											
170.0											
175.0											
180.0											

TRIAD_C SUMMERSVILLE REFUSE DRILLING.GPJ TRIAD 3.GDT 2/13/13

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Fax: 304.296.8739

Remarks: -Caved-in at 72'.

TEST BORING LOG

Project Number: **01-13-0116** Project Name: **Summersville Refuse Drilling** Boring No.: **B-103**

Logger: Boring Location: See Boring Location Plan

Date Started: 2/11/13 Drill/Method: CME-550X/HSA

Date Completed: 2/12/13 Driller: MAJ Ground Elev.:

Depth (feet)	Sample No.	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
							Shelby Tube; Standard Split Spoon; Core Sample; Auger Probe				
0							FILL - COARSE COAL REFUSE				
5.0											
10.0							150° F. @ 10 feet				
15.0											
20.0							200° F. @ 20 feet				
25.0											
30.0							477° F. @ 30 feet				
35.0											
40.0							354° F. @ 40 feet				
45.0											
50.0							302° F. @ 50 feet				
55.0											
60.0							280° F. @ 60 feet				

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Remarks: -Dry at completion of augering.

TEST BORING LOG

Project Number: **01-13-0116** Project Name: **Summersville Refuse Drilling** Boring No.: **B-103**

Logger: Boring Location: See Boring Location Plan

Date Started: 2/11/13 Drill/Method: CME-550X/HSA

Date Completed: 2/12/13 Driller: MAJ Ground Elev.:

Depth (feet)	Sample No.	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
65.0							FILL - COARSE COAL REFUSE (continued)				
70.0							216° F. @ 70 feet				
75.0											
80.0							203° F. @ 80 feet				
85.0											
90.0							205° F. @ 90 feet				
95.0											
100.0							290° F. @ 100 feet				
105.0											
110.0						110.0	400° F. @ 110 feet (170° F. after 15 hours) Boring Terminated at 110.0 feet.				
115.0											
120.0											

Shelby Tube; Standard Split Spoon; Core Sample; Auger Probe

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304.296.2562
Fax: 304.296.8739

Remarks: -Dry at completion of augering.

TEST BORING LOG

Sheet 1 of 1

Project Number: **01-13-0116** Project Name: **Summersville Refuse Drilling** Boring No.: **B-104**

Logger: Boring Location: See Boring Location Plan

Date Started: 2/12/13 Drill/Method: CME-550X/HSA

Date Completed: 2/12/13 Driller: MAJ Ground Elev.:

Shelby Tube | Standard Split Spoon | Core Sample | Auger Probe

Depth (feet)	Sample No.	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
0							FILL - COARSE COAL REFUSE				
5.0											
10.0							97° F. @ 10 feet				
15.0											
20.0							125° F. @ 20 feet				
25.0											
30.0							121° F. @ 30 feet				
35.0											
40.0							111.3° F. @ 40 feet				
45.0											
50.0							168.1° F. @ 50 feet -Boulders from 50 to 54 feet.				
						54.0	**Auger Refusal at 54.0 feet.**				
55.0							Boring Terminated at 54.0 feet.				
60.0											

TRIAD_C_SUMMERSVILLE REFUSE DRILLING.GPJ TRIAD 3.GDT 2/13/13

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Remarks: -Dry at completion of augering.

TEST BORING LOG

Sheet 1 of 1

Project Number: **01-13-0116** Project Name: **Summersville Refuse Drilling** Boring No.: **B-105**

Logger: Boring Location: See Boring Location Plan

Date Started: 2/12/13 Drill/Method: CME-550X/HSA

Date Completed: 2/12/13 Driller: MAJ Ground Elev.:

Depth (feet)	Sample No.	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
							Shelby Tube; Standard Split Spoon; Core Sample; Auger Probe				
5.0							FILL - COARSE COAL REFUSE				
10.0							87.3° F. @ 10 feet				
15.0											
20.0							84° F. @ 20 feet				
25.0						27.0	**Auger Refusal at 27.0 feet.**				
30.0							Boring Terminated at 27.0 feet.				
35.0											
40.0											
45.0											
50.0											
55.0											
60.0											

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304.296.2562
Fax: 304.296.8739

Remarks: -Dry at completion of augering.

TEST BORING LOG

Sheet 1 of 1

Project Number: **01-13-0116** Project Name: **Summersville Refuse Drilling** Boring No.: **B-106**

Logger:

Boring Location: See Boring Location Plan

Date Started: 2/12/13 Drill/Method: CME-550X/HSA

Date Completed: 2/12/13 Driller: MAJ Ground Elev.:

Depth (feet)	Sample No.	Sample Type	Blow Counts	Recovery (%)	RQD (RUN)	Strata Depth (ft)	MATERIAL DESCRIPTION	RQD (Strata)	Water Level	Graphic Log	Strata Elevation
5.0							FILL - COARSE COAL REFUSE				
10.0											
15.0											
20.0											
25.0							-Boulder or rock at 25 feet				
						27.0	**Auger Refusal at 27.0 feet.**				
30.0							Boring Terminated at 27.0 feet.				
35.0											
40.0											
45.0											
50.0											
55.0											
60.0											

Shelby Tube; Standard Split Spoon; Core Sample; Auger Probe

TRIAD_C SUMMERSVILLE REFUSE DRILLING.GPJ TRIAD 3.GDT 2/13/13

TRIAD ENGINEERING, INC.

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Remarks: -Offset 10' from B-105.
-Dry at completion of augering.