WEST VIRGINIA
SECRETARY OF STATE
NATALIE E. TENNANT
ADMINISTRATIVE LAW DIVISION

Do Not Mark In This Box

FILED

2009 JUN -5 PM 1:39

OFFICE WEST VIRGINIA
SECRETARY OF STATE

Form #6

NOTICE OF FINAL FILING AND ADOPTION OF A LEGISLATIVE RULE AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE

AGENCY: Department of Environmental Protection TITLE NUMBER: 60

AMENDMENT TO AN EXISTING RULE: YES X NO ___

IF YES, SERIES NUMBER OF RULE BEING AMENDED: 3

TITLE OF RULE BEING AMENDED: Voluntary Remediation and Redevelopment Rule

IF NO, SERIES NUMBER OF RULE BEING PROPOSED: ___

TITLE OF RULE BEING PROPOSED: ___

THE ABOVE RULE HAS BEEN AUTHORIZED BY THE WEST VIRGINIA LEGISLATURE.

AUTHORIZATION IS CITED IN (house or senate bill number) SB 153

SECTION 64-3-1(s), PASSED ON April 8, 2009

THIS RULE IS FILED WITH THE SECRETARY OF STATE. THIS RULE BECOMES EFFECTIVE ON THE FOLLOWING DATE: June 5, 2009

Authorized Signature

TITLE 60
LEGISLATIVE RULE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
SECRETARY'S OFFICE

SERIES 3
VOLUNTARY REMEDIATION AND REDEVELOPMENT RULE

§60-3-1. General.

1.1. Scope. -- This legislative rule establishes the eligibility, procedures, standards and legal documents required for voluntary and brownfield cleanups.

1.2. Authority. -- W. Va. Code §22-22-3.

1.3. Filing Date. -- June 5, 2009

1.4. Effective Date. -- June 5, 2009

§60-3-2. Definitions. Terms defined in the Act are accorded the same definition in this rule.

Unless the context in which used clearly requires a different meaning, the definitions contained in W. Va. Code §22-22-2 and § 22-22B-2 shall apply to the terms in this rule in addition to the definitions expressly set forth in this rule. For ease of reference, some of the statutory definitions are repeated in this section.

2.1. Abandoned Property. -- Real property for which the current owner cannot be determined or cannot be located or property which has been forfeited to or acquired by the state for the nonpayment of taxes pursuant to state law.

2.2. Act. -- The Voluntary Remediation and Redevelopment Act, W. Va. Code §22-22-1 et seq.

2.3. Analytical Expenses. -- Those direct costs associated with laboratory analysis of samples associated with a voluntary remediation.

2.4. Anthropogenic Background. -- Concentrations of chemicals that are present in the environment due to human activities unrelated to operation at the site.

2.5. Applicable Standards. -- Standards described in section 9 of this rule. Such standards include any exposure controls used at a site to meet the acceptable risk level for that site, at the time of the remediation or in the future.

2.6. Applicant. -- A person who is applying or has applied to participate in the voluntary remediation program.

2.7. Brownfield. -- Any industrial or commercial property which is abandoned or not being actively used by the owner as of the effective date of this article, but shall not include any site subject to a unilateral enforcement order under §104 through §106 of the Comprehensive Environmental Response, Compensation and Liability Act, 94 Stat. 2779, 42 U.S.C. §9601, as amended, or which has been listed or proposed to be listed by the United States environmental protection agency on the priorities list of

Title I of said act, or subject to a unilateral enforcement order under §3008 or §7003 of the Resource Conservation Recovery Act" or any unilateral enforcement order for corrective action under this chapter.

2.8. Brownfield Applicant. -- A person who is applying or has applied to participate in the voluntary remediation for a Brownfield property and:

2.8.a. Who is seeking or has obtained a site assessment loan from the Brownfields Revolving Fund; or

2.8.b. Who will use funds from the State of West Virginia or any county or municipality thereof, or brownfields grant funds from USEPA in the assessment or remediation of the property.

2.9. Carcinogen. -- Any substance which can cause cancer.

2.10. Cumulative Site Risk. -- The summation of risks to a human receptor or ecological receptor from one or more contaminants released at the site over a period of time.

2.11. Day or Day Calendar. -- The 24-hour period between 12:00 A.M. - 12:00 A.M.

2.12. De Minimis Risks. -- Those risks that are so trivial that they would not require remediation under this rule.

2.13. Ecological Receptors of Concern. -- Specific ecological communities, populations, or individual organisms protected by federal, state or local laws and regulations or those local populations which provide important natural or economic resources, functions and values.

2.14. Ecosystem. -- An integrated, self-functioning system consisting of interactions among both the biotic community and abiotic environment within a specified location in space and time. Sizes of ecosystems may vary considerably.

2.15. Endangered and Threatened Species. -- Any plant or animal species identified as endangered or threatened pursuant to federal, state, or local laws.

2.16. Engineering Controls. -- Remedial actions directed exclusively toward containing or controlling the migration of contaminants through the environment. These include, but are not limited to, slurry walls, liner systems, caps, leachate collection systems, and groundwater recovery trenches.

2.17. Exposure. -- Contact of an organism with a chemical or physical agent. Exposure is quantified as the amount of the agent available at the exchange boundaries of the organism (e.g., skin, lungs, gut) and available for absorption.

2.18. Exposure Factors. -- Values used to estimate exposure in risk assessment, such as the number of days per week that exposure is expected to occur, or the amount of contaminated media that a person might incidentally ingest per day.

2.19. Exposure Pathway. -- A complete exposure pathway consists of a source or release from a source, a transport/exposure medium (e.g., air) or media (in cases of intermediate transfer), an exposure point, and an exposure route.

2.20. Exposure Route. -- The way a chemical or physical agent comes in contact with a receptor (e.g., by eating [ingestion], breathing [inhalation], or touching [dermal contact]).

2.21. Fate and Transport. -- The behavior and movement of a chemical through an environmental media.

2.22. Free product refers to a regulated substance that is present as a nonaqueous phase liquid (e.g., liquid not dissolved in water). These substances include liquid petroleum products such as gasoline, kerosene, diesel fuel, or oil, and any hazardous substance either listed in Section 101(14) of CERCLA or defined as such under RCRA. For petroleum hydrocarbons, the term nonaqueous phase liquid includes both liquid phase and residual phase hydrocarbons. Liquid phase product is capable of flowing downward and/or laterally into wells or excavations. Typically it exists as a pool or mound floating on the water table or resting on an impermeable soil layer. Residual phase product does not generally flow as a liquid; it occurs as globules within fractures or pores of soil or bedrock.

2.23. Gross Remediation Costs. -- The direct costs associated with remediation of a site and paid by the remediator. Gross remediation costs include the fees paid to the licensed remediation specialist, and contractors, equipment expenses and rental, disposal costs, permit fees, remediation site personnel costs, and all other expenses directly related to achieving applicable standards at the site.

2.24. Habitat. -- The area or type of environment in which an organism or biological population naturally lives or is found.

2.25. Hazard Index. -- The sum of the hazard quotients for multiple substances and/or multiple exposure pathways.

2.26. Hazard Quotient. -- The value which quantifies noncarcinogenic risk for one chemical for one receptor population over a specified exposure period. The hazard quotient is equal to the ratio of a chemical-specific intake to the reference dose.

2.27. Hourly Rate. -- The gross annual salary (excluding benefits paid to an employee) divided by 2080.

2.28. Implementability. -- The technical and administrative feasibility of an action as well as the availability of needed goods and services.

2.29. Inactive property. -- Real property that has previously been used for commercial or industrial purposes but is no longer actively used for such purposes.

2.30. Industrial Land Use. -- Land used for commercial establishments, manufacturing plants, public utilities, mining, distribution of goods or services, administration of business activities, research and development facilities, warehousing, shipping, transport, remanufacturing, stockpiling of raw materials, storage, repair and maintenance of commercial machinery or equipment, and waste management.

2.31. Institutional Controls. -- Legal or contractual restrictions on property use that remain effective after the remedial

action is completed and are used to meet applicable standards. The term may include, but not limited to, deed and water use restrictions.

2.32 Land Use Covenant –Is an environmental covenant within the meaning of W. Va. Code § 22-22B-2(4), and is a servitude which is agreed to by the owner of the property arising out of remediation projects which attain and demonstrate continuing compliance with site-specific standards for any contaminants at the site, and which meets the requirements of Section 13 of this rule.

2.33. Leaching Potential. -- The potential for soluble constituents to be dissolved and filter through the soil by a percolating fluid.

2.34 LOAEL or Lowest Observed Adverse Effect Level. -- The lowest concentration or dose evaluated in a test that causes statistically significant adverse effects in experimental trials.

2.35. LRS or Licensed Remediation Specialist. --An individual certified by the secretary pursuant to rules adopted under Section 3 of Article 22 as qualified to perform professional services and to supervise the remediation of contaminated sites.

2.36 Natural Background. -- Ambient concentrations of chemicals that are present in the environment and have not been influenced by humans (e.g., iron, manganese).

2.37 NOAEL or No Observed Adverse Effect Level. -- The highest concentration or dose evaluated in a test that does not cause statistically significant adverse effects in experimental trials.

2.38 New Information. -- Any information obtained directly or indirectly by the department from any person after issuance of a certificate of completion, but does not include information the department has received in the application for participation in the voluntary remediation program, including any site assessment, during the execution of the voluntary remediation agreement or any work plan developed under such an agreement, or other information available to department under the voluntary remediation program prior to the execution of the certificate of completion. Information that does not qualify as new information may be considered by the secretary along with new information if necessary, to determine whether any of the conditions for reopening set out in section 16 of this rule, have occurred.

2.39 No Further Action. -- A site is eligible to receive a Certificate of Completion on the basis of site assessment sampling or sampling data developed under a Voluntary Remediation Agreement which demonstrates that the site meets all applicable standards.

2.40 Operator. -- The person responsible for the overall operation of a facility site. For purposes of this rule, a person who executes a voluntary remediation agreement with the secretary may be deemed an operator for the purpose of carrying out the activities required by the agreement.

2.41 Potential to Migrate. -- Refers to the ability of contaminants to migrate

from a source or soil to groundwater.

2.42 Primary Employee. -- A voluntary remediation project manager, engineer or scientist employed by the secretary in negotiating, facilitating, overseeing or confirming a voluntary remediation project. The term does not include secretaries, paralegals, clerks, technicians or others who serve to support the activities of the primary employee.

2.43 Prime Rate. -- The base rate on corporate loans posted by at least 75% of the nation's 30 largest banks.

2.44 Probabilistic Risk Assessment. -- A risk assessment performed using a mathematical technique that produces a distribution of values for a calculated term by solving for that term in successive iterations. Each successive iteration requires the selection of a single input value from defined distribution(s) for each of the terms used to derive the calculated term.

2.45 Readily Apparent Harm. -- If any one of the following criteria are observed at the site, then readily apparent harm is found:

2.45a Visual evidence of stressed biota attributable to the release at the site, including, but not limited to, fish kills or abiotic conditions; or

2.45b Visible presence of oil, tar, or other non-aqueous phase contaminant in soil over an area equal to or greater than two acres, or over an area equal to or greater than 1,000 square feet in sediment.

2.46 Reasonably Anticipated Future Use. -- Potential future land and water uses which have a credible chance of occurrence.

2.47 Reasonably Potential. --A scenario with a credible chance of occurrence without considering extreme or essentially highly unlikely circumstances.

2.48 Receptors (Human). -- Humans potentially exposed to contaminants released from the Site.

2.49 Remedial Action. -- To cleanup, mitigate, correct, abate, minimize, eliminate, control and contain or prevent a release of a contaminant into the environment in order to protect the present or future public health, safety, welfare, or the environment, including preliminary actions to study or assess the release.

2.50 Reopener. -- One or more of the grounds for setting aside some or all of a certificate of completion and reopening a voluntary agreement that is specified in section 16 of this rule.

2.51 Residential Land Use. -- Any real property or portion thereof which is used for housing of human beings. This term includes property used for schools, day care centers, nursing homes, or other residential-style facilities or recreational areas.

2.52 Revolving Fund. -- The Brownfields Revolving Fund established in W.Va. Code §22-22-6(b).

2.53 Risk-based Concentrations. -- Concentration levels developed by the secretary for individual chemicals that correspond to a specific incremental cancer risk level of $1x10^{-6}$ for residential land use

and 1 x 10^{-5} for industrial land use or a hazard quotient of 1. These concentrations are to be used with the De Minimis Standard.

2.54 Saturation Concentration. -- The maximum possible quantity of a substance which can go into solution of a given liquid (e.g., water) at a given temperature and pressure.

2.55 Secretary. -- The secretary of the Department of Environmental Protection or such other person to whom the secretary has delegated authority or duties pursuant to this rule.

2.56 Site. -- Any property or portion thereof which contains or may contain contaminants and is eligible to participate in the voluntary remediation program as provided under this article.

2.57 Site Assessment. -- Characterization of a site through an evaluation of its physical and environmental context, (e.g., subsurface geology, soil properties and structures, hydrology, and surface characteristics) to determine if a release has occurred, the levels of the chemical(s) of concern in environmental media, and the likely physical distribution of the chemical(s) of concern. The site assessment collects data as needed on ground water and surface water quality, land and resource use, potential receptors and generates information to support remedial action decisions.

2.58 Site Assessment Costs. -- Costs incurred in connection with site assessment activities including but not limited to: waste disposal costs, professional fees and expenses of those evaluating contamination, the cost of identifying a site history and prior land use, the costs of archaeological investigations, and attorneys fees incurred in evaluating a site or negotiating a voluntary remediation agreement.

2.59 Systemic Toxicant. -- A harmful substance or agent that may enter the body and injure an organ or organ system and having an effect other than causing cancer. Most chemicals that produce systemic toxicity do not cause a similar degree of toxicity in all organs but usually demonstrate major toxicity to one or two organs.

2.60 Total Dissolved Solids. -- All material that passes through the standard glass fiber filter as provided in the current edition of Standard Methods for the Examination of Water and Wastewater.

2.61 Trade Secrets. -- Any information protected from disclosure under W. Va. Code §29B-1-4(1).

2.62 Trophic Level. -- The biological energy transfer level; the position in a trophic pyramid or food chain.

2.63 Voluntary Remediation. -- A series of measures that are self-initiated by a person to identify and address potential sources of contamination of property and to establish that the property complies with applicable remediation standards. Brownfield remediation is a subset of voluntary remediation.

2.64 Voluntary Remediation Program. -- The program for the voluntary assessment and remediation of sites under the Act.

2.65 Weight-of-Evidence Approach. -- The process by which measurement endpoints are related to an assessment endpoint to evaluate whether a significant risk of harm is posed to the environment. The approach is planned and initiated at the problem formulation stage and results are integrated at the risk characterization stage.

§60-3-3. Eligibility.

3.1. Eligibility criteria for voluntary remediation program. -- Any site is eligible to participate in the voluntary remediation program except the following:

3.1.a. Any site that is subject to a unilateral order issued by the U.S. Environmental Protection Agency pursuant to §§104 through 106 of the Comprehensive Environmental Response, Compensation and Liability Act;

3.1.b. Any site that has been listed or proposed to be listed on the National Priorities List developed by the U.S. Environmental Protection Agency pursuant to Title I of the Comprehensive Environmental Response, Compensation and Liability Act; provided that any site that has been formally delisted by the Environmental Protection Agency is eligible to participate in the voluntary remediation program;

3.1.c. Any site that is subject to a unilateral enforcement order under §3008 or §7003 of the Resource Conservation and Recovery Act;

3.1.d. Any site that is subject to a unilateral enforcement order for corrective action issued pursuant to any provision of Chapter 22 of the West Virginia Code; or

3.1.e. Any site where the release which is subject to remediation was created through gross negligence or willful misconduct by the applicant.

3.2. Eligibility Criteria for Brownfield Sites. -- A site may participate in the voluntary remediation program as a brownfields property if the following conditions are satisfied and the applicant qualifies as a brownfield applicant under this rule:

3.2.a. The site meets the requirements of subsection 3.1 of this rule;

3.2.b. The applicant did not cause or contribute to contamination on the site; and

3.2.c. The site meets either of the following:

3.2.c.1. As of July 1, 1996, the site is an industrial or commercial property which is abandoned; or

3.1.c.2. As of July 1, 1996, the site is an industrial or commercial property that is not being actively used by the owner.

3.3. Eligibility Determination. In deciding the acceptability of an application the secretary shall determine whether the eligibility criteria of this section have been satisfied.

3.4. Appeal of Rejection of Application.

3.4.a. The applicant may appeal the rejection of the application by filing a notice of appeal with the Environmental Quality Board in accordance

with the provisions of W. Va. Code §22B-1-7.

3.4.b. For purpose of this appeal, the record of proceedings as referenced in §22B-1-7 shall consist of the application, all correspondence between the secretary and the applicant relating to the application and other documents and correspondence in the applicable files of the secretary relating to this matter.

§60-3-4. Application to Participate in Voluntary Remediation Program.

4.1. Pre-application Conference for Brownfield Applicants. A brownfield applicant shall confer with the secretary and, if a loan is being requested, comply with the loan procedures contained in section 15 of this rule before submitting an application to participate in the voluntary remediation program.

4.2. Contents of Application. Any person who desires to participate in the voluntary remediation program shall submit to the secretary of the Department of Environmental Protection an application on a form provided by the secretary which shall contain, at a minimum, the following information:

4.2.a. The applicant's name. This shall include the applicant's legal name and any other aliases or other names by which the applicant is known or under which the applicant does business;

4.2.b. The applicant's address. This shall include the current address at which the applicant can be reached by mail, and in the event that post office delivery is not feasible, the applicant shall also provide a description of his/her current address that will enable the secretary to locate the applicant;

4.2.c. The applicant's financial capabilities. This shall include, but is not limited to, information that demonstrates the applicant has, or has secured access to, financial resources that are adequate to successfully complete the voluntary remediation and satisfy any contractual obligations entered into by the applicant that relate to the voluntary remediation;

4.2.d. The applicant's technical capabilities. This shall include, at a minimum, information that the applicant is or has contracted with a licensed remediation specialist to perform the work required;

4.2.e. For brownfield applicants, a Notice of Intent to Remediate in accordance with subsection 7.1 of this rule, and a certification that he/she, his/her spouse or other member of his/her immediate family did not cause or contribute to the contamination on the property;

4.2.f. A general description of the site. This shall include, at a minimum, the following:

4.2.f.1. A written description of the site that includes any city, county, and street addresses, and adjacent landmarks, buildings, waterways, former uses or other identifying information;

4.2.f.2. The deed book number and deed number of the site property;

4.2.f.3. County tax map references;

4.2.f.4. Geographic information system data adequate to accurately delineate the voluntary remediation site. All spatial data submitted by the applicant will be in one of three coordinate systems:

4.2.f.4.A. Universal transverse mercator (UTM) zone 17 NAD datum. (Preferred);

4.2.f.4.B. Geographic (Latitude and Longitude); or

4.2.f.4.C. State plane coordinates NAD 27 datum.

4.2.f.5. All geographic information system location data will have a horizontal accuracy within 12.2 meters (40 feet) in accordance with the US Department of the Interior US Geologic Survey National Map Accuracy Standards;

4.2.f.6. Any other identifying information that will serve to clearly and concisely identify the property;

4.2.f.7. Information of which the applicant is aware concerning the nature and extent of any known contamination at the site and immediately contiguous to the site, or wherever the contamination came to be located;

4.2.f.8. Information demonstrating the applicant's legal right to perform the work required for participation in the program (e.g., title report, deed, or access agreement).

4.2.f.9. Where an application covers two or more non-contiguous locations, this information shall be provided for each location.

4.2.g. A site assessment prepared by a licensed remediation specialist which includes information that identifies all actual or potential contaminants reasonably expected to be at and near the site, the nature and extent of the contamination, and potential receptors and pathways for contaminant migration. In no case, however, may an application be denied on the grounds that the site assessment is inadequate if the site assessment satisfies the requirements contained in W. Va. Code §22-22-4(e). Where the secretary determines that additional site assessment information is necessary, the submission of such additional information may be addressed in the voluntary remediation agreement.

4.2.h. An applicant may appeal the secretary's rejection of an application to the Environmental Quality Board in accordance with W. Va. Code §22B-1-7.

4.2.i. Other information as requested by the secretary.

4.3. Application Fee.

4.3.a. Each applicant shall pay an application fee in accordance with this section. The fee is to be submitted at the time the application is filed in the form of a check payable to the Voluntary Remediation Administrative Fund.

4.3.b. Should the applicant withdraw the application at anytime prior to the determination of eligibility by the

secretary, the applicant shall receive a refund of one-half the application fee paid.

4.3.c. If the secretary rejects the application and applicant does not re-submit a revised application within 25 days, the secretary shall refund one-half the application fee within 30 days of the rejection of the application.

4.3.d. The application fee to be paid shall be calculated based upon the points assigned to the property using the following criteria:

4.3.d.1. Size of Property. The total square feet of surface area of the property to be covered by the application, rounded to the nearest 1,000 square feet. For properties less than 1 acre, the assigned points are 10; for properties of one acre or more but less than 5 acres, the assigned points are 20; for properties of 5 acres or more, the assigned points are 30;

4.3.d.2. Years of Operation. The number of years that the property was operated for any non-residential activity. Partial years of operation should be treated as complete years of operation. For properties operated 10 years or less, the assigned points are 10; for properties operated more than 10 years but less than 20, the assigned points are 20; and for properties operated 20 years or more, the assigned points are 30.

4.3.d.3. NAICS Code. Using the North American Industry Classification System published by the U.S. Office of Management and Budget as it applies to the activities that have been conducted on the property, if the property falls within NAICS Subsector Codes 316 (Leather and Allied Product Manufacturing), 322 (Paper Manufacturing), 324 (Petroleum and Coal Products Manufacturing), 325 (Chemical Manufacturing), 326 (Plastics and Rubber Products Manufacturing), 331 (Primary Metal Manufacturing), 332 (Fabricated Metal Products Manufacturing), 333 (Machinery Manufacturing), 334 (Computer and Electronic Product Manufacturing), 335 (Electrical Equipment, Appliance, and Component Manufacturing), 336 (Transportation Equipment Manufacturing), or 339 (Miscellaneous Manufacturing), the assigned points are 30; if the property falls within NAICS Subsector Codes, 1 13 Forestry and Logging, 21 1 (Oil and Gas Extraction), 212 (Mining (except Oil and Gas)), 213 (Supporting Activities for Mining), 221 (Utilities), 3 1 1 (Food Manufacturing), 3 12 (Beverage and Tobacco Product Manufacturing), 3 13 (Textile Mills), 314 (Textile Product Mills), 3 15 (Apparel Manufacturing), 32 1 (Wood Product Manufacturing), 323 (Printing and Related Support Activities), 327 (Nonmetallic Mineral Product Manufacturing), 337 (Furniture and Related Product Manufacturing), 486 (Pipeline Transportation), 448 (Support Activities for Transportation), 5 11 (Publishing Industries), or 562 (Waste Management and Remediation Services), the assigned points are 20, and if the property falls within any other NAICS Subsector Code, the assigned points are 10. If any activity falls in more than one of these groupings, the category which results in the greatest number of points being assigned shall be used;

4.3.d.4. For any of these criteria, if the correct category is not

known, the category resulting in the greatest number of points shall be assumed to apply;

4.3.d.5. Applying the criteria described above, where the total number of points is 30 or 40, the application fee shall be $1,000; 50 or 60, the application fee shall be $3,000; and 70, 80 or 90, the application fee shall be $5,000; and

4.3.d.6. If the application covers 2 or more non-contiguous locations, the application fee shall be $5,000, provided that the locations under consideration display similar contaminant profiles and similar surface and subsurface characteristics. Similar surface/subsurface characteristics shall be construed to be limited to upland, riparian/wetland, karst or other similar land forms as approved by the secretary. If any of the individual locations includes a surface area greater than 2 acres, a separate application and fee must be submitted for that site.

4.4. Confidentiality. -- Information obtained by the department pursuant to this rule shall be available to the public unless the secretary certifies such information to be confidential. The secretary may make such certification where any person shows, to the satisfaction of the secretary, that the information or parts thereof, if made public, would divulge methods, processes or activities entitled to protection as trade secrets.

4.5. Action on Application. -- The secretary shall act upon all applications within 45 days of receipt, unless an extension of time is mutually agreed upon between the secretary and the applicant, and confirmed in writing.

§60-3-5. Licensed Remediation Specialists.

5.1. Professional Responsibilities of Licensed Remediation Specialists.

5.1.a. Any individual who wishes to practice as a licensed remediation specialist in the state of West Virginia must hold a valid remediation specialist license. Each individual shall have the burden of demonstrating to the secretary's satisfaction that he or she meets the requirements for licensing.

5.1.b. It is the licensed remediation specialist's duty to protect the safety, health and welfare of the public in the performance of his or her professional duties. If he or she is unable to meet this duty, the licensed remediation specialist may either sever the relationship with the client or employer or refuse professional responsibility for the work plan, report or design. If the relationship is severed, the applicant shall notify the division within 72 hours of the severing of the relationship Specific areas of professional responsibility are as follows:

5.1.b.1. The licensed remediation specialist is responsible for any release of contaminants during remediation activities undertaken pursuant to and contemplated in the approved remediation agreement, work plans or reports. The act of moving contaminants within a site in the course of remediation activities shall not be considered to be a release;

5.1.b.2. Where a release of contaminants in excess of those identified in the work plan occurs at the site during remediation activities, the licensed

remediation specialist shall immediately notify the division unless the release does not exceed reportable quantities found in 40 CFR Part 302;

5.1.b.3. A licensed remediation specialist shall only perform assignments for which the specialist is qualified by training and experience in those specific technical fields;

5.1.b.4. A licensed remediation specialist shall be objective in work plans, reports and opinions and avoid any conflict of interest with employer, clients and suppliers;

5.1.b.5. A licensed remediation specialist shall not solicit or accept gratuities, directly or indirectly from contractors, agents or other parties dealing directly with the employer or client in regard to professional services being performed at the work site;

5.1.b.6. A licensed remediation specialist shall not accept any type of bribe; falsify or permit misrepresentation of professional qualifications; intentionally provide false information to the secretary; or knowingly associate with one who is engaging in business or professional practices of fraudulent or dishonest nature; and

5.1.b.7. A licensed remediation specialist shall not charge any special fees above usual and customary professional rates for being licensed.

5.1.c. The secretary may revoke a license; suspend a license for not more than five years; or impose lesser sanctions as appropriate for acts or omissions in violations of this rule or W. Va. Code §22-22.

5.2. Application for licensure. -- Any individual who wishes to obtain a license to practice as a licensed remediation specialist must submit a complete and accurate application to the secretary on forms supplied by the secretary. An application fee, as specified in Table 60-3A of this rule, shall be submitted with the application. In order to qualify for the licensed remediation specialist examination, the applicant must demonstrate to the secretary that the following eligibility requirements have been met:

5.2.a. Minimum Education Requirements: All individuals applying for a license shall meet the requirements of one of the following tracks:

5.2.a.1. Standard Track: The individual has earned a baccalaureate, masters, or doctorate degree from an accredited educational institution in one of the following areas: biology, chemistry, earth sciences, environmental sciences, geology, hydrogeology, microbiology, soil sciences, toxicology, scientific subdisciplines of public health, risk assessment, or hazardous waste management, engineering, or in a curriculum determined to be equivalent by the secretary. The charter or accreditation of the recognized educational institution must have been effective as of the date the individual's degree(s) was granted; or

5.2.a.2. Alternative Track: The individual has earned at least a high school diploma, but does not meet the requirements for the standard track.

5.2.b. Minimum Experience Requirements: Each individual shall demonstrate to the secretary's satisfaction that he or she meets the requirements for relevant professional experience. Qualifying relevant professional experience must be work of a professional grade and character that indicates the individual is competent to perform professional services pursuant to the requirements of the Act.

5.2.b.1. Relevant professional experience shall include, at a minimum, practical knowledge of the following:

5.2.b.1.A. Remediation activities;

5.2.b.1.B. Procedures necessary to remediate a site;

5.2.b.1.C. Management of contaminants at a site, including, but not limited to:

5.2.b.1.C.1. Site investigation;

5.2.b.1.C.2. Health and safety protocol; and

5.2.b.1.C.3. Quality assurance.

5.2.b.1.D. Feasibility studies; and

5.2.b.1.E. Remedial design.

5.2.b.2. Standard Track: The individual must have six years of relevant professional experience, one of which is supervisory or project management related.

5.2.b.3. Alternative Track: The individual must have ten years of relevant professional experience, one of which is supervisory or project management related.

5.2.b.4. In addition to the practical knowledge criteria pursuant to paragraph 5.2.b.1 of this rule, the secretary will also consider the following criteria in evaluating whether an individual's remediation and practical experience, considered both individually and collectively, constitute sufficient relevant professional experience:

5.2.b.4.A. Proficiency;

5.2.b.4.B. Broad knowledge of the various remediation technologies;

5.2.b.4.C. Number of individuals and disciplines of other professionals supervised or coordinated;

5.2.b.4.D. Duration of employment;

5.2.b.4.E. Nature of work performed (including, but not limited to, whether such experience includes work at sites where subsurface investigations have occurred); and

5.2.b.4.F. Any other factors the secretary deems relevant.

5.2.b.5. The individual applying for licensing shall also provide the secretary with three professional

references, each of which, at a minimum, address the individual's range of practical knowledge and professional experience with regard to providing professional services under the Act.

5.2.b.6. Work performed during a period of full-time undergraduate study at an educational institution is considered part of the educational program and is not considered acceptable professional experience; provided, however, that the secretary may accept work performed for periods of at least two and one half consecutive months per calendar year when not enrolled as a full-time student, during, or incidental to, undergraduate education as relevant professional experience if the individual did not receive college credits for that work.

5.2.c. Credits: Individuals who have earned degrees from recognized educational institutions in addition to those required to meet the minimum educational requirements set forth in 5.2.a. may request that the secretary credit some or all of that additional education toward the requirements for relevant professional experience in accordance with the following:

5.2.c.1. Standard Track: One year credit for each master's degree, and two years credit for a doctorate degree, if the degrees are from a recognized educational institution in one of the academic areas identified in 5.2.a.1;

5.2.c.2. Alternative Track: One-half year credit for each associate's degree in one of the academic areas identified in 5.2.a.1; and

5.2.c.3. The secretary will grant to an individual up to two years maximum credit for additional education under the Standard Track; or up to one year maximum credit for additional education under the Alternate Track.

5.3. Licensing Examination: The secretary shall be responsible for implementing the following requirements, at a minimum, of the licensed remediation specialist examination:

5.3.a. Frequency and Scheduling: The secretary shall administer a licensing examination at least every six months to all individuals who have met the requirements for licensure. Examinations shall be held at the time(s) and location(s) set by the secretary. The secretary shall provide public notice at least 15 days prior to the application due date for the next scheduled examination;

5.3.b. Examination Format/Content: Examinations shall test the individual's overall regulatory understanding, and overall technical understanding. Overall regulatory understanding means an understanding of the relevant West Virginia Department of Environmental Protection regulations and related written policies and Federal environmental regulations. Overall technical understanding means demonstrating an understanding of basic concepts and methods in those scientific and technical fields related to assessment, containment, and remediation actions;

5.3.c. The secretary shall prepare the licensing examination;

5.3.d. The secretary shall

initially develop a minimum of three separate examinations. No single examination shall be repeated until the other two examinations have been given;

5.3.e. After any of the individual examinations have been used twice, the secretary shall prepare a minimum of three new examinations;

5.3.f. An individual may take an examination only if the applicable examination fee established by the secretary has been paid. The examination fee, as specified in Table 60-3A of this rule, shall be submitted after an applicant's eligibility to take the exam has been confirmed with the application. Payment shall be made in full by check or money order payable to the West Virginia Department of Environmental Protection. The examination fee is non-refundable, except in the following circumstances:

5.3.f.1. An individual whose failure to appear for the examination is found, by the secretary, to be due to circumstances beyond the individual's reasonable control, shall receive a refund or may request that the application be held open until the individual can take a subsequent examination that occurs within two years of the date the secretary approved the individual's written application.

5.3.g. Examination Procedures and Rules: Each individual shall present some form of photographic identification prior to taking the test. The secretary shall identify whether he or she may use any books, notes, memoranda, scratch paper, non-programmable calculators, or other materials during the examination. No individual may discuss the examination or other procedures, and no individual may make copies of the examination;

5.3.h. The secretary shall establish the passing score prior to administering the examination;

5.3.i. Examination Results: The secretary shall grade the examinations, and the results shall be mailed to each individual within 30 days of the examination. The examination papers will not be returned to the individual;

5.3.j. Reapplication for Examination: Individuals who fail to achieve a passing score on the examination may take a subsequent examination subject to the following procedures:

5.3.j.1. An individual shall be allowed to take a subsequent examination that is scheduled to occur on a date not more than two years after the date the secretary approved the individual's written application, upon receipt by the secretary of the following items:

5.3.j.1.A. A letter stating the individual's intention to take the subsequent examination; and

5.3.j.1.B. The appropriate examination fee;

5.3.j.2. Individuals who seek to take a subsequent examination that is scheduled for a date that is greater than two years after the date the secretary approved the individual's written application must submit the following:

5.3.j.2.A. Licensing application as per the procedures set forth in 5.2; and

5.3.j.2.B. The full application fee described in 5.2 prior to taking the examination.

5.3.k. Waiver of Examination. -- If an individual requests a waiver of the examination for licensure as a Remediation Specialist, the application shall include any and all information that the applicant desires to be considered including but not limited to relevant licenses and certifications. The secretary may issue a one time waiver of the examination for the purpose of submitting an application for a Voluntary Remediation Agreement. This waiver shall only be valid for six months after the effective date of the rule. No remediation workplan shall be implemented unless and until the Remediation Specialist has passed the examination. However, to be eligible for a waiver, these individuals shall meet all other requirements for licensing, including, but not limited to, education, relevant professional experience, and practical knowledge;

5.3.k.1. An examination fee must be submitted regardless of whether the applicant is requesting a waiver of the examination.

5.3.l. Reciprocity. A licensed remediation specialist in another state may be licensed as a remediation specialist in West Virginia without examination provided that the licensing state recognizes West Virginia licensure.

5.3.l.1. An examination fee must be submitted regardless of whether reciprocity applies.

5.4. License renewal.

5.4.a. A licensed remediation specialist in good standing may have his/her license renewed every two years. A renewal application filed in accordance with all appropriate time frames which includes the appropriate license renewal fee found in Table 60-3A will be considered a complete renewal application. A renewal application shall include evidence of continuing education in the environmental remediation field. Such evidence may include two education credits from a US EPA-approved course or any other equivalent experience acceptable to the secretary.

5.4.b. The secretary will provide a license renewal notice to the licensed remediation specialist 90 days prior to his or her license expiration. Any individual who fails to renew their license may not continue to practice as a licensed remediation specialist after the day of license expiration. Any individual who fails to renew their license within 30 days of the expiration must reapply for examination and is subject to the same requirements as a new applicant.

5.4.c. An individual who has completed in a timely manner all of the license renewal requirements will receive a renewed license and may continue to practice as a licensed remediation specialist prior to receiving the renewed license by registered mail.

5.4.d. Where there has been an application timely filed for renewal of a license and the secretary determines that grounds exist for non-renewal of the license,

the secretary shall follow the same procedure for suspension or revocation of licenses in subsection 5.5 of this rule and, pending a final decision by the secretary on such renewal, the license shall remain in effect.

5.5. Suspension and Revocation of Licenses. The provisions set forth in this subsection shall be in addition to and shall not limit the procedures regarding enforcement orders contained in W. Va. Code §22-22-12.

5.5.a. Criteria for suspension or revocation of license. A license issued to a licensed remediation specialist may be suspended or revoked for the following reasons:

5.5.a.1. For fraud by the licensed remediation specialist in the license application process;

5.5.a.2. For fraud or intentional misrepresentation by the licensed remediation specialist in the performance of any work required in a work plan or pursuant to a voluntary remediation agreement;

5.5.a.3. For any act by the licensed remediation specialist in violation of this rule; or

5.5.a.4. Any circumstances that justify revocation of a license under this rule may also justify the non-renewal of such license.

5.5.b. Issuance of Notice of Intent -- If the secretary finds that sufficient grounds exist to suspend or revoke the license of a licensed remediation specialist, prior to the suspension or revocation, the secretary shall notify the licensed remediation specialist of the secretary's intent to suspend or revoke the license. The secretary shall provide the licensed remediation specialist with a Notice of Intent to Suspend or Revoke by certified mail, return receipt requested. The Notice shall set forth the specific reasons for the proposed suspension or revocation and shall state that the licensed remediation specialist may request an informal conference or a contested case hearing as provided in W. Va. Code §29A-5-1 on the proposed suspension or revocation. The purpose of the informal conference and the contested case hearing is to determine the rights, duties, interests and privileges of the licensed remediation specialist. The secretary may appoint an impartial hearing officer to conduct an informal conference or contested case hearing.

5.5.c. Request for Informal Conference or Contested Case Hearing. -- The licensed remediation specialist has 30 calendar days from the receipt of the notice to make a written request for an informal conference or contested case hearing. A request is deemed served the day it is deposited in the United States mail. Failure to respond will result in the imposition of the proposed suspension or revocation. The licensed remediation specialist shall have a right to an informal conference prior to a formal hearing. The licensed remediation specialist may request an informal conference or a contested case hearing, but the request for and holding of an informal conference does not preclude the licensed remediation specialist from requesting a contested case hearing following the disposition reached in the informal conference.

5.5.c.1. The issuance of a notice of intent to suspend or revoke the license of a licensed remediation specialist shall not prevent the licensed remediation specialist from rendering services under the voluntary remediation program pending a final decision from the secretary following an informal conference and, if requested, a contested case hearing.

5.5.d. In all proceedings under this section, the licensed remediation specialist may be represented by counsel. All notice required by this rule shall be sent to counsel in the same manner as is required to be provided to the licensed remediation specialist.

5.5.e. Informal conference. -- If an informal conference is requested within the thirty day period, the secretary shall schedule the conference to be held within 30 days in accordance with the following requirements:

5.5.e.1. The secretary shall notify the licensed remediation specialist and the primary representative of the Department of Environmental Protection who was involved in the decision to suspend or revoke the licensed remediation specialist's license of the time and place of the informal conference. In scheduling the location of the informal conference, the compliance officer shall consider the location of the licensed remediation specialist's business and any particular sites that may have given rise to the decision to revoke or suspend;

5.5.e.2. The secretary shall notify the licensed remediation specialist of the informal conference at least 15 calendar days prior to the date of the informal conference; and

5.5.e.3. The secretary may continue the informal conference upon the agreement of the licensed remediation specialist or for good cause shown.

5.5.f. Informal Conference Procedures. An informal conference, as provided by these regulations, is intended to be an informal discussion of the facts which gave rise to the issuance of the decision to suspend or revoke a license. The secretary shall conduct the conference in the following manner:

5.5.f.1. The secretary shall be guided by, but need not strictly apply, the West Virginia Rules of Civil Procedure and West Virginia Rules of Evidence;

5.5.f.2. A record of the informal conference is not required but any party may request that a record be made at that party's expense. Any other party to the conference may obtain copies of the record at his expense;

5.5.f.3. During an informal conference the licensed remediation specialist may submit to the secretary any evidence or demonstration of mitigating circumstances as to why the secretary should alter the decision to suspend or revoke the license; and

5.5.f.4. At any review proceedings which may occur later, no evidence as to any oral statement made by one party at the informal conference may be introduced as evidence by another party, nor may any statement be used to impeach a witness, unless the statement is or was available as competent evidence

independent of its introduction during the informal conference.

5.6. Written Decision.

5.6.a. If the licensed remediation specialist and the secretary are able to reach an agreement, the secretary shall prepare a written decision signed by the licensed remediation specialist and the secretary implementing the decision reached in the informal conference.

5.6.b. If the licensed remediation specialist and the secretary are unable to reach an agreement, within 30 calendar days following the informal conference, the secretary shall issue and furnish to the licensed remediation specialist a written decision affirming, modifying or dismissing the initial proposal to suspend or revoke the license and give the specific reasons for the decision. The notice of decision by the secretary shall be sent to the licensed remediation specialist by certified mail return receipt requested.

5.6.c. Within 30 calendar days of the receipt of the secretary's written decision, the licensed remediation specialist may demand a formal hearing as provided herein to determine the rights and privileges of the licensed remediation specialist. The licensed remediation specialist must serve a request in writing upon the secretary within 30 days of receipt of the written decision. A request is deemed served on the day it is deposited in the United States mail. Failure to request a formal hearing on the written decision within the time specified shall cause the decision to become a final unappealable order of the secretary.

5.7. Contested Cases, Right to a Formal Hearing. As set forth above, within thirty (30) calendar days after notification of a written decision rendered as a result of an informal conference, the licensed remediation specialist may request a formal hearing before the secretary in accordance with the Administrative Procedures Act, W. Va. Code §29A-5-1 et seq. If requested the secretary shall grant the request and schedule a contested case hearing.

5.8. Appeals. An appeal from any final order or ruling entered in a contested case in accordance with these regulations shall be to the Circuit Court of Kanawha County in accordance with the provisions of the Administrative Procedures Act, W. Va. Code §29A-5-1 et. seq.

5.9. Alternative Procedure. When imminent or substantial harm is threatened or posed at a voluntary remediation site which in the secretary's opinion is attributable to the negligence or incompetence of the licensed remediation specialist at the site, the secretary may, in lieu of the Notice of Intent under subdivision 5.5.b. of this rule, issue an order in accordance with W. Va. Code §22-22-12(a)(1). If a request for reconsideration is filed as provided in W. Va. Code §22-22-12(b), the secretary shall conduct a contested case hearing within ten days of the filing of such request.

§60-3-6. Voluntary Remediation Agreement.

6.1. Any person who desires to participate in the voluntary remediation program shall execute a voluntary remediation agreement with the secretary of the Department of Environmental Protection. The agreements contained in

Appendix 60-3A and 60-3B meet the requirements of this section. Additional provisions and modifications consistent with this rule may be agreed to by the applicant and the secretary. Except as provided in subsection 6.4 of this rule, the Voluntary Remediation Agreement shall provide for the following:

6.1.a. The services of a licensed remediation specialist for the supervision of all activities described in the agreement, including the supervision of remediation contractors;

6.1.b. The recovery of all reasonable costs incurred by the Department of Environmental Protection attributable to the implementation of the agreement in excess of fees submitted with the permit application. Recoverable costs shall include the following:

6.1.b.1. Costs incurred in review and oversight of work plans and reports submitted pursuant to the agreement;

6.1.b.2. Costs incurred as the result of field activities attributable to the agreement;

6.1.b.3. Such other costs incurred by the Department of Environmental Protection in implementing and overseeing activities under the agreement;

6.1.b.4. All recoverable costs shall be billed against any deposit and subsequently by separate invoice; and

6.1.b.5. Recoverable costs shall be determined by the number of hours worked under the agreement by each primary employee multiplied by 2.5 times the hourly rate of each such employee and then adding the direct expenses incurred by each such employee.

6.1.c. A schedule for the payment of recoverable costs;

6.1.d. A description of any work plan or report that is to be submitted under the agreement for review by the secretary, including the final report which shall provide all information necessary to verify that all work contemplated by the agreement has been completed: provided, however, that at the discretion of the applicant, work plans describing the work to be performed at the site may be submitted for approval by the secretary with the execution of the agreement;

6.1.e. The identification of appropriate tasks, deliverables and schedules for the submission of any work plans and other deliverables and for the performance of the remediation;

6.1.f. A listing of all environmental statutes and rules for which compliance is mandated;

6.1.g. A listing of the technical standards as determined in the guidance document to be applied in evaluating the site assessment, the work plans and reports, with reference to the proposed future land use to be achieved;

6.1.h. A listing of the applicable standards to be achieved at the site;

6.1.i. Where applicable, a description of any engineering or institutional controls and any land use covenant to be imposed for the property;

6.1.j. The reopening of the voluntary remediation agreement upon consent of the parties or the occurrence of one or more of the conditions described in section 16 of the Act;

6.1.k. The modification of the voluntary remediation agreement upon the agreement of the parties; and

6.1.l. Field adjustments which achieve equal performance may be implemented by the licensed remediation specialist provided he or she notifies the division within 15 days.

6.2. The voluntary agreement shall recognize the right of the applicant to terminate the agreement, in its sole discretion, upon 15 days advance written notice of termination to the Department of Environmental Protection and shall include provisions for the recovery of costs incurred by the Department of Environmental Protection before the notice of termination is issued.

6.3. The voluntary remediation agreement may provide a mechanism for alternate dispute resolution between the parties to the agreement, including, but not limited to arbitration or mediation of any disputes under the agreement.

6.4. For a site where the applicant intends to demonstrate that the site meets all applicable standards without further remediation, in lieu of the requirements of subsection 6.1 of this rule, the voluntary remediation agreement shall provide for the following:

6.4.a. The payment of an agreed sum to cover all reasonable costs incurred by the Department of Environmental Protection attributable to the agreement in excess of fees submitted with the permit application;

6.4.b. A listing of all environmental statutes and rules for which compliance is mandated;

6.4.c. A listing of the technical standards as determined in the guidance document that are applied in evaluating the site assessment with reference to the proposed future land use to be achieved;

6.4.d. A listing of the applicable standards to be achieved at the site;

6.4.e. The reopening of the agreement upon the occurrence of one or more of the conditions described in section 16 of this rule; and

6.4.f. Where applicable, a description of any engineering or institutional controls and any land use covenant to be imposed for the property.

6.5. The voluntary remediation agreement shall reflect the secretary's determination of eligibility in accordance with section 3 of this rule.

6.6. At the discretion of the applicant, the voluntary remediation agreement may address all or only a portion of a site. At the discretion of the secretary

the voluntary remediation agreement may cover two or more non-contiguous sites; provided that the sites display similar contaminant profiles and similar surface and subsurface characteristics. Similar surface and subsurface characteristics shall be construed to be limited to upland, riparian/wetland, karst or other similar land forms as approved by the secretary.

6.7. Where the applicant is a person other than the current owner of the site, and the voluntary remediation agreement contemplates the imposition of a land use covenant as provided in section 13 of this rule, the agreement shall have appended to it a provision signed by the current owner(s) of the site authorizing and agreeing to cooperate in the execution and filing of a land use covenant in accordance with the voluntary remediation agreement.

6.8. Upon execution of the voluntary remediation agreement by the parties, the secretary shall not initiate any enforcement action against the applicant or any person described in section 18 of the Act for the contamination that is the subject of the agreement, unless there is an imminent threat to the public. Upon final adoption of this rule, the secretary intends to issue a policy statement to the effect that no enforcement action shall be initiated against any applicant from the time the application is filed until the voluntary remediation agreement is signed so long as the applicant acts in good faith to negotiate a reasonable agreement.

6.9. At the applicant's discretion, he or she may in the interest of minimizing environmental contamination and promoting effective cleanups, begin cleanup of soil and groundwater before the voluntary remediation agreement is approved provided that he or she notifies the secretary.

§60-3-7. Public Involvement/Public Notification. -- Except to the extent incorporated by reference in subdivision 7.12.b, the requirements of subsections 7.1 through 7.8 of this section shall apply only to brownfield applicants as that term is defined in section 2 of this rule. The provisions of subsections 7.9 through 7.12 of this section shall be applicable only to applicants who are not brownfield applicants.

7.1. Notice of Intent to Remediate. -- All brownfield applicants shall file a Notice of Intent to Remediate a brownfield site with the secretary. The notice shall be part of and filed with the application to perform a brownfield remediation.

7.1.a. The Notice of Intent to Remediate shall contain, to the extent known, the following:

7.1.a.1. The name and business address of the brownfield applicant, including street address or route number;

7.1.a.2. Geographic location of site and any name by which the site is locally known;

7.1.a.3. Current and former uses of site;

7.1.a.4. Proposed future use of site;

7.1.a.5. Present and suspected contaminants on site;

7.1.a.6. Proposed methods to remediate the site;

7.1.a.7. Proposed methods to control possible health exposure;

7.1.a.8. Location/address where interested persons may review the notice;

7.1.a.9. Name, address and telephone number of brownfield applicant contact for questions from interested individuals; and

7.1.a.10. Name, address and telephone number of Department of Environmental Protection contact where comments and questions can be received.

7.2. Department of Environmental Protection Notice to the Public.

7.2.a. Upon receipt of a Notice of Intent to Remediate, the Department of Environmental Protection shall publish a summary of the notice in a Department of Environmental Protection publication of general circulation. Information contained in the summary shall meet the requirements set forth in subsection 7.1 of this rule.

7.2.b. The summary also shall include information on the public's right under the Voluntary Remediation and Redevelopment Act to become involved in the development of the remediation and reuse plans for the site.

7.2.c. The Department of Environmental Protection shall issue a news release summarizing the Notice. The news release shall be sent to media outlets serving the general area where the remediation is proposed.

7.2.d. The Department of Environmental Protection also may post the Notice and information required under this section on the Department of Environmental Protection's Internet Website.

7.3. Notice to Governmental Agencies.

7.3.a. Upon receipt of a Notice of Intent to Remediate, the secretary shall notify the municipality and the county commission where the site is located.

7.3.b. Notice shall be issued to the county and/or municipal land use agency, or the area's Regional Planning and Development Council created under W. Va. Code §8-25-1.

7.3.c. Notice may be issued to the U.S. Environmental Protection Agency, U.S. Army Corps of Engineers, state Bureau for Public Health and other state or federal agencies that may have an interest in the remediation project.

7.3.d. The secretary shall notify the government agencies identified in this section of the Department of Environmental Protection's final decision on a Certificate of Completion.

7.4. Notice of Intent to Remediate Comment Period and Information Meeting.

7.4.a. The secretary shall require a 30-day comment period and information meeting on all Brownfield Notices of Intent to Remediate filed with the

Department of Environmental Protection. Costs incurred under this section shall be paid by the brownfield applicant.

7.4.b. To notify the public of the start of the 30-day comment period, the brownfield applicant shall:

7.4.b.1. Erect a sign on the proposed brownfield site informing the community the site is being considered for participation in the state's brownfield program, under the Voluntary Remediation and Redevelopment Act;

7.4.b.2. The sign must be placed on the property so it is clearly visible and legible, and shall be, at a minimum, three feet by four feet;

7.4.b.3. The sign shall state: "This site is under consideration for environmental cleanup and participation in the state's brownfield program under the Voluntary Remediation and Redevelopment Act;"

7.4.b.4. The sign shall include the telephone number and address of the Department of Environmental Protection's brownfield office;

7.4.b.5. Publish a commercial box advertisement in a local newspaper of general circulation in the county where the brownfield remediation is proposed once a week for four consecutive weeks;

7.4.b.6. The advertisement shall be, at a minimum, four inches by four inches;

7.4.b.7. The advertisement shall contain information as set forth in subsection 7.1 of this rule, plus the time, date and location of the information meeting;

7.4.b.8. The brownfield applicant shall send a copy of the advertisement to the municipality and the county commission, the county and/or municipal land use agency, or the area's Regional Planning and Development Council created under W. Va. Code §8-25-1.

7.4.b.9. The Department of Environmental Protection shall draft the advertisement and send it to the brownfield applicant for publication; and

7.4.b.10. The brownfield applicant shall submit certified and notarized proof of publication to the Department of Environmental Protection no later than four weeks after the last publication date. The certification of publication shall be made part of the final brownfield remediation agreement file.

7.4.c. The information meeting is to occur by day 21 of the 30-day comment period, provided that a minimum of 15 days notice is given for such meeting. The information meeting shall address how remediation issues are applied to the site, site risk issues including key risk assessment assumptions, uncertainties, populations considered, the context of site risk to other risks, and how the remedy will address site risks.

7.4.d. The information meeting for the purpose of informing the public shall occur in the community where the proposed brownfield remediation is to occur.

7.5. Public Inspection of Brownfield Notice of Intent to Remediate.

7.5.a. A Brownfield Notice of Intent to Remediate filed with the Department of Environmental Protection shall be available for public inspection and copying.

7.5.b. The Notice shall be available upon request at the Department of Environmental Protection's Division of Waste Management in Charleston, and in the municipal and/or county commission offices where the remediation is proposed. Copies of the Notice also may be placed in the county library.

7.6. Request to Participate in Remediation and Reuse Planning.

7.6.a. Any person may ask to be involved in the development of a brownfield remediation and reuse plan.

7.6.b. Requests to participate in a brownfield remediation and reuse plan shall be made in writing to the secretary during the 30-day comment period.

7.6.c. Each person who files a request may participate in the development of the remediation and reuse plan, in person or by representative.

7.7. Brownfield Public Involvement Plan.

7.7.a. The brownfield applicant shall establish a Public Involvement Plan if requested by the public, county, municipality, or the secretary.

7.7.b. The brownfield applicant, in consultation with the persons requesting to be involved in the remediation and reuse of a brownfield site, shall develop a Public Involvement Plan within 30 days of receiving notice from the secretary that a request to participate, as provided in subsection 7.6 of this rule, has been received.

7.7.c. The brownfield applicant shall submit the Public Involvement Plan to the secretary for his/her review and approval prior to its implementation.

7.7.d. The Public Involvement Plan shall include, but is not limited to:

7.7.d.1. Provisions for further meetings in the community; and

7.7.d.2. Opportunities for participants to review and comment on each work plan as well as review and comment on the voluntary agreement before it is finalized and accepted by the secretary.

7.7.e. The secretary shall consider comments from participants and the brownfield applicant's responses to comments regarding the voluntary agreement, work plans, and reports before deciding whether to approve the submission.

7.7.f. Means of communicating with a community, may include, but is not limited to:

7.7.f.1. Brownfield applicant point-of-contact with public;

7.7.f.2. Establish and maintain mailing and telephone list of

interested individuals;

7.7.f.3. Newsletter;

7.7.f.4. Doorstep notice to residents and businesses;

7.7.f.5. Newspaper, radio, and television advertisements;

7.7.f.6. News releases to local media;

7.7.f.7. Presentations to local civic organizations; and

7.7.f.8. Citizen advisory panel for development of remediation and reuse plan.

7.7.g. The Public Involvement Plan shall remain in effect until the Certificate of Completion is issued, or until the brownfield applicant withdraws from the brownfields program.

7.8. Technical Assistance. -- At any time during the life of the Public Involvement Plan, the participants other than brownfield applicants may petition the secretary for technical assistance related to:

7.8.a. Review of site-related documents;

7.8.b. Explaining technical information to panel members;

7.8.c. Translating technical information into language understandable to non-technical persons;

7.8.d. Providing assistance in communicating the concerns of the non-brownfield applicant members of the panel to the appropriate persons; or

7.8.e. Such other areas deemed appropriate by the secretary.

7.8.e.1. Upon receipt of such petition, the secretary and the brownfield applicant, by mutual agreement, will develop a technical assistance component to the Public Involvement Plan. Comments from other participants shall be considered in the development of such component. The applicant shall be responsible for expenses incurred in this process.

7.9. Public Notice of Applications for Voluntary Remediation Projects. -- Except for applications from brownfield applicants, upon receipt of an application to conduct a voluntary cleanup under the Act, the Department of Environmental Protection shall publish a summary of the application in a Department of Environmental Protection publication of general circulation. Information contained in the summary shall include:

7.9.a. The name and business address of the applicant, including a street address or route number;

7.9.b. Geographic location of site and/or, if one exists, the locally used name of the area;

7.9.c. Current use of site;

7.9.d. Suspected contaminants on site;

7.9.e. Proposed methods to clean up site;

7.9.f. Proposed methods to control possible health exposure;

7.9.g. Location address of where interested persons may review

application;

7.9.h. Name, address and telephone number of applicant contact for questions from interested individuals; and

7.9.i. Name, address and telephone number of Department of Environmental Protection contact where comments and questions can be received.

7.9.i.1. The Department of Environmental Protection shall issue a news release summarizing the application. The news release shall be sent to media outlets serving the general area where the remediation is proposed.

7.10. Public Inspection of Voluntary Application.

7.10.a. A voluntary cleanup application filed with the Department of Environmental Protection shall be available for inspection and copying by the public.

7.10.b. The application shall be available upon request at the Department of Environmental Protection's Office of Waste Management in Charleston and in the municipal and/or county commission offices where the remediation is proposed. Copies of the application also may be placed in the county library.

7.11. Public Involvement for Site Remediation Loans.

7.11.a. In the event an applicant to participate in the voluntary remediation program becomes a brownfield applicant, he/she shall be required to comply with subsections 7.4, 7.6, 7.7, and 7.8 of this rule.

7.12. Public Involvement/Public Notification in Development of Remediation Goal.

7.12.a. In the development of remediation goals pursuant to subdivisions 9.3.d and 9.4.a of this rule, the secretary shall require a 30-day comment period and information meeting.

7.12.b. To notify the public of the start of the 30-day comment period, the applicant shall comply with paragraphs 7.4.b.5; 7.4.b.6; 7.4.b.7; 7.4.b.8; 7.4.b.9; 7.4.b.10; and subdivisions 7.4.c and 7.4.d of this rule.

7.12.c. The applicant shall respond to comments received during the comment period and submit the responses to the secretary and any commenters.

7.12.d. The secretary shall review the comments and applicant's responses when making a decision. The secretary shall notify the parties who provided comments during the comment period of his/her decision.

§60-3-8. Risk Protocol.

This section establishes a risk protocol for conduct of human health and ecological risk assessments. It describes general requirements for risk assessments and specific requirements for baseline human health and ecological risk assessments, residual risk assessments, and application of probabilistic risk assessment methods.

8.1. General Requirements for Risk Assessments. Risk assessments shall consider existing and reasonably anticipated future human exposures and significant adverse effects to ecological receptors of concern in accordance with this rule.

8.1.a. Risk assessments may be conducted using either deterministic (single point value) or probabilistic risk assessment methodologies as agreed to in the Voluntary Remediation Agreement.

8.1.b. Risk assessments, to the extent practicable, shall consider the range of probabilities of risks potentially occurring, the range of size of populations likely to be exposed, current and reasonably anticipated future land and water uses, and quantitative and/or qualitative descriptions of uncertainties in accordance with subsections 8.1 and 8.2 of this rule.

8.1.c. Appropriate sources of toxicity information include the following:

8.1.c.1. For human health risk assessments, in order of preference.:

8.1.c.1.A. U.S. EPA Integrated Risk Information System (IRIS);

8.1.c.1.B. U.S. EPA Superfund Health Risk Technical Support Center (SHRTSC) provisional criteria;

8.1.c.1.C. Other scientifically valid documents or information developed from governmental or non-governmental sources and approved by the secretary.;

8.1.c.2. For ecological risk assessments:

8.1.c.2.A. U.S. EPA AQUIRE Data Base;

8.1.c.2.B. U.S. EPA IRIS Data Base;

8.1.c.2.C. U.S. EPA HEAST Data Base;

8.1.c.2.D. U.S. EPA ASTER Data Base;

8.1.c.2.E. U.S. EPA PHYTOTOX Data Base;

8.1.c.2.F. U.S. EPA Terrestrial Toxicity Data Base (TERRATOX);

8.1.c.2.G. U.S. Fish and Wildlife Service Technical Reports;

8.1.c.2.H. Oak Ridge National Laboratory Toxicological Benchmark Technical Reports;

8.1.c.2.I. Other U.S. EPA documents acceptable to the secretary;

8.1.c.2.J. ATSDR Toxicological Profiles;

8.1.c.2.K. Other peer-reviewed technical publications; and

8.1.c.2.L. Data developed in accordance with a peer-reviewed scientific testing protocol and approved by the secretary.

8.1.d. Risk assessments may include the use of fate and transport models subject to secretary approval of the model and the data to be used for the parameters specified in the model.

8.1.d.1. The secretary shall insure that any fate and transport model approved for use is capable of simulating those site conditions and contaminant

properties that might have a significant impact on site-specific contaminant fate or transport.

8.1.d.2. Sensitivity analyses of models and data used in model parameters shall be included in risk assessments. Sensitivity analyses shall be based on the range of conditions which historically occurred at the site.

8.1.d.3. For models not included in division guidance documents, a description shall be included in the risk assessments.

8.1.d.4. Where available, the department shall give preference to the use of peer-reviewed models and data for which on-site validation is demonstrated.

8.1.e. The use of population risk estimates in addition to individual risk assessments is provided for as follows:

8.1.e.1. For human health risk assessments, risk estimates shall initially be made at the level of the individual. A population-based risk assessment may be conducted where the applicant determines it would be practicable and of assistance in evaluating the appropriateness of the remedial action; and

8.1.e.2. For ecological risk assessments, risk estimates shall be made: (i) at the individual level where any endangered and threatened species is significantly impacted by the proposed activities at the site; and (ii) at the level of the population for all ecological receptors of concern exposed to contaminants at the site.

8.2. Sampling protocol, data requirements and sampling methods. -- The applicant shall use appropriate sampling approaches and data quality requirements and statistical methods as approved by the secretary to support the risk assessment and remedy selection process.

8.2.a. Characterization of site contamination. A sufficient number of environmental media samples shall be collected and analyzed as to provide a reasonable characterization of the nature and distribution of site contaminants. The number and location of the samples to be collected shall be of sufficient quantity and quality to calculate the appropriate exposure point concentration as defined in subparagraph 8.4.b.3.B and subdivision 8.5.c of this rule.

8.2.b. Media to be sampled. Samples shall be collected and analyzed from those media that are reasonably anticipated to have been impacted from contaminants at the site, considering the nature of the site operations and the nature of the contaminants of potential concern at the site.

8.2.c. Contaminants for analyses. Not all samples will need to be analyzed for the same contaminants. Samples collected shall be analyzed for those contaminants that are reasonably anticipated to be encountered, considering the nature of the site operations and the nature of the substances used or disposed of at the site.

8.2.d. Data validation. The quality of the analytical data to be used shall be validated by review of at least ten percent of the data or some other percentage agreed to by the secretary in accordance with standard

EPA protocols. Standard EPA protocols for validation may need to be modified, with the secretary's approval, depending on the type of analyses performed (e.g., Contract Laboratory Protocol or SW-846).

8.2.e. The 95th percentile upper confidence limit on the mean concentration, or the maximum value of the site contaminant concentration data shall be a reasonable estimate of a plausible exposure point concentration for this contaminant. If a contaminant can be shown to have dissimilar distributions of concentrations in different areas, then the areas should be subdivided. For example "hot spots" may be considered separately.

8.3. Quantification of cumulative risks posed by multiple exposure pathways. (Reserved)

8.4. Baseline Human Health Risk Assessments (BHHRA). A BHHRA may be used to provide a characterization of the risks to human health posed by contaminants at the site, given a full evaluation of site-specific conditions.

8.4.a. The BHHRA may be used either to:

8.4.a.1. Assess the need for remedial action considering site-specific conditions; or

8.4.a.2. Demonstrate the acceptability of current site conditions with respect to the remediation standards specified in this rule.

8.4.b. BHHRAs shall include, but are not limited to, the following information:

8.4.b.1. A conceptual site model showing contaminant sources, release mechanisms, transport routes and media, potential human receptor populations, and reasonably potential exposure scenarios based on current and reasonably anticipated land and water uses;

8.4.b.2. Data quality objectives for the human health risk assessment based on the conceptual site model;

8.4.b.3. An exposure assessment that evaluates the potential for and magnitude of human exposure, considering both the current and reasonably anticipated future land and water uses at, and in close proximity to the site. An exposure assessment shall include:

8.4.b.3.A. An exposure pathway analysis which identifies complete exposure pathways from contaminants to receptor populations shall be performed. The nature and extent of site contamination, the presence or absence of media that could transport such site contamination, the presence or absence of receptor populations that could be exposed to the contamination, and the likely exposure routes shall be identified; and

8.4.b.3.B. If, following the performance of the exposure pathway analysis, the potential exists for exposure of receptor populations to site contaminants, the magnitude of the exposure shall be quantified in accordance with division guidance documents. At a minimum, exposure levels that approximate an estimate of central tendency and reasonable upper bound of the exposure distribution shall be developed.

8.4.b.4. A toxicity analysis shall be performed if the potential for human exposure to site contaminants is identified and quantified in accordance with subparagraph 8.4.b.3.B of this rule. The toxicity analysis shall include a summary of current information regarding the carcinogenic and non-carcinogenic effects of the identified contaminants of concern as well as current slope factors and reference doses from the sources described in subdivision 8.1.c of this rule.

8.4.b.5. Risk Characterization. If the potential exists for human exposure to site contaminants, the exposure quantification information shall be integrated with the dose-response assessment (toxicity analysis) to provide a characterization of the potential risks present at the site. The risk characterization shall include a quantification of risks from individual contaminants. The applicant shall include a quantification of cumulative risks posed by multiple contaminants using the most sensitive exposure pathway for each constituent. The risk characterization shall analyze the following:

8.4.b.5.A. Non-Carcinogenic Risk: In quantifying risks from individual systemic toxicants at the site, a hazard quotient shall be developed for each contaminant . In quantifying the risks from cumulative exposure to multiple contaminants at the site, a hazard index for exposures to multiple contaminants shall be developed. In developing the hazard index for multiple contaminants, additivity shall be assumed only for those contaminants that affect the same target organ or act by the same method of toxicity;

8.4.b.5.B. Carcinogenic Risk: In quantifying risks from carcinogens at the site, the excess lifetime cancer risk shall be estimated above and beyond the risk associated with background exposures. Such risk estimates are presumed to be additive unless an alternative mechanism is appropriate; and

8.4.b.5.C. A discussion of any available facility-specific human health studies, and consideration of any other non-quantified (qualitative) risks shall be included as appropriate.

8.4.b.6. Uncertainty Analysis: As part of performing the site-specific risk assessment under this section, the qualitative, and to the extent practicable, the quantitative uncertainty embodied in the analysis shall be identified. The likelihood of overestimating or underestimating risk shall be identified for each element of the analysis. At a minimum, this shall include consideration of:

8.4.b.6.A. The analytical characterization of the site;

8.4.b.6.B. The exposure assessment, including the size of the potentially exposed population; and

8.4.b.6.C. The dose-response assessment, including the toxicological criteria used in the analysis.

8.5. Baseline Ecological Risk Assessment. A site-specific De Minimus screening ecological evaluation as specified in subsection 9.5 of this rule may be performed by the applicant as part of the site investigation to determine if a complete exposure pathway exists and there are

ecological receptors of concern. If, after this evaluation, a potentially significant complete exposure pathway is identified, then the applicant shall complete the uniform ecological evaluation as specified in subsection 9.6 of this rule to determine if site concentrations exceed benchmark levels. If the applicant proposes remediation goals that exceed benchmark levels, then, at the secretary's discretion, a baseline ecological assessment may be required to evaluate potential risks to ecological receptors and to develop appropriate remediation standards based on these risks. If a baseline ecological risk assessment is determined to be necessary, it shall address, but not be limited to, the following information:

8.5.a. Problem Formulation. The purpose (goals) of the assessment shall be identified and the problem defined. This step includes identification of potential contaminants of concern, potential ecological effects, potential ecological receptors of concern, potential exposure pathways, and initial assessment and measurement endpoints; all with respect to current and reasonably anticipated future land and water uses. A conceptual site model shall be developed to depict how the site conditions might affect ecological components of the natural environment;

8.5.b. Data Quality. Data quality objectives for the site based on the conceptual site model shall be developed;

8.5.c. Exposure Analysis. An exposure assessment that evaluates the potential for and magnitude of ecological effects to receptors of concern considering current and reasonably anticipated future conditions at the site shall be performed. Exposure is analyzed by describing the source and releases, the distribution of the stressor in the environment, and the extent and pattern of contact or co-occurrence. The end product of this analysis is an exposure profile which summarizes the magnitude and spatial and temporal patterns of exposure for the scenarios described in the conceptual site model;

8.5.d. Ecological Response Analysis. An ecological response analysis shall be developed which includes a summary of current information regarding the toxicological and ecological effects of the identified contaminants of ecological concern, as well as ecological benchmark values. Appropriate sources of toxicity information are identified in paragraph 8.1.c.2 of this rule;

8.5.e. Ecological Risk Characterization. If the potential exists for significant ecological risks due to exposure to site contaminants, the exposure quantification information in subdivision 8.5.c of this rule shall be integrated with the ecological response analysis to provide a characterization of the risks presented at the site, considering current and reasonably anticipated future land and water uses. The risk characterization shall include a quantitative evaluation of ecological risks potentially associated with the site, a weight-of-evidence analysis of risk, a discussion of available site-specific ecological studies, and consideration of the non-quantified (qualitative) risks as appropriate; and

8.5.f. Uncertainty Analysis. Qualitative and/or quantitative uncertainty analyses shall be used as appropriate for each element of the risk assessment.

8.6. Residual Risk Assessments (RRA). Conditions that will be present at the site following implementation of the proposed remedy, should one be needed, shall be considered in residual human health and ecological risk assessments.

8.6.a. In a situation where a baseline risk assessment has been conducted and where no further action is the proposed remedy, the base line risk assessment may serve as the residual risk assessment.

8.6.b. A RRA shall include an assessment of the risks under current and reasonably anticipated future land and water use scenarios, given:

8.6.b.1. The exposure conditions that will be present following remediation and the concentrations of untreated ~~waste~~ constituents or treatment residuals remaining at the conclusion of any excavation, treatment, or off-site disposal; and/or

8.6.b.2. The exposure conditions that will result following implementation of any institutional or engineering controls necessary to manage risks from treatment residuals or untreated hazardous constituents.

8.6.c. The RRA shall be conducted following the same basic steps outlined in subsections 8.4 and 8.5 of this rule, except that the conditions used to define the site shall reflect post-remediation conditions, including site-specific numeric remediation standards and site-specific exposure conditions that incorporate any engineering and institutional controls proposed as part of the remedial action.

8.7. Probabilistic Assessment: Probabilistic techniques may be applied to human health and ecological risk assessments. At a minimum, before the commencement of a probabilistic risk assessment, the applicant shall discuss with the secretary the sources and characteristics of the distributions proposed for use in the assessment. The probabilistic risk assessment shall include, but not be limited to, information regarding:

8.7.a. All formulae used to estimate exposure point values, toxicity (cancer slope factor, reference dose) values, ecological benchmark values, hazard indices, and incremental lifetime cancer risks;

8.7.b. A combination of input parameters expressed as either point estimates or distributions. For each input parameter expressed as a distribution, the following information shall be provided:

8.7.b.1. The shape of the full distribution;

8.7.b.2. To the extent practicable, the mean, standard deviation, minimum, 5th percentile, 10th percentile, median, 90th percentile, 95th percentile, and maximum of the specified distribution;

8.7.b.3. Justification for the use of each distribution clearly explaining the rationale for its use and the rejection of other relevant distributions; and

8.7.b.4. The extent to which input distributions and their parameters capture and separately represent both stochastic variability and knowledge uncertainty. This information shall comprise a portion of, but not be a

replacement for a comprehensive discussion in the body of the baseline risk assessment of the qualitative and quantitative sources of uncertainty.

8.7.c. A description of any correlations between or among input variables that are known or expected to have the practical effect of significantly affecting the risk assessment;

8.7.d. For each output distribution resulting from the probabilistic risk assessment, the following information:

8.7.d.1. The shape of the full distribution and location of the acceptable risk level; and

8.7.d.2. To the extent practicable, the mean, standard deviation, minimum, 5th percentile, 10th percentile, median, 90th percentile, 95th percentile, and maximum of the specified distribution.

8.7.e. A probabilistic sensitivity analysis for all key input distributions conducted so as to distinguish, to the extent possible, the effects of variability from the effects of uncertainty in the input variables;

8.7.f. Justification for the selection of any point estimate value incorporated into the probabilistic assessment and the rationale for its selection and for the rejection of other relevant point estimate values;

8.7.g. Probabilistic methods may be applied to:

8.7.g.1. Environmental media contaminant concentration data;

8.7.g.2. Transport and fate modeling;

8.7.g.3. Exposure estimation;

8.7.g.4 Ecological response estimation; or

8.7.g.5 Risk characterization.

8.7.h. The plausible upper-bound exposure condition is equal to approximately the 90th percentile of the exposure distribution. The central-tendency exposure case is the 50th percentile of the exposure distribution. Risk assessments utilizing only deterministic (single point value) methods shall provide both central tendency and plausible upper-bound estimates of exposures and risk.

§60-3-9. Remediation Standards. -- This section shall be used for developing risk-based soil and groundwater remedial objectives for site remediation. The purpose of these procedures is to provide for the adequate protection of human health and the environment relative to the current and the reasonably anticipated future uses of the site while incorporating site-related information, to the extent practicable, which may allow for more cost-effective site remediation based on identified site risks.

9.1. Types of remediation standards. Each applicant who responds to the release of a regulated substance at a site shall select and attain compliance with one or a combination of the following remediation standards in each of subdivisions 9.1.a and 9.1.b:

9.1.a. Human Health:

9.1.a.1. A De Minimis Risk-Based Standard is one in which contaminant levels pose no significant risks to human health based on any current or reasonably anticipated future land and water use as provided in subsection 9.2 of this rule. If these levels are below natural background, background levels will be considered the De Minimis levels;

9.1.a.2. A Uniform Risk-Based Standard is one which uses pre-approved analytical methodologies established by the secretary to input exposure factors and other site- specific variables to calculate compound-specific remediation levels that will be protective of human health based on any current or reasonably anticipated future land and water use, as provided in subsection 9.3 of this rule. If these levels are below anthropogenic background levels, such background levels will be considered the uniform risk-based levels;

9.1.a.3. A Site-Specific Risk-Based Standard is one which uses a site-specific analysis of present contamination, and develops a remedial approach that considers the remedy selection criteria in subdivision 9.8.a of this rule and is protective of human health based upon any current, or reasonably anticipated future land and water use; or

9.1.a.4. The applicant may use a combination of the remediation standards to implement a site remediation plan and may choose to use the Site-Specific Risk-Based Standard whether or not efforts have been made to attain the De Minimis or Uniform Risk-Based standards.

9.1.a.5. In all cases the presence of free product at a site shall require remediation.

9.1.b. Ecological:

9.1.b.1. A De Minimis Ecological Screening Evaluation is an evaluation of the nature and extent of contaminants to determine if potential exposure pathways are completed. If contaminants and ecological receptors of concern do not form complete exposure pathways, no significant risk to ecological receptors is assumed.

9.1.b.2. A Uniform Ecological Evaluation -- where contaminant concentrations are compared to benchmark values which reflect no significant risks to ecological receptors of concern. If these benchmark values are below anthropogenic background levels, such background levels will be considered the Uniform Ecological Standard. Where an applicant proposes a remediation standard based on other existing standards which exceed the benchmark levels and the secretary feels those other existing standards are not protective of ecological receptors of concern, he or she may require a site specific ecological risk assessment in order to establish remediation standards.

9.1.b.3. A Site-Specific Ecological Risk-Based Standard which, based on a site-specific analysis of present contamination, develops a remedial approach that considers the remedy criteria in subdivision 9.8.a of this rule and is protective of ecological receptors of concern for the current, or reasonably anticipated future land and water use.

9.1.b.4. The applicant may use a combination of the remediation standards to implement a site remediation plan and may propose to use the Site-Specific Risk-Based Standard whether or not efforts have been made to attain the De Minimis Risk-Based Standards.

9.2. Human Health -- De Minimis Standard. The De Minimis Standard establishes contaminant levels that do not present a significant risk to human health. If on the basis of the site assessment, these standards are found to be met, no remedial action or further characterization is required and the site is eligible for issuance of a Certificate of Completion by the secretary or by a Licensed Remediation Specialist as provided by in this rule. If at any time during characterization or remedial action the site is shown to meet the De Minimis standard, no further action is required and the site is eligible for issuance of the Certificate of Completion.

9.2.a. De Minimis Standards for Soils. The De Minimis Standards for both surface (<2ft depth) and subsurface (>2ft depth) soils shall be the higher numerical value of the following:9.2.a.1 or 9.2.a.2, and must not exceed 9.2.a.3 unless it is shown to the satisfaction of the secretary that migration of soil contaminants to groundwater will not result in an exceedance of De Minimis Groundwater Standards.

9.2.a.1. Risk-Based Concentrations (RBCs)for human health for residential or industrial site uses that consider direct contact exposures (ingestion, dermal, and inhalation). When such risk-based concentrations exceed soil saturation concentrations (CSAT), soil saturation concentrations shall be considered as alternatives to RBCs. All RBCs are presented in Table 60-3B;

9.2.a.2. Natural background levels for each constituent as determined by sampling and statistical analyses completed using secretary approved methods and/or data sources.

9.2.a.3. De Minimis Soil Standards for the migration of each constituent from soil to groundwater presented in Table 60-3B.

9.2.b. De Minimis Standards for Groundwater. The De Minimis standards for groundwater shall be determined as follows:

9.2.b.1. Groundwater contaminant concentration limits established in Title 46-Series 12 of the Code of State Rules (46CSR12);

9.2.b.2. For those contaminants where a concentration limit has not been established in 46CSR12, the higher numerical value of the following:

9.2.b.2.A. The Risk-Based Concentrations (RBCs) for human health for residential site uses will be used as presented in Table 60-3B; or

9.2.b.2.B Natural background levels for each constituent as determined by sampling and statistical analyses completed using secretary approved methods and/or data sources.

9.2.c. Carcinogens. For individual known or suspected carcinogens, remediation standards derived under subdivisions 9.2.a and 9.2.b of this rule shall

be established at levels which represent an excess upper-bound lifetime cancer risk of one in one million ($1x10^{-6}$) for residential land uses and one in one hundred thousand (1×10^{-5}) for industrial land uses.

9.2.d. Systemic toxicants. For individual systemic toxicants, remediation standards shall represent levels to which the human population could be exposed without appreciable risk of deleterious effect, where the hazard quotient shall not exceed 1.

9.2.e. If a contaminant exhibits both carcinogenic and noncarcinogenic effects, then the more protective risk-based standard (i.e., the lower of the two values) shall be used as the remediation standard.

9.2.f. Should soil or groundwater concentrations meet De Minimis levels, and no exposure pathways exist in addition to those considered in the De Minimis Table 60-3B, then no further action shall be required and the Certificate of Completion can be issued.

9.3. Human Health-Uniform Risk-Based Standard. This Standard sets forth uniform, approved methodologies, exposure factors, and other input variables needed to calculate site risks for residential or nonresidential land uses. The secretary recognizes that there may be instances where the pre-established input variables may not be applicable to a site, and thus will allow for site-specific variables to replace the default variables with adequate technical justification. Typical parameters that may require site-specific input include soil attenuation factors, site-specific hydrogeologic properties, and institutional controls used to manage potential exposure to site contamination.

9.3.a. Uniform Risk-Based Standards for Surface Soils/Sediments. Surface soil remediation standards for residential or industrial land uses shall be derived by applying site-specific information to the equations and constants from the secretary's Uniform Risk-Based Guidance or other equations and constants approved by the secretary considering reasonably anticipated future land and water use.

9.3.b. Uniform Risk-Based Standards for Subsurface Soils. Subsurface soil remediation values shall be derived based on:

9.3.b.1. Migration potentials;

9.3.b.2. Leaching potentials; and

9.3.b.3. Soil saturation concentrations. The equations and constants described in the secretary's Uniform Risk-Based Guidance or other equations and constants approved by the secretary shall be applied.

9.3.c. Uniform Risk-Based Standard for Groundwater. Groundwater remediation values shall be derived based on:

9.3.c.1. Current or reasonably anticipated future land and water use;

9.3.c.2. The potential for the groundwater to serve as a source of drinking water. Groundwater that has a background total dissolved solids content greater than 2500 milligrams per liter (mg/l), or where the applicant can demonstrate to the secretary's satisfaction that the aquifer is not being used, cannot be used for future drinking water sources, and is not hydrologically connected to an aquifer being

used for drinking water shall not be considered a current or potential source of drinking water; and

9.3.c.3. Migration potentials. The equations and constants described in the secretary's uniform Risk Based Guidance shall be applied.

9.3.d. Carcinogens. For individual known or suspected carcinogens, remedial standards derived under subdivisions 9.3.a, 9.3.b, and 9.3.c of this rule shall be established at levels which represent an excess upper-bound lifetime risk of between one in ten thousand to one in one million ($1x10^{-4}$ to $1x10^{-6}$). If carcinogenic risk greater than 1x10-^{6} is considered for development of residential remediation goals or greater than 1 x 10^{-5}, for development of industrial remediation goals, public notification shall be required as specified in subsection 7.12 of this rule.

9.3.e. Systemic Toxicants. For individual systemic toxicants, remedial standards derived under subdivisions 9.3.a, 9.3.b, and 9.3.c of this rule shall represent levels to which the human population could be exposed without appreciable risk of deleterious effect, where the hazard quotient shall not exceed one.

9.3.f. If a contaminant exhibits both carcinogenic and noncarcinogenic effects, then the more conservative risk-based standard (i.e., the lower of the two values) shall be used as the remediation standard.

9.3.g. Cumulative Site Risk. Cumulative upper-bound estimate of site risk per receptor from exposure to known or suspected carcinogens shall not exceed one in ten thousand ($1x10^{-4}$); and where multiple systemic toxicants affect the same target organ or act by the same method of toxicity, the upper-bound estimate of hazard index shall not exceed 1, or 10 where it is not determined whether multiple systemic toxicants affect the same organ.

9.3.h. Should Uniform Risk-Based soil or groundwater concentrations be met, no further action shall be required with regard to those media.

9.4. Human Health-Site-Specific Risk-Based Standard. Site-Specific Risk-Based Standards will be determined using one or a combination of a BHHRA as described in subsection 8.4 of this rule or a RRA as described in subsection 8.6 of this rule. In establishing the remediation standard under this section, the potential for exposure to site contaminants under current and reasonably anticipated future land and water use and the application of institutional and engineering controls shall be considered.

9.4.a. Carcinogens. For individual known or suspected carcinogens, remedial standards derived under subsection 9.4 shall be established at levels which represent an excess upper-bound lifetime risk of between one in ten thousand to one million ($1x10^{-4}$ to $1x10^{-6}$). If carcinogenic risk greater than $1x10^{-6}$ for individual carcinogens is considered for development of residential remediation goals, or greater than 1 x 10^{-5} for development of industrial remediation goals, public notification shall be required as specified in subsection 7.12 of this rule.

9.4.b. Systemic toxicants. For individual systemic toxicants, remedial standards shall represent levels to which the human population could be exposed without appreciable risk of deleterious effect, where

the hazard quotient shall not exceed one. Where multiple systemic toxicants affect the same target organ or act by the same method of toxicity, the hazard index shall not exceed 1, or 10 where it is not determined whether multiple systemic toxicants affect the same organ.

9.4.c. If a contaminant exhibits both carcinogenic and noncarcinogenic effects, then the more protective risk-based standard (i.e., the lower of the two values) shall be used as the remediation standard.

9.4.d. If probabilistic risk assessment methods are used in establishing the remedial standards or demonstrating the acceptability of the proposed remedial alternative, exposure levels shall approximate the 90th percentile of the exposure distribution.

9.4.e. Groundwater. Remedial standards for groundwater shall be established using the following considerations:

9.4.e.1. Potential receptors based on the current and reasonably anticipated future use of groundwater;

9.4.e.2. The potential for groundwater to serve as a drinking water source, as defined in paragraph 9.3.c.2 of this rule;

9.4.e.3. Site-specific sources of contaminants;

9.4.e.4. Natural environmental conditions affecting the fate and transport of contaminants, such as natural attenuation processes, as determined by appropriate scientific methods; and

9.4.e.5. Institutional and engineering controls.

9.4.f. Soil. Remedial standards for soil/sediments shall be established using the following considerations:

9.4.f.1. Potential receptors based on the current and reasonably anticipated use of the site;

9.4.f.2. Site-specific sources of contaminants;

9.4.f.3. Natural environmental conditions affecting the fate and transport of contaminants, such as natural attenuation processes, as determined by approved scientific methods; and

9.4.f.4. Institutional and engineering controls.

9.4.g. The secretary shall incorporate the equations and constants for risk-based standards into a guidance document, along with other relevant information for establishing and applying such standards to specific sites. The guidance document shall be revised from time to time as needed to incorporate scientific advancements and new or alternative risk assessment and methods. The guidance document, any subsequent revisions, and any alternative risk assessment methods proposed by an applicant will be reviewed by independent scientists recognized as experts in relevant risk assessment disciplines. The secretary shall incorporate as appropriate the comments of scientific reviewers into the guidance document or decisions regarding risk-based standards or methods.

9.5. Ecological -- De Minimis Screening Evaluation. This standard sets forth uniform, pre-approved methodologies, exposure assumptions, and other input variables needed to evaluate whether complete exposure pathways exist for aquatic and terrestrial ecological receptors of concern. The secretary recognizes that there may be instances where the pre-established input variables may not be applicable to a site, and thus will allow for site-specific variables to indicate whether an ecological risk assessment is needed.

9.5.a. Typical parameters that shall be considered when evaluating whether or not to perform an ecological risk assessment include but are not limited to the following:

9.5.a.1. Evaluate whether a complete exposure pathway exists. If no complete exposure pathway exists because either the contamination is restricted in movement or there are no ecological receptors of concern, then no ecological risk exists (e.g., if the majority of the site is paved with roads and buildings, no pathway exists);

9.5.a.2. Some sites may be screened out and not require evaluation given their size, estimated risk to ecological receptors, or lack of valued ecological receptors, including threatened or endangered species;

9.5.a.3. Local conditions should be considered for assessing whether a site is degrading an aquatic environment. In cases where the site does not present an ecological risk over and above "local conditions" and further release of contaminants into the aquatic environment has been stopped, there will not be a need for further evaluation;

9.5.a.4. Define what level of ecological resource is considered valued; and

9.5.a.5. If for each contaminated media, harm is readily apparent and a condition of no significant risk of harm to the site biota and habitats clearly does not exist, further ecological risk characterization would be redundant and is not required. The applicant can then proceed directly to the remedy evaluation.

9.5.b. The following are conditions which may be considered indicators of the need for an ecological risk assessment:

9.5.b.1. Stressors have migrated off-site and become widely distributed in the environment;

9.5.b.2. Wildlife or ecological resources of concern are exposed or have potential for significant exposure to stressors from a site, either on or off-site;

9.5.b.3. Remediation of stressors at a site has the potential to expose ecological resources of concern to impacts;

9.5.b.4. A potential exists for indirect or cumulative impacts to ecosystems of concern;

9.5.b.5. Rare or sensitive species of concern are potentially impacted;

9.5.b.6. Adverse ecological effects have been observed in an otherwise high quality habitat; and

9.5.b.7. Projected land use involves sensitive ecosystems.

9.5.c. Should the ecological screening evaluation indicate no complete

exposure pathways exist or other conditions specified in subdivision 9.5.a. of this rule or the Screening Ecological Evaluation Guidance are met, no further action shall be required and the Certificate of Completion can be issued.

9.6. Ecological-Uniform Ecological Evaluation. The Uniform Ecological Evaluation establishes benchmark levels that do not present a significant risk to potential ecological receptors. If during initial screening, these standards are found to be met, no remedial action or further characterization is required and the site is eligible for issuance of a Certificate of Completion by the secretary or by a Licensed Remediation Specialist. If at any time during characterization or remedial action the site is shown to meet the Uniform Ecological Evaluation, no further action is required and the Certificate of Completion can be issued. If site contaminants exceed benchmark criteria, the applicant can propose remediation goals protective of ecological receptors of concern. If the applicant chooses to remediate to benchmark levels, the following shall be used:

9.6.a. Uniform Standards for Soils. Uniform Standards for soils (0-4 ft) shall be the highest of the following numerical values:

9.6.a.1. Benchmarks for relevant ecological receptors that consider direct contact exposures, as presented in division guidance documents; or

9.6.a.2. Natural or anthropogenic background levels for each constituent as determined by sampling and statistical analyses completed using secretary approved methods and/or data sources.

9.6.b. Uniform Standards for Sediments. Uniform Standards for sediments (0-6 inches) shall be the highest of the following numerical values:

9.6.b.1. Benchmarks for relevant ecological receptors that consider direct contact exposures, as presented in division guidance documents; or

9.6.b.2. Natural or anthropogenic background levels for each constituent as determined by sampling and statistical analyses completed using secretary approved methods and/or data sources.

9.6.c. Uniform Standards for Surface Water. The Uniform standards for surface water shall be the highest of the following numerical value:

9.6.c.1. Federal Ambient or State Water Quality Criteria;

9.6.c.2. For those contaminants where a Federal or State Water Quality Criteria has not been established, applicable NOAEL (No Observable Adverse Effect Level) or LOAEL (Lowest Observable Adverse Effect Level) values will be used, as presented in division guidance documents; or

9.6.c.3. Natural or anthropogenic background levels for each constituent as determined by sampling and statistical analyses completed using secretary-approved methods and/or data sources.

9.6.d. Uniform Standards for Groundwater. Where groundwater is expected to impact surface water bodies of

concern, the Uniform standards for groundwater shall be the highest of the following numerical value:

9.6.d.1. Federal Ambient or State Water Quality Criteria;

9.6.d.2. For those contaminants where a Federal or State Water Quality Criteria has not been established, applicable NOAEL (No Observable Adverse Effect Level) or LOAEL (Lowest Observable Adverse Effect Level) values will be used, as presented in division guidance documents; or

9.6.d.3. Anthropogenic background levels for each constituent as determined by sampling and statistical analyses completed using secretary-approved methods and/or data sources.

9.7. Ecological-Site-Specific Risk-Based Standard. Site-Specific Risk-Based Standards shall be developed using the procedures and factors established by this section.

9.7.a. In establishing the remediation standard under this section, the potential for exposure of ecological receptors of concern to site contaminants under current and reasonably anticipated future land and water use and the application of institutional and engineering controls shall be considered.

9.7.b. For individual toxicants, remedial standards shall represent levels to which sensitive (i.e., threatened or endangered) ecological population(s) could be exposed without appreciable risk of deleterious effect, where the hazard index shall not exceed one. For non-sensitive ecological receptors, a weight-of-evidence approach shall be used to establish acceptable remedial standards.

9.7.c. If probabilistic risk assessment methods are used in establishing the remedial standards or demonstrating the acceptability of the proposed remedial alternative, exposure levels shall approximate the 90th percentile of the exposure distribution.

9.7.d. Remedial standards for soil, sediment, surface water, or groundwater shall be established using the following considerations:

9.7.d.1. Potential receptors of concern based on the current and reasonably anticipated use of the site;

9.7.d.2. Site-specific sources of contaminants;

9.7.d.3. Natural environmental conditions affecting the fate and transport of contaminants, such as natural attenuation processes, as determined by approved scientific methods; and

9.7.d.4. Institutional and engineering controls.

9.7.e. The secretary shall incorporate the equations and constants into a guidance document, along with other relevant information for establishing and applying such standards to specific sites. The guidance document shall be revised from time to time as needed to incorporate scientific advancements and new or alternative risk assessment methods. The guidance document, any subsequent revisions, and any alternative risk

assessment methods proposed by an applicant will be reviewed by independent scientists recognized as experts in relevant risk assessment disciplines. The department shall incorporate as appropriate the comments of scientific reviewers into the guidance document. These services will be contracted through arrangements made by the secretary with a nonprofit organization governed by a board of secretaries representing diverse interests of West Virginia.

9.8. Remediation measures. Any of the remediation standards may be attained through one or more remediation activities that can include treatment, removal, engineering or institutional controls, and natural attenuation and including, but not limited to, innovative or other demonstrated measures.

9.8.a. Remedy evaluation. In selecting a remedial action from among alternatives that achieve the goal of cost effective protection of human health and the environment, the following factors shall be balanced ensuring that no single factor predominates over the others. The remedy that protects human health and the environment shall be selected using the following criteria:

9.8.a.1. The effectiveness of the remedy in protecting human health and the environment;

9.8.a.2. The reliability of the remedial action in achieving the standards over the long term;

9.8.a.3. Short-term risks to the affected community, those engaged in the remedial action effort, and to the environment posed by the implementation of the remedial action;

9.8.a.4. The acceptability of the remedial action to the affected community;

9.8.a.5. The implementability and technical practicability of the remedial action from an engineering perspective;

9.8.a.6. Meets protectiveness goal at lowest cost; and

9.8.a.7. Considers net environmental benefits of the remedial action.

9.9. Natural Attenuation. Any person may request that the secretary approve a remediation plan based upon natural processes of degradation and attenuation of contaminants. A request submitted to the secretary under this paragraph shall include a description of site-specific conditions, including written documentation of projected groundwater use in the contaminated area based on current state or local government planning efforts; the technical basis for the request; and any other information requested by the secretary to thoroughly evaluate the request. In addition, the person making the request must demonstrate to the satisfaction of the secretary:

9.9.a. That the contaminant has the capacity to degrade or attenuate under the site-specific conditions;

9.9.b. That the contaminant area, such as a groundwater plume or soil volume, is not increasing in size; or, because of natural attenuation processes, that the rate of contaminant degradation is demonstrably

more rapid than the rate of contaminant migration; and that all sources of contamination and free product have been controlled or removed where practicable;

9.9.c. That the time and direction of contaminant travel can be predicted with reasonable certainty;

9.9.d. That contaminant migration will not result in any violation of applicable groundwater standards at any existing or reasonably foreseeable receptor;

9.9.e. If the contaminants have migrated onto adjacent properties, the owner must demonstrate that:

9.9.e.1. Such properties are served by an existing public water supply system dependent on surface waters or hydraulically isolated groundwater, or

9.9.e.2. The owners of such properties have consented in writing to allow contaminant migration onto their property.

9.9.f. That, if the contaminant plume is expected to intercept surface waters, the groundwater discharge beyond the sediment/water interface will not possess contaminant concentrations that would result in violations of standards for surface waters contained in 46 CSR 1;

9.9.g. That the person making the request will put in place a groundwater monitoring program sufficient to track the degradation and attenuation of contaminants and contaminant by-products within and down-gradient of the plume and to detect contaminants and contaminant by-products prior to their reaching any existing or foreseeable receptor. Such monitoring program shall provide for placing one or more monitoring wells at least one year's time of travel upgradient of the receptor, and at least one monitoring well shall be placed at a location no farther away from the leading edge of the contaminated groundwater at the site than such contamination is likely to travel in five years;

9.9.h. That all necessary access agreements needed to monitor groundwater quality pursuant to subdivision 9.9.g. of this section have been or can be obtained; and

9.9.i. That the proposed corrective action plan would be consistent with all other environmental laws.

§60-3-10. Work Plan.

10.1. Submittal of Work Plans. The applicant, or the applicant's licensed remediation specialist or contractor, shall submit to the secretary the appropriate work plans and reports as required by the parties' voluntary remediation agreement.

10.2. Action on Work Plans.

10.2.a. The secretary may, based upon accuracy, quality, and completeness, either approve or disapprove a work plan or report submitted from the applicant or the applicant's licensed remediation specialist or contractor.

10.2.b. If the secretary disapproves a work plan or report, the secretary must, within 5 days of its disapproval, notify the applicant in writing that its work plan or report has been disapproved. Such written notice shall include a list specifying the reasons that the

work plan or report was disapproved, and shall specify all additional information needed for the work plan or report to obtain approval.

10.2.c. If the secretary disapproves a work plan or report as submitted, the applicant must resubmit the work plan or report or terminate the agreement pursuant to W. Va. Code §22-22-9.

10.3. Timing of Submittal and Review.

10.3.a. The secretary shall either approve or disapprove all work plans and reports within 30 days of receipt or within a shorter period if specified in the parties' voluntary remediation agreement. Any such action taken on a work plan or report must be confirmed in writing and received by the applicant within the 30-day period or within such shorter period specified in the parties' voluntary remediation agreement. An extension of time for approval or disapproval of work plans or report may be mutually agreed to between the applicant and the secretary. If an extension of time is mutually agreed to by the secretary and applicant, it must be confirmed in writing.

10.3.b. If work plans or reports are resubmitted, the secretary shall approve or disapprove the resubmitted work plans or reports within 30 days of receipt or within such shorter period specified in the parties' voluntary remediation agreement. Any action taken on resubmitted work plans or reports must be confirmed in writing and received by the applicant within the 30-day period for acting on a resubmitted application, or within such shorter time specified in the parties' voluntary remediation agreement. An extension of time or action on resubmitted work plans or reports may be mutually agreed to between the applicant and the secretary. If an extension of time is mutually agreed to by the secretary and applicant, it must be confirmed in writing. If resubmitted work plans or reports are not approved by the secretary, then the secretary and the applicant may mutually agree, in writing, to a schedule for additional review of the resubmitted work plans or reports.

10.3.c. If work plans or reports are not approved or disapproved within 30 days of receipt by the secretary or within such shorter time specified in the parties' voluntary remediation agreement, or if resubmitted work plans or reports are not approved or disapproved within 30 days of receipt by the secretary or within such shorter time specified in the parties' voluntary remediation agreement, then the work plans or reports will be deemed approved unless such work plans or reports are determined to be materially inaccurate.

10.4. Notice. Any notice required to be given under the provisions of this section must be in writing and sent via United States certified mail, or as specified in the parties' voluntary remediation agreement. Notice is complete upon receipt.

10.5. Completeness and Quality of Work Plans. In reviewing work plans for quality and completeness, the secretary may require such work plans to include each of the following:

10.5.a. Documentation of the investigation conducted by the applicant in preparing the work plan;

10.5.b. A description of assessments and other work, if any, to be performed by the applicant to further determine the nature and extent of the actual or threatened release;

10.5.c. A description of risk assessments, if any, to be conducted to show the appropriateness of the proposed remedy for the site;

10.5.d. A statement of work to be conducted to accomplish the proposed remediation in accordance with the risk protocol and remediation standards established under sections 8 and 9 of this rule, and a schedule for the implementation of all tasks set forth in the proposed statement of work;

10.5.e. The applicant's verification sampling plan to determine the adequacy of the remediation; and

10.5.f. Other necessary supporting plans or information as deemed appropriate by the party conducting the remediation.

§60-3-11. Final Report.

11.1. This rule sets forth the requirements for the submittal and contents of the Final Report for a voluntary remediation program. The Final Report may be prepared and submitted when all applicable standards developed for the site have been met.

11.2. Sites may be subdivided for the purpose of preparing Final Reports.

11.3. The Final Report shall include all data and information needed to document and verify that all applicable standards have been met and that all activities specified in the Voluntary Remediation Agreement have been completed. Supporting documentation, such as sample collection records, field monitoring data, laboratory reports, relevant correspondence, and permits, should be placed in one or more appendices to the Final Report. The use of maps, drawings, photographs, tables, and other aids to visualization and data presentation is encouraged.

11.4. Earlier reports, plans, and/or other relevant documents may be incorporated into the Final Report by reference if these items previously have been submitted to the Division. In such cases a complete bibliographic reference shall be provided for each document being incorporated by reference.

11.5. The names, addresses, telephone numbers, and facsimile transmission numbers shall be provided for the current owners and operators of the site, the owners and/or operators conducting the remediation (if different), and the licensed remediation specialist. Individual names and titles for management contacts for each listed firm or organization also shall be provided.

11.6. The site location shall be clearly identified by providing the street address, legal description (including lot and block numbers), and a site location map.

11.7. Ongoing work, such as site cover or treatment system operation and maintenance or groundwater or surface water monitoring, shall be described. This shall include descriptions of planned activities and schedules.

11.8. If institutional controls, such as deed restrictions or land use covenants, are part of the remediation program, copies of appropriate documents to be recorded shall be appended to the Final Report. A site map showing the area(s) subject to institutional controls shall be provided.

11.9. The completeness and accuracy of the Final Report shall be certified, in writing, by an authorized agent of the applicant and by the licensed remediation specialist. The form of this certification shall be as follows:

I hereby certify that the information presented in this report is, to the best of my knowledge and belief, true, accurate, and complete having been prepared under a system and organization designed to produce true, accurate, and complete information.

If the authorized agent and the licensed remediation specialist are the same, a single signature will be sufficient.

§60-3-12. Certificate of Completion.

12.1. Completion of Remediation.

12.1.a. A voluntary remediation is complete when a site meets applicable standards and all work has been completed as contemplated in the voluntary remediation agreement.

12.1.b. When a site meets applicable standards and all work required by the voluntary remediation agreement to meet applicable standards has been completed, the licensed remediation specialist shall issue a final report to the applicant. Such report shall explain how the compliance with the requirements of the voluntary remediation agreement has been demonstrated.

12.1.c. The applicant to whom a final report has been issued may do either of the following:

12.1.c.1. Request a certificate of completion from the secretary, as provided in subsection 12.2 of this rule; or

12.1.c.2. Request a certificate of completion from the licensed remediation specialist, when applicable, as provided in subsection 12.4 of this rule.

12.2. Issuance of Certificate of Completion by the secretary.

12.2.a. Upon receiving the request provided in paragraph 12.1.c.1 of this rule, the secretary must evaluate the final report provided by the applicant, and determine, within sixty days, whether the final report was properly issued by the licensed remediation specialist. When reviewing a final report, the secretary shall only consider whether:

12.2.a.1. The site meets applicable standards for those areas of the site and for those contaminants identified in the voluntary remediation agreement; and

12.2.a.2. The applicant has complied with the voluntary remediation agreement and any approved work plans for the site.

12.2.b. If the secretary agrees that the final report was properly

issued, a certificate of completion shall be issued by the secretary within 60 days of receipt of a request for a certificate of completion from the applicant.

12.2.c. If the secretary does not agree that the final report was properly issued, he must promptly provide written notification to the applicant stating in detail the reasons why the report was not deemed properly issued and indicating the further action that must be taken to allow the certificate to be issued. Upon receipt of such notification, the applicant may:

12.2.c.1. Instruct the licensed remediation specialist to take the further action identified by the secretary;

12.2.c.2. Appeal the secretary's decision to the Environmental Quality Board in accordance with the provisions of W. Va. Code §22B-1-7; or

12.2.c.3. Terminate the voluntary remediation agreement.

12.3. Contents of the Certificate of Completion.

12.3.a. The certificate of completion shall attach or incorporate the following:

12.3.a.1. A description of the site to which the certificate of completion pertains;

12.3.a.2. A description of the contaminants for which applicable standards are met at the site;

12.3.a.3. The voluntary remediation agreement under which the site was remediated and/or evaluated;

12.3.a.4. The final report of the licensed remediation specialist; and

12.3.a.5. Any land use covenant or deed restriction imposed for purposes of meeting applicable standards including, where applicable, a description of any institutional or engineering controls employed at the site for purposes of meeting applicable standards.

12.3.b. The certificate of completion shall provide that:

12.3.b.1. The site that is described in the certificate of completion meets the applicable standards as provided in section 6 of this rule;

12.3.b.2. The applicant and the persons identified in section 18 of the Act (1) are relieved of liability to the state for the release that caused the contamination that was the subject of the voluntary remediation, and the state shall not institute any civil, criminal or administrative action arising from the release and resulting contamination, as long as the site continues to meet applicable standards in effect at the time the certificate was issued; and (2) shall not be subject to citizen suits or contribution actions with regard to the contamination that was the subject of the voluntary remediation agreement;

12.3.b.3. Where the agreement imposes an obligation that continues beyond the effective date of the certificate and such obligations are no longer satisfied with the result that the applicable

standards approved for the site are no longer being met, or continued compliance with the applicable standard is threatened, the secretary shall initiate action to insure the site is brought into compliance in accordance with section 14 of this rule to rescind the covenant contained in this certificate as it would apply to the then current owner or operators of the site and their successors and assigns;

12.3.b.4. Except as provided in paragraph 12.3.b.3 of this rule, a certificate of completion may be revoked or, in lieu thereof, further remediation may be required of any site described in the certificate of completion only where the secretary has determined that a reopener has been triggered in accordance with section 16. Where a certificate is revoked under this provision, it shall be revoked only as to the then current owner or operator of the site, their successors and assigns except in the case where fraud was committed in demonstrating attainment at the site as provided in subdivision 16.1.a of this rule. In this latter case, the certificate is revoked as it would apply to any person; and

12.3.b.5. The duties and benefits of the certificate of completion are transferable to successors and assigns of the applicant, subject to the obligations of any land use covenant referred to in the certificate of completion.

12.3.c. The certificate of completion contained in Appendix 60-3C meets the requirements of this section. Additional provisions and modifications which differ from the form in Appendix 60-3C but which are consistent with this rule may be agreed to by the applicant and the secretary.

12.4. Certificates of Completion Issued by Licensed Remediation Specialists.

12.4.a. A licensed remediation specialist may issue a certificate of completion for any site that complies with the de minimus standards set forth in subsections 9.2 and 9.5 of this rule, provided that a final report is issued and the secretary is given notice of the licensed remediation specialist's intention to issue a certificate of completion for the site.

12.4.b. A certificate of completion issued by a licensed remediation specialist shall comply with subsection 12.3 of this rule.

12.4.c. The secretary may object to the issuance of a certificate of completion by a licensed remediation specialist within 30 days of receipt of notice of the certificate's issuance, as provided in subdivision 12.4.a. of this rule. If the secretary objects to issuance of the certificate, the applicant may take any of the actions allowed under subdivision 12.2.c. of this rule. If the secretary fails to object within the 30 day period, the licensed remediation specialist may issue the certificate of completion.

12.5. Effective Date.

12.5.a. A certificate of completion issued by the secretary shall become effective when signed by the secretary or, where applicable, upon the filing of any land use covenant_required by the certificate, whichever shall last occur.

12.5.b. A certificate of completion issued by a licensed remediation specialist shall become effective when

signed by the licensed remediation specialist after notice to the secretary in accordance with subsection 12.4 of this rule, or, where applicable, upon the filing of any land use covenant required by the certificate, whichever shall last occur.

§60-3-13. Land Use Covenants.

13.1. Any limitation on the use of a property that is required in order to meet applicable environmental standards shall be contained in a land use covenant. Such use restrictions may include prohibiting residential development of some or all of the site, or requiring maintenance of engineering or institutional controls.

13.2. Contents of a land use covenant

13.2.a. A land use covenant shall:

13.2.a.1. State that the instrument is an environmental covenant executed pursuant to the Uniform Environmental Covenants Act, W. Va. Code § 22-22B-1 et seq.;

13.2.a.2. Contain a legally sufficient description of the real property subject to the covenant;

13.2.a.3. Describe the activity and use limitations on the real property;

13.2.a.4. Identify every owner of record of a fee interest in the property;

13.2.a.5. Identify every holder of the land use covenant within the meaning of W. Va. Code § 22-22B-2;

13.2.a.6. Contain the notarized signature(s) of the agency, every holder and, unless waived by the agency, every owner of the fee simple of the real property subject to the covenant;

13.2.a.7. Identify the name and location of any administrative record for the work performed under the Act at the real property subject to the covenant;

13.2.a.8. State whether residential or non-residential exposure assumptions were used to comply with a site-specific remediation standard;

13.2.a.9. Provide requirements for notice within 10 days following transfer of a specified interest in, or concerning proposed changes in use of, applications for building permits for, or proposals for any site work affecting the contamination on, the property subject to the covenant;

13.2.a.10. Contain a provision that the applicant, and his assigns and successors, are relieved of all civil liability to the state for the release of contaminants and remediation activities, as long as the property meets applicable standards in effect at the time the covenant was issued;

13.2.b. A land use covenant may:

13.2.b.1. Provide a brief narrative description of the contamination and remedy; including the contaminants of concern, the pathways of exposure, limits on exposure and the location and extent of the contamination;

13.2.b.2. Grant rights of access to the property for purposes of

implementation or enforcement of the covenant;

13.2.b.3. Provide requirements for periodic reporting describing compliance with the covenant;

13.2.b.4. Provide limitations on amendments or termination of the covenant in addition to those specified in W. Va. Code § 22-22B-9 and § 22-22B-10;

13.2.b.5. Provide rights of the holder in addition to its right to enforce the covenant pursuant to W. Va. Code § 22-22B-11

13.2.c. In addition to other conditions for its approval of an environmental covenant, the agency may require those persons specified by the agency who have interests in the real property to sign the covenant.

13.3. The applicant for participation in the remediation program shall cause the land use covenant to be recorded in the deed book of each county in which any portion of the site is located and shall provide a certified copy of the recorded covenant to the Secretary and to each of the parties named in section 3-5 of this rule.

13.4. The land use covenant form contained in Appendix 60-3D meets the requirements of this section. Additional provisions or modifications that are not inconsistent with this rule, the Voluntary Remediation and Redevelopment Act or the Uniform Environmental Covenants Act may be agreed to by the holders and the secretary.

13.5. A copy of a land use covenant shall be provided by the persons required, and in the manner required, by the agency to:

13.5.a. Each person that signed the covenant;

13.5.b Each person holding a recorded interest in the real property subject to the covenant;

13.5.c Each person in possession of the real property subject to the covenant;

13.5.d Each municipality or other unit of local government in which real property subject to the covenant is located; and

13.5.e. Any other person the agency requires.

13.6. The validity of a covenant is not affected by failure to provide a copy of the covenant as required under section 13.5 if this rule.

13.7 The duration, amendment and termination of a land use covenant shall be governed by the provisions regarding environmental covenants set forth in the Uniform Environmental Covenants Act, W. Va. Code § 22-22B-1 et seq.

§60-3-14 Procedure where Certificate of Completion or Land Use Covenant is Violated.

14.1. If at any time the secretary determines that an obligation imposed by the certificate of completion or by any land use covenant issued pursuant to the Act is not being satisfied with the result that the

remediation standard approved for the site is no longer being met, or continued compliance with the remediation standard is threatened, the secretary shall issue notice of such determination by providing written notice through certified/registered mail to the current owner or operator of the site. Such notice shall identify the obligations that are not being satisfied and the appropriate corrective action that must be taken.

14.2. Any person aggrieved by the secretary's determination under subsection 14.1 of this rule may appeal such ruling to the Environmental Quality Board in accordance with the provisions of W. Va. Code §22B-1-7.

14.3. The covenant set forth in the certificate of completion and the provisions regarding relief from liability in any land use covenant shall no longer apply to the current owner or operator of the site and their successors and assigns upon the expiration of 60 days from the date of issuance of notice as provided in subsection 14.1 of this rule, or 60 days from issuance of a final order of the Environmental Quality Board affirming the action of the secretary where an appeal is taken as provided in subsection 14.2 of this rule, unless prior to such time the current owner or operator takes action to assure that all obligations imposed by the Certificate are satisfied.

§60-3-15 Loans from Brownfields Revolving Fund.

15.1. Loan Applications.

15.1.a. Any person who satisfies the criteria set forth in subsection 3.2 of this rule may apply, after conferring with the secretary as provided in W. Va. Code §22-22-5(a), to the secretary for a loan to perform a site assessment at a brownfield site. The application shall be on a form prescribed by the secretary which, at a minimum, shall require the following information:

15.1.a.1.
Name of applicant and business;

15.1.a.2.
Name of current owner(s) of record of the property;

15.1.a.3.
Size and location of property;

15.1.a.4.
Description of past and current uses of property;

15.1.a.5.
. Nature of contamination; and

15.1.a.6.
. Financial capability of applicant.

15.1.b. The secretary shall act upon a completed application within 60 days of receiving it. The secretary may approve the application, reject the application, or accept the application subject to correction. The applicant shall be given a reasonable amount of time to make corrections specified by the secretary.

15.1.c. Each loan shall be memorialized in a written document that identifies the amount of the loan, the interest rate, and the repayment schedule.

15.2. Qualifying Activities:

15.2.a. Money may be

loaned to an applicant from the Revolving Fund for the site assessment of a brownfield property; or

15.2.b. Money may be loaned to an applicant from the Revolving Fund for activities at brownfield sites other than site assessments to the extent monies are appropriated to, or received by, the Revolving Fund for purposes other than site assessments.

15.3. Loan Conditions.

15.3.a. The secretary shall require periodic reports from each applicant of all expenditures of funds loaned to the applicant from the Brownfield Revolving Fund;

15.3.b. Where the applicant is the owner of the property upon which the site assessment is to be performed, the secretary shall require a deed of trust to be executed or any other collateral of equal or greater value to secure the loan; and

15.3.c. Where the applicant is not the owner of the property upon which the site assessment is to be performed, the secretary shall require appropriate collateral to secure the loan, except where the applicant is a development authority or other public entity.

15.4. Repayment.

15.4.a Loans shall be repaid at a rate of interest determined by the secretary at the time the application is approved. The loans shall be low interest. For a public entity, the interest rate shall be from 0% to 3%. For a private entity the interest rate shall be the prime rate less three percent; and

15.4.b. Loans shall be repaid in equal installments over a period of no longer than 10 years, as allowed by the secretary.

§60-3-16. Reopener Provisions.

16.1. A voluntary remediation agreement shall be reopened in accordance with the procedures set forth in this section upon a determination by the secretary that one or more of the following conditions has occurred:

16.1.a. Fraud was committed in demonstrating attainment at the site with regard to a standard set forth in the voluntary remediation agreement or in these rules that resulted in avoiding the need for further remediation at the site;

16.1.b. New information confirms the existence of an area of previously unknown contamination which contains contaminants that have been shown to exceed the standards applied to the previous remediation at the site;

16.1.c. The level of risk is increased significantly beyond the established level of protection at the site due to substantial changes in exposure conditions, such as, a change in land use, or new information is obtained about a contaminant associated with the site which revises exposure assumptions beyond the acceptable range:

16.1.c.1. This condition applies only where the level of risk is increased by a factor of at least five or the hazard index exceeds 1, or 10 where it is not determined whether multiple systemic

toxicants affect the same organ.

16.1.d. The release that is addressed by the voluntary remediation agreement occurred after July 1, 1996, on a site not used for industrial activity prior to that date and (1) the remedy relied, in whole or in part, upon institutional or engineering controls instead of treatment or removal of contamination; and (2) treatment, removal or destruction has become technically and economically practicable; or

16.1.e. The remediation method failed to meet the remediation standard or combination of standards identified in the voluntary remediation agreement or these rules.

16.2. If at any time the secretary determines that one of the reopener conditions in subsection 16.1 has been triggered, the secretary shall issue notice of such determination by providing written notice through certified/registered mail to the initial remediator and the current occupant, and any other person who has asked to be notified of any actions regarding the site.

16.3. Any person aggrieved by the secretary's determination under subsection 16.2, may appeal such ruling to the Environmental Quality Board in accordance with the provisions of W. Va. Code §22B-1-7.

16.4. The Certificate of Completion previously issued for the site shall become null and void upon the expiration of 60 days from the date of issuance of notice as provided in subsection 16.1 or 60 days from issuance of a final order of the Environmental Quality Board where an appeal is taken as provided in subsection 16.2, unless prior to such time at least one of the following occurs:

16.4.a. Where the initial remediator seeks to maintain the certificate of completion then in effect, the initial remediator shall:

16.4.a.1. Enter into an agreement with the secretary to reopen and revise the voluntary agreement to the extent necessary to return the site to its previously agreed to state of remediation; or

16.4.a.2. Agree to reopen and revise the voluntary agreement to the extent necessary to achieve an alternative appropriate standard as determined by the secretary;

16.4.b. Where some person other than the initial remediator seeks to maintain the certificate of completion then in effect, such person shall:

16.4.b.1. Enter into a voluntary agreement with the secretary in accordance with the requirements of these rules which contains such provisions as are necessary to assure that the property meets the state of remediation previously agreed to or another appropriate standard as determined by the secretary.

§60-3-17. Appeals of Rulings of the Secretary.

17.1. If at any time the secretary determines that an obligation imposed by the certificate of completion or by any land use covenant issued pursuant to the Act is not being satisfied, with the result that the remediation standard approved for the site is no longer being met, or continued compliance with the remediation standard is

threatened, the secretary shall issue notice of such determination by providing written notice through certified/registered mail to the current owner or operator of the site. Such notice shall identify the obligations that are not being satisfied and the appropriate corrective action that must be taken.

17.2. Any person aggrieved by the secretary's determination under subsection 17.1 of this rule may appeal such ruling to the Environmental Quality Board in accordance with the provisions of W. Va. Code §22B-1-7.

17.3. The covenant set forth in the certificate of completion and the provisions regarding relief from liability in any land use covenant shall no longer apply to the current owner or operator of the site and their successors and assigns upon the expiration of 60 days from the date of issuance of notice as provided in subsection 17.1 of this rule, or 60 days from issuance of a final order of the Environmental Quality Board affirming the action of the secretary where an appeal is taken as provided in subsection 17.2 of this rule, unless prior to such time the current owner or operator takes action to assure that all obligations imposed by the Certificate are satisfied.

APPENDIX 60-3A

WEST VIRGINIA VOLUNTARY REMEDIATION AGREEMENT FOR NO FURTHER ACTION INVESTIGATION ACTIVITIES

[For Brownfields and Non-Brownfields Sites]

I. INTRODUCTION

1. The West Virginia Department of Environmental Protection (WVDEP), by its Secretary, and _____ ("applicant") hereby enter into this Voluntary Remediation Agreement ("Agreement"), pursuant to the Voluntary Remediation and Redevelopment Act, W.Va. Code §22-22-1 et seq. (the "Act"), for the purpose of investigating and, if warranted, remediating the property that is the subject of this Agreement ("the site").

II. JURISDICTION

2. This Agreement is entered into by and between the WVDEP, by its Secretary, and _____, applicant, pursuant to W.Va. Code §22-22-7.

3. The Parties agree to the following terms and conditions as satisfying the requirements of the Act for the investigation and remediation of the site. The applicant reserves all rights it may have under common law, the West Virginia Code and federal statutes to seek contribution or indemnity. The WVDEP reserves all rights it may have under common law, the West Virginia Code and federal statutes to seek contribution or indemnity from persons other than the applicant and those persons identified in W. Va. Code §22-22-18.

4. By entering into this Agreement, the applicant neither admits nor denies liability.

III. STATEMENT OF ELIGIBILITY

5. The Secretary has determined that the application submitted by applicant is complete and that applicant is eligible to participate in the voluntary remediation program [Add for brownfields locations: and that the site qualifies as a brownfields site]. However, neither the Secretary's determination of eligibility nor the entry into this Agreement precludes any finding by the Secretary at a later date that the site poses an imminent and substantial threat to human health or the environment within the meaning of W.Va. Code §22-22-7(d). In addition, if it is determined that applicant withheld or misrepresented information that would be relevant to the applicant's eligibility, the Secretary may withdraw from this Agreement.

IV. PARTIES BOUND

6. This Agreement shall apply to and be binding upon the applicant, its officers, secretaries, principals, employees, agents, successors, subsidiaries and assigns and upon WVDEP, its employees, agents and successors. The signatories to this Agreement certify that they are fully authorized to execute and legally bind the parties they represent.

7. The applicant shall provide a copy of this Agreement to any subsequent owners or successors before ownership rights are transferred.

V. DEFINITIONS

8. "Day" or "calendar day" means the 24-hour period between 12:00 A.M. - 12:00 A.M.

9. "No further action" means a site is eligible to receive a Certificate of Completion on the basis of site assessment sampling or sampling data developed under a Voluntary Remediation Agreement which demonstrates that the site meets applicable standards.

10. "Rules" means those rules adopted by the Secretary of the Department of Environmental Protection pursuant to the Voluntary Remediation and Redevelopment Act, W. Va. Code §22-22-1 through 22-22-21.

11. "Site" shall be used in the manner as defined by W.Va. Code §22-22-2 and for purposes of this Agreement means the property located in _____, West Virginia, and is more particularly described in the Application for Participating in the Voluntary Remediation Program attached and incorporated herein as Exhibit "A". [OPTIONAL LANGUAGE – Submitted to WVDEP and accepted by letter dated , 200 .]

12. All other terms contained in this Agreement shall be used in the manner as defined by W.Va. Code §22-22-2 or the rules.

VI. STATEMENT OF PURPOSE

13. This Agreement sets forth necessary terms and conditions to satisfy the requirements of the Act for the investigation and, if warranted, the remediation of the site.

14. The activities conducted by the applicant under this Agreement are subject to approval by WVDEP as provided herein. Applicant shall provide all necessary information for the site. The activities conducted by the applicant shall be consistent with this Agreement, all applicable laws and regulations and any appropriate guidance documents.

VII. EVALUATION OF SITE ASSESSMENT

15. Applicant has submitted a site assessment as a part of the application. The site assessment was accompanied by a final report prepared by _____, a licensed remediation specialist, which states that the site meets the applicable standard described in paragraph 16 of this Agreement.

16. The parties agree that the applicable standard for this site, consistent with [insert cite to rule relating to remediation standards] is as follows:

[Insert appropriate standard and, where applicable, a description of any engineering or institutional controls for this site, as agreed upon by the Parties.]

17. The statutes and regulations for which compliance is mandated in connection with the investigation or remediation of this site are as follows:

[Insert appropriate list of statutes and rules.]

[OPTIONAL LANGUAGE-If applicable]

(a) Air Pollution Control Act, W.Va. Code §§ 22-5-1 et seq.;
(b) Water Pollution Control Act, W. Va. Code §§ 22-11-1 et seq.;
(c) Groundwater Protection Act, W. Va. Code §§ 22-12-1 et seq.;
(d) Hazardous Waste Management Act, W. Va. Code §§ 22-18-1 et seq;
(e) Section 103(a) of Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C.A. §§ 9603(a)
(f) Section 304 of Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C.A. §§ 11001 to 11050;
(g) Occupational Safety & Health Act, 29 U.S.C.A. §§ 651 to 678;
(h) Resource Conservation and Recovery Act, as amended, et. seq., 42 U.S.C.A. §§ 6901, et seq.; and
(i) Toxic Substances Control Act, 15 U.S.C.A. §§ 2601, et seq.;
and any applicable regulation promulgated thereunder.

18. The WVDEP has reviewed the final report and the site assessment submitted as a part of the application to participate in the Voluntary Remediation Program and has concluded that the site meets the applicable standard described in paragraph 16 of this Agreement**.** [If applicable - include a description of the technical standards applied in evaluating the site assessment with reference to proposed future land uses.]

19. Nothing herein shall be construed as restricting the inspection or access authority of DEP under any law or regulation.

VIII. RECORD PRESERVATION

20. The applicant agrees to preserve, for a minimum of three years from the effective date of this Agreement, all documents required by this Agreement and any other documents generated or used to prepare the documents required by this Agreement. Upon request by WVDEP, the applicant shall make available to WVDEP such records, or copies of any such records.

IX. RESERVATION OF RIGHTS

21. WVDEP and applicant reserve all rights and defenses they may have pursuant to any available legal authority unless expressly waived herein.

22. Nothing herein is intended to release, discharge, or in any way affect any claims, causes of action or demands in law or equity which the parties may have against any person, firm, partnership or corporation, not a party to this Agreement, for any liability it may have arising out of or relating in any way to, the generation, storage, treatment, handling, transportation, release or disposal of any materials, hazardous substances, hazardous waste, contaminants, or pollutants at, to, or from the site. The parties to this Agreement expressly reserve all rights, claims, demands, and causes of action they have against any and all other persons and entities who are not parties to this Agreement, and as to each other for matters not covered hereby.

23. The applicant reserves the right to seek contribution, indemnity, or any other available remedy against any person found to be responsible or liable for contributions, indemnity, or otherwise for any amounts which have been or will be expended by the applicant in connection with the site.

24. WVDEP acknowledges that, pursuant to W.Va. Code §22-22-18, applicant, upon receipt of the Certificate of Completion, is not liable for claims for contribution concerning matters addressed in the Voluntary Remediation Work Plan.

X. PUBLIC NOTIFICATION/INVOLVEMENT

25. [For brownfield applicants, insert provision requiring compliance with approved-public involvement plan, where appropriate]

XI. ADMINISTRATIVE COSTS

26. Applicant agrees to reimburse WVDEP for all of its reasonable administrative costs associated with this Agreement in the amount of $_____within 30 days of the effective date of this Agreement with a check made payable to the Voluntary Remediation Fund and be mailed along with a transmittal letter stating the site name and address to the West Virginia Department of Environmental Protection; Attention: _____, _____, West Virginia. Reimbursable costs under this provision shall be those costs for

which reimbursement is required under the rules.

XII. [IF APPLICABLE] LAND USE COVENANTS

27. [Insert provisions describing restrictions on future use of property and attach copy of land use covenant that is to be recorded for the site.]

XIII. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

28. The effective date of this Agreement shall be the date on which the applicant receives notice that this Agreement has been signed by the Secretary of WVDEP.

29. This Agreement may be amended by mutual agreement of WVDEP and the applicant. Amendments shall be in writing and shall be effective when the applicant receives notice that the amendment has been signed by the Secretary of WVDEP.

30. If the Secretary determines that there is an imminent threat to the public, he or she may unilaterally modify or amend this Agreement.

XIV. TERMINATION AND SATISFACTION

31. Upon completion of the final report prepared by the licensed remediation specialist, the applicant may seek a Certificate of Completion from the Secretary. Upon receipt of a request for a Certificate of Completion, the Secretary shall determine that the site meets applicable standards for those areas of the site and for those contaminants identified in the voluntary remediation agreement and that the applicant has complied with the voluntary remediation agreement and any approved work plans for the site. Upon making this determination, the Secretary shall issue a Certificate of Completion which conforms substantially to Appendix 60-3C of the rule. Where a land use covenant is required by this Agreement, such Certificate of Completion shall not become effective until it is properly filed with the Clerk of the County Commission of the county in which the property is located.

If the Secretary determines that the certificate should not be issued because the work required by this Agreement and any approved work plans has not been completed or because the site does not meet applicable standards the Secretary shall initiate the procedures relating to denial of a certificate as provided in the rules.

32. The provisions of this Agreement shall be satisfied and this Agreement shall end when the Secretary issues the Certificate of Completion.

XV. REOPENER

33. This Agreement may be reopened upon agreement of the parties or upon occurrence of one or more of the conditions of W.Va. Code §22-22-15 and the rules implementing that

section.

XVI. GOVERNING LAW

34. This Agreement will be governed by the laws of the State of West Virginia.

_____ APPLICANT

Printed Name:_____

Title: _____

Date: _____

WEST VIRGINIA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

By: _____

Title: _____

Date: _____

[Include if applicant is not owner of the site and agreement calls for land use covenant:

_____, as owner of the site referenced in the above Agreement hereby acknowledges that said Agreement requires the imposition of a land use covenant and, in consideration of the benefits accruing to the site from said Agreement, I hereby agree to the imposition of such land use covenant and agree to cooperate in the execution and filing of such land use covenant.

_____ _____

Owner Date

APPENDIX 60-3B

WEST VIRGINIA VOLUNTARY REMEDIATION AGREEMENT FOR INVESTIGATION AND REMEDIATION ACTIVITIES

[For Brownfields and Non-Brownfields Sites]

I. INTRODUCTION

1. The West Virginia Department of Environmental Protection (WVDEP), by its Secretary, and _____ ("applicant") hereby enter into this Voluntary Remediation Agreement ("Agreement"), pursuant to the Voluntary Remediation and Redevelopment Act, W.Va. Code §22-22-1 et seq. ("the Act"), for the purpose of investigating and remediating the property that is the subject of this Agreement ("the Site").

II. JURISDICTION

2. This Agreement is entered into by and between the WVDEP, by its Secretary, and _____, applicant, pursuant to W.Va. Code §22-22-7.

3. The Parties agree to the following terms and conditions as satisfying the requirements of the Act for the investigation and remediation of the site. The applicant reserves all rights under common law, the West Virginia Code and federal statutes to seek contribution or indemnity. The WVDEP reserves all rights it may have under common law, the West Virginia Code and federal statutes to seek contribution or indemnity from persons other than the applicant and those persons identified in W. Va. Code §22-22-18.

4. By entering into this Agreement, the applicant neither admits nor denies liability.

III. STATEMENT OF ELIGIBILITY

5. The Secretary has determined that the application submitted by the applicant is complete and that applicant is eligible to participate in the voluntary remediation program. However, neither the Secretary's determination of eligibility nor the entry into this Agreement precludes any finding by the Secretary at a later date that the site poses an imminent and substantial threat to human health or the environment within the meaning of W.Va. Code §22-22-7(d). In addition, if it is determined that applicant withheld or misrepresented information that would be relevant to the applicant's eligibility, the Secretary may withdraw from this Agreement.

IV. PARTIES BOUND

6. This Agreement shall apply to and be binding upon the applicant, its officers, secretaries, principals, employees, agents, successors, subsidiaries, and assigns and upon WVDEP, its employees, agents and successors. The signatories to this Agreement certify that they are fully authorized to execute and legally bind the parties they represent. No change in ownership, corporate, or partnership status of the applicant shall in any way alter its status or responsibilities under this Agreement unless the applicant or WVDEP withdraws from this Program as provide herein.

7. The applicant shall provide a copy of this Agreement to any subsequent owners or successors before ownership rights are transferred. The applicant shall provide a copy of this Agreement to all contractors, subcontractors, laboratories, and consultants which are retained to conduct any work performed under this Agreement, within fourteen (14) days after the effective date of this Agreement or within fourteen (14) days of the date of retaining their services.

V. DEFINITIONS

8. "Day" or "calendar day" means the 24-hour period between 12:00 A.M. - 12:00 A.M.

9. "No further action" means a site is eligible to receive a Certificate of Completion on the basis of site assessment sampling or sampling data developed under a Voluntary Remediation Agreement which demonstrates that the site meets applicable standards.

10. "Rules" mean those rules adopted by the Secretary of the Department of Environmental Protection pursuant to the Voluntary Remediation and Redevelopment Act, and promulgated at 60 CSR 3 as the Voluntary Remediation and Redevelopment Rule.

11. "Site" shall be used in the manner as defined by W.Va. Code §22-22-2(dd) and for purposes of this Agreement means the property located in _____, West Virginia, and is more particularly described in the Application for Participating in the Voluntary Remediation Program attached and incorporated herein as Exhibit "A". [OPTIONAL LANGUAGE – Submitted to WVDEP and accepted by letter dated , 200 .]

12. All other terms contained in this Agreement shall be used in the manner as defined by W.Va. Code §22-22-2 or the Rules.

VI. STATEMENT OF PURPOSE

13. This Agreement sets forth necessary terms and conditions to satisfy the requirements of the Act for the investigation and remediation of the Site.

14. The activities conducted by the applicant under this Agreement are subject to approval by WVDEP as provided herein. Applicant shall provide all necessary information for

the Site. The activities conducted by the applicant shall be consistent with this Agreement, all applicable laws and regulations and any appropriate guidance documents.

VII. WORK TO BE PERFORMED

15. All work to be performed by the applicant pursuant to this Agreement shall be under the direction and supervision of a licensed remediation specialist. The licensed remediation specialist may be designated by applicant as applicant's project manager pursuant to Paragraph 33. Prior to the initiation of Site work, the applicant shall notify WVDEP, in writing, regarding the name and title of the licensed remediation specialist, if different from the licensed remediation specialist designated in the application, and of any contractors and/or subcontractors to be used in carrying out the terms of this Agreement.

16. Applicant shall submit a Voluntary Remediation Work Plan which when implemented provides for the attainment of the applicable standard specified in Paragraph 18 of this Agreement.

(OPTIONAL LANGUAGE-If applicable)

Prior to the filing of the application and prior to the execution of this Agreement, applicant has undertaken work at the site. The following documents have been accepted and approved by the licensed remediation specialist in support of the requirements of the Act for the investigation and remediation of the site:

[List of documents and reports submitted]

(OPTIONAL LANGUAGE-If applicable)

For the purposes of remediation and preparing Final Reports the Site may be divided into separate areas, and different human health and ecological remediation standards; e.g., De Minimis, Uniform Risk-Based, Site-Specific Risk-Based, may be utilized for these individual areas. Applicant currently contemplates that the Site will be subdivided into the following areas:

[Description of the subdivided areas]

17. The Voluntary Remediation Work Plans submitted with this Agreement includes the following:

[List by Site or Subdivided Areas, if applicable]

18. The parties agree that the applicable standard for this Site, consistent with Section 9 of the rule, is as follows:

[Insert applicable standard and, where applicable, engineering or institutional controls for this site, as agreed upon by the Parties.]

[List by Site or Subdivided Areas, if applicable]

[OPTIONAL LANGUAGE-If applicable]

The parties agree that the applicable standard(s) for this Site will be determined upon approval of the work plan(s) and report(s) described in Paragraph 20 of this Agreement. The parties agree that the future determination of standard(s) will be described in a modification to the Agreement.

19. The statutes and regulations for which compliance is mandated in connection with the investigation or remediation of this Site are as follows:

[Insert appropriate list of statutes and rules.]

[OPTIONAL LANGUAGE-If applicable]

(a) Air Pollution Control Act, W.Va. Code §§ 22-5-1 et seq.;
(b) Water Pollution Control Act, W. Va. Code §§ 22-11-1 et seq.;
(c) Groundwater Protection Act, W. Va. Code §§ 22-12-1 et seq.;
(d) Hazardous Waste Management Act, W. Va. Code §§ 22-18-1 et seq;
(e) Section 103(a) of Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 U.S.C.A. §§ 9603(a)
(f) Section 304 of Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C.A. §§ 11001 to 11050;
(g) Occupational Safety & Health Act, 29 U.S.C.A. §§ 651 to 678;
(h) Resource Conservation and Recovery Act, as amended, et. seq., 42 U.S.C.A. §§ 6901, et seq.; and
(i) Toxic Substances Control Act, 15 U.S.C.A. §§ 2601, et seq.;
and any applicable regulation promulgated thereunder.

VIII. SUBMITTAL AND APPROVAL OF WORK PLANS OR REPORTS

20. The applicant shall submit the following work plans or reports in accordance with the schedule provided in this Agreement:

[List of work plans and/or reports to be submitted]

[OPTIONAL LANGUAGE - If Applicable]

When additional work plans or reports are planned as a follow-up to initial activities, the applicant shall submit the subsequent work plans, reports (including final reports), and schedules in accordance with a modification to this Agreement.

21. The Secretary may, based upon accuracy, quality, and completeness, either approve or disapprove a work plan or report submitted by applicant.

22. If the Secretary disapproves a work plan or report, the Secretary must, within 5 days

of its disapproval, notify the applicant in writing that its work plan or report has been disapproved. Such written notice shall include a list specifying the reasons that the work plan or report was disapproved, and shall specify all additional information needed for the work plan or report to obtain approval.

23. If the Secretary disapproves a work plan or report as submitted, the applicant must resubmit the work plan or report or terminate this Agreement as provided in Paragraph 74.

24. The Secretary shall either approve or disapprove all work plans and reports within 30 days of receipt [shorter period may be specified]. Any such action taken on a work plan or report must be confirmed in writing and received by the applicant within the 30-day period [may be shorter period specified]. An extension of time for approval or disapproval of work plans or reports may be mutually agreed to by and between the applicant and the Secretary. If an extension of time is mutually agreed to by the Secretary and applicant, it must be confirmed in writing.

25. After work plans or reports are submitted, the Secretary shall approve or disapprove the resubmitted work plans or reports within thirty (30) days of receipt, or within such shorter period specified in the party's voluntary remediation agreement. Any action taken on resubmitted work plans or reports must be confirmed in writing and received by the applicant within the thirty (30)-day period for acting on a resubmitted application, or within such shorter time specified in the party's voluntary remediation agreement. An extension of time or action on resubmitted work plans or reports may be mutually agreed to between the applicant and the Secretary. If an extension of time is mutually agreed to by the Secretary and the applicant, it must be confirmed in writing. If resubmitted work plans or reports are not approved by the Secretary, then the Secretary and the applicant may mutually agree, in writing, to a schedule for additional review of the resubmitted work plans or reports.

26. If work plans or reports are not approved or disapproved within 30 days of receipt by the Secretary [shorter time may be specified], or if resubmitted work plans or reports are not approved or disapproved within 30 days of receipt by the Secretary [shorter time may be specified], then the work plans or reports will be deemed approved unless such work plans or reports are determined to be materially inaccurate.

27. Notice. Any notice required to be given under the provisions of this section must be in writing and sent via United States certified mail [alternate method may be specified]. Notice is complete upon receipt.

28. If the applicant desires to proceed with the implementation of the approved work plan, the applicant must notify the Secretary in writing not more than 90 days after the work plan is approved. After providing such notice, the applicant shall initiate the work detailed in the Voluntary Remediation Work Plan according to the schedule as set forth in the Secretary's Notice of Approval. Upon the Secretary's receipt of notice that the applicant intends to proceed, the fully approved Voluntary Remediation Work Plan shall be deemed incorporated into and

made an enforceable part of this Agreement.

29. Upon completion of the work contemplated by all work plans, the applicant shall submit to the Secretary the final report prepared by the licensed remediation specialist. The final report shall include all information necessary to verify that all work contemplated by the work plan has been completed and all information required by the rules.

[OPTIONAL SECTION - IX. PUBLIC NOTIFICATION/INVOLVEMENT]

30. [For brownfield applicants, insert provision requiring compliance with approved Public Involvement Plan, where appropriate].

IX. ADDRESSES FOR ALL CORRESPONDENCE

31. Documents, including reports, approvals, notifications, disapprovals, and other correspondence, to be submitted under this Agreement, may be sent by certified U. S. mail, return receipt requested, hand delivery, overnight mail or by courier service to the following addresses or to such addresses as the applicant or WVDEP may designate in writing.

Documents to be submitted to WVDEP should be sent to:
[Insert name of Project Manager]

West Virginia Department of Environmental Protection
Division of Land Restoration
601 57th Street
Charleston, WV 25304

Phone No. (304) 926-0455

Documents to be submitted to the applicant should be sent to:

_____

_____

_____

Attn:_____

Phone No. _____

XI. COMPLIANCE WITH APPLICABLE LAWS

32. All work undertaken by the applicant pursuant to this Agreement shall be performed in compliance with all applicable federal, state and local laws, ordinances and regulations, including, but not limited to, all Occupational Safety and Health Administration, Department of Transportation and Resource Conservation and Recovery Act regulations. The applicant shall be responsible for obtaining all permits which are necessary for the performance of any work hereunder.

33. Completion of the work performed in accordance with this Agreement shall satisfy all applicable remediation requirements of Chapter 22 of the West Virginia Code, including the following: the Surface Coal Mining and Reclamation Act, W. Va. Code §22-3-1 et seq.; the Air Pollution Control Act, W. Va. Code §22-5-1 et seq.; the Water Pollution Control Act, W. Va. Code §22-11-1 et seq.; the Groundwater Protection Act, W. Va. Code §22-12-1 et seq.; the Solid Waste Management Act, W. Va. Code §22-15-1 et seq.; the Underground Storage Tank Act, W. Va. Code §22-17-1 et seq.; and the Hazardous Waste Management Act, W. Va. Code §22-18-1 et seq.

XII. PROJECT MANAGER/LICENSED REMEDIATION SPECIALIST

34. The WVDEP Project Manager for the Site is identified in Paragraph 30 of this Agreement. The applicant has designated (insert name of LRS) as the applicant's Licensed Remediation Specialist (LRS) and [OPTIONAL – Insert name as] Project Manager for the Site. The licensed remediation specialist shall be responsible for the supervision of all activities under this Agreement. The WVDEP project manager will be the WVDEP designated representative at the Site. To the maximum extent possible, communications between the applicant and WVDEP and all documents (including reports, approvals, and other correspondence) concerning the activities performed pursuant to the terms and conditions of this Agreement shall be directed through the project managers. During the implementation of this Agreement, the project managers shall, whenever possible, operate by consensus and shall attempt in good faith to resolve disputes informally through discussion of the issues. Each party has the right to change its respective project manager or licensed remediation specialist and shall notify the other party of such change within seventy-two (72) hours.

35. The absence of the applicant's or WVDEP's project manager or licensed remediation specialist from the Site shall not be cause for the stoppage of work. The applicant's project manager or licensed remediation specialist or his supervisor or licensed remediation specialists shall reasonably be available by telephone while work is being performed. The applicant shall designate a person to be in charge who will be available on-site when field work is being performed.

XIII. QUALITY ASSURANCE

36. The applicant shall use quality assurance, quality control, and chain of custody procedures in accordance with the Quality Assurance Project Plan approved for use by WVDEP throughout any work plan sample collection and analysis activities under this Agreement, unless

WVDEP agrees otherwise.

37. Applicant shall provide the WVDEP project manager with reasonable advance notice of all sampling and analysis as detailed in the work plan. To provide quality assurance and maintain quality control, the applicant shall:

a) Use laboratories certified by WVDEP;

b) Ensure that all sampling and analyses are performed according to US EPA methods, the approved Quality Assurance Project Plan, or other methods deemed satisfactory by WVDEP; and

c) Ensure that any laboratories used by the applicant for analyses participate in a documented Quality Assurance/Quality Control program that complies with US EPA guidance documents. As part of such a program, and upon request by WVDEP, such laboratories shall perform analyses of samples provided by WVDEP to demonstrate the quality of analytical data for each such laboratory.

[OPTIONAL LANGUAGE - If applicable]

The applicant may use a mobile laboratory (if it is certified by WVDEP) with the advance written approval of the WVDEP Project Manager.

38. In the event any laboratory fails to perform the activities required above, WVDEP reserves the right to reject any data not gathered pursuant to the requirements listed above, and to require that the applicant utilize a different laboratory.

XIV. SAMPLING AND DATA/DOCUMENT AVAILABILITY

39. The applicant shall, upon request, make the results of all sampling, including raw data and/or tests or other data generated by the applicant, or on the applicant's behalf, available to WVDEP. WVDEP shall make available to the applicant the quality-assured results of sampling and/or tests or other data similarly generated by WVDEP.

40. At the request of WVDEP, the applicant shall permit an authorized representative of WVDEP to take samples of wastes, soils, air surface water and groundwater at the Site. For each sample taken, the authorized representative shall provide the applicant a receipt describing the sample obtained and, if requested, a portion of each sample equal in weight or volume to the portion retained.

XV. ACCESS

41. To the extent that the Site or other areas where work is performed hereunder is presently owned or controlled by parties other than those bound by this Agreement, the applicant

shall obtain, or use its best efforts to obtain, access agreements from the present owners. Best efforts shall include, at a minimum, a certified letter from the applicant to the present owner of such property requesting access agreements to permit the applicant or any authorized representative of the WVDEP access to such property. Such agreement shall provide access for authorized representatives of the WVDEP as specified below. In the event such access agreements are not obtained, the applicant shall so notify the WVDEP, which may then, at its discretion, assist the applicant in gaining access.

42. Upon presentation of proper credentials, authorized representatives of the WVDEP shall be provided access by the applicant to the Site and other areas where work is to be performed under this Agreement at all reasonable times. Such access shall be related solely to the work being performed on the Site and shall include, but not be limited to: inspecting records, operating logs and contracts related to the Site; reviewing the progress of the applicant in carrying out the terms of this Agreement; conducting such tests, inspections and sampling as WVDEP may deem necessary consistent with this Agreement. The applicant shall permit WVDEP's authorized representatives to inspect and copy all records, files, photographs, documents and other writings, including all sampling and monitoring data, which pertain to this Agreement over which the applicant exercises control. All persons with access to the Site pursuant to this Agreement shall comply with any applicable the health and safety plans.

43. Nothing herein shall be construed as restricting the inspection or access authority of WVDEP under any law or regulation.

XVI. RECORD PRESERVATION

44. The applicant agrees to preserve, during the pendency of this Agreement, and for a minimum of three years after its termination, all documents required by this Agreement and any other documents generated or used to prepare the documents required by this Agreement. Upon request by WVDEP, the applicant shall make available to WVDEP such records, or copies of any such records.

45. The applicant may assert a confidentiality claim for any information submitted pursuant to this Agreement on the grounds that such information, or parts thereof, if made public would divulge methods, processes, or activities entitled to protection as trade secrets. If no such confidentiality claim accompanies the information when it is submitted to the WVDEP, it may be made available to the public by WVDEP without further notice to the applicant. The applicant agrees not to assert any confidentiality claim with regard to any physical or analytical data regarding environmental conditions at the Site.

XVII. DISPUTE RESOLUTION

46. The parties shall use their best efforts to, in good faith, resolve all disputes or differences of opinion informally. The period of informal resolution shall not exceed thirty (30) days from the time that either party commences informal resolution by verbally citing the dispute

with reference to this paragraph to the other party, unless the parties agree otherwise in writing. If, however, the parties are unable to resolve the dispute informally, the applicant may present written notices of such dispute to WVDEP and set forth specific points of dispute and the position of the applicant. This written notice shall be submitted no later than 10 calendar days after the expiration of the informal dispute resolution period. The applicant's project manager will notify the WVDEP project manager immediately by phone or other appropriate methods of communication, prior to written notice, when she/he believes that the parties are unable to resolve a dispute. If either party requests, within 14 days receipt of written notice of the dispute by WVDEP, disputes will be submitted to a mutually-approved impartial third party for non-binding mediation.

47. After the parties have attempted in good faith to resolve disputes pursuant to the terms of Paragraph 46, any unresolved disputes arising out of or relating to this agreement, or the breach thereof, shall be settled by binding arbitration and judgment on the arbitrator's decision may be entered in any court having jurisdiction. The applicant shall notify WVDEP in writing of any unresolved disputes which they believe require arbitration. Within 5 days, the parties shall agree to an arbitrator. If the parties fail to agree to an arbitrator, the arbitration shall be administered by the American Arbitration Association. In selecting a mediator or arbitrator, the parties shall attempt to select persons with experience in environmental matters, including but not limited to a licensed remediation specialist.

48. The applicant shall make a written submission in support of its position to the agreed arbitrator within 10 days of the arbitrator's selection, and the other party may make a written response in support of its position within 7 days thereafter. Upon notice to the parties, the arbitrator may request additional information or make specific inquiry of either party. Within 30 days of the written response under this paragraph, the arbitrator shall render a decision on the dispute and notify each of the parties of the decision. The applicant agrees to pay for the services of any mediator and arbitrator used by the parties in attempting to resolve disputes arising out of or relating to this agreement. Each party shall pay its own legal fees in conducting mediation or arbitration.

49. Until the dispute is resolved, any actions concerning that element of work in dispute shall be halted. The resolution of the dispute shall be incorporated into the work plan and made an enforceable part thereof. The time schedule for the work in dispute shall be extended by the amount of time needed for resolution. Elements of work and/or obligations not affected by the dispute shall be completed in accordance with the schedule contained in the work plan.

50. Elements of work and any actions required as a result of such dispute resolution shall immediately be incorporated, if necessary, into the appropriate plan or procedure, and into this Agreement. The applicant shall proceed with all remaining work according to the modified plan or procedure.

XVIII. FORCE MAJEURE

51. The applicant shall cause all work or required reporting to be performed within the

time limits set forth herein, unless performance is delayed by events which constitute a force majeure. "Force Majeure" shall mean conditions or circumstances beyond the reasonable control of applicant which could not have been overcome by due diligence and shall include, without limitation, acts of God, action or inaction of other governmental agencies, or administrative or judicial tribunals or other third parties, or strikes or labor disputes (provided, however, applicant shall not be required to concede to any labor demands), which prevent or delay applicant from complying with the work plan.

52. The applicant shall notify WVDEP by telephone within three (3) working days and by writing no later than seven (7) working days after any event, which the applicant contends is a Force Majeure. Such notification shall describe the anticipated length of the delay, the cause or causes of the delay, the measures taken or to be taken by the applicant to minimize the delay, and the timetable by which these measures will be implemented. The applicant shall have the burden of demonstrating that the event is a Force Majeure. The decision of whether an event is a Force Majeure shall be made by the Secretary, or the Secretary's designate. The decision shall be immediately communicated to the applicant.

53. If a delay is attributable to a Force Majeure, the time period for performance under this Agreement shall be extended, in writing, by the amount of time that is attributable to the event constituting the Force Majeure.

XIX. RESERVATION OF RIGHTS

54. WVDEP and applicant reserve all rights and defenses they may have pursuant to any available authority unless expressly waived herein.

55. Nothing herein is intended to release, discharge, or in any way affect any claims, causes of actions or demands in law or equity which the parties may have against any person, firm, partnership or corporation, not a party to this Agreement for any liability it may have arising out of or relating in any way to, the generation, storage, treatment, handling, transportation, release or disposal of any materials, hazardous substances, hazardous waste, contaminants, or pollutants at, to, or from the Site. The parties to this Agreement expressly reserve all rights, claims, demands, and causes of action they have against any and all other persons and entities who are not parties to this Agreement, and as to each other for matters not covered hereby.

56. The applicant reserves the right to seek contribution, indemnity, or any other available remedy against any persons found to be responsible or liable for contributions, indemnity, or otherwise for any amounts which have been or will be expended by the applicant in connection with the Site.

57. The WVDEP reserves the right to bring an action, including an administrative action, against the applicant for any violation of statutes or regulations except for the specific violations or releases that are being remediated in the work plan.

58. The WVDEP reserves the right to withdraw its approval of the work plan at any time during the implementation of the work plan if:

a) WVDEP determines that the applicant has failed to substantially comply with the terms and conditions of this Agreement or the work plan;

b) The applicant declines to implement the work plan after being notified of its approval by the WVDEP; or

c) WVDEP determines that a hazardous substance or petroleum has become an imminent or substantial threat to human health or the environment.

Upon WVDEP's withdrawal of its approval, this Agreement shall be terminated and WVDEP reserves the right to bring any action to enforce any statute or regulation under Chapter 22 of the West Virginia Code, including an action regarding the violations or releases that were the subject of this Agreement.

59. The WVDEP acknowledges that, pursuant to W. Va. Code §22-22-18, applicant, upon receipt of the Certificate of Completion, is not liable for claims for contribution concerning matters addressed in the Voluntary Remediation Agreement or any related work plan.

XX. ADMINISTRATIVE COSTS

60. Applicant agrees to reimburse WVDEP for all of its reasonable administrative costs associated with implementation of this Agreement at the rate of 2.5 times the hourly rate of the primary employee assigned to the site plus the actual and direct expenses of such employee. Within 60 calendar days of the approval of the work plan, WVDEP shall send the applicant an itemized list of estimated in-house costs that WVDEP expects to incur under this Agreement. The applicant agrees that a reasonable estimate of WVDEP contractor costs will be provided as described in the following paragraph. Itemization will be in standard WVDEP format. The estimated costs may include the preparation of the itemized list of administrative costs. Upon request, the applicant shall have the right to examine any documentation in WVDEP's possession used to develop the itemized list of costs. Requests for such documentation shall be made in writing and must be received by WVDEP within two (2) weeks from the date the applicant receives the estimate of costs.

61. WVDEP agrees to allow the applicant to review and comment on the scope of work and associated cost estimates for outside contractors prior to WVDEP's authorization of the said contractor to proceed with the associated work. WVDEP will strive where possible to use cost effective and qualified outside contractor(s). "Outside contractors" are defined as individuals, partnerships or corporations paid by WVDEP to assist in the oversight of the activities under this agreement (e.g., risk assessment), but shall not include WVDEP employees. Cost estimates and invoices from outside contractors shall be submitted to the applicant within two (2) weeks from

the date the WVDEP receives the cost estimate or invoice. The applicant shall raise any and all objections regarding cost estimates or invoiced work to the WVDEP within two (2) weeks from the date the applicant receives the forwarded estimates/invoice(s) from the WVDEP or within two (2) weeks of the receipt by the applicant of any back-up documentation of the said cost estimates/invoices which is contained in WVDEP files and requested by the applicant, whichever shall last occur. Notwithstanding any other provision of this Agreement, the process for the review of and objection to any cost estimates pursuant to this paragraph may extend the period otherwise provided in this Agreement for the WVDEP review of the submitted work plan or report by no more than an additional 30 days.

62. Applicant shall pay these costs in accordance with the following provisions. The $_____ application fee shall be credited against the first accounting. WVDEP shall periodically send an accounting of contractor, subcontractor and laboratory costs to applicant. Said accounting shall itemize all costs incurred by WVDEP for the previous calendar quarter. Applicant shall pay said amount within _____ days of receipt of the accounting. WVDEP shall also periodically send an accounting of WVDEP's primary employee time charged to this site to applicant. Applicant shall pay said amount within ____ days of receipt of the accounting.

63. Checks should be made payable to the Voluntary Remediation Fund and mailed along with a transmittal letter stating the site name and address to the West Virginia Department of Environmental Protection: Attention: Director, Division of Land Restoration, Charleston, West Virginia. In addition, a copy of the check and transmittal letter should be mailed to the WVDEP project manager.

XXI. NOTICE OF BANKRUPTCY

64. As soon as applicant has knowledge of its intention to file bankruptcy or no later than 7 days prior to the actual filing of a voluntary or involuntary bankruptcy petition, applicant shall notify WVDEP of its intention to file a bankruptcy petition.

XII. INDEMNIFICATION

65. The applicant agrees to indemnify and save and hold the State of West Virginia, its agencies, departments, agents, and employees, harmless from and all claims or causes of action arising from, or on account of, acts or omissions of the applicant, its officers, employees, receivers, trustees, agents, or assigns, in carrying out the activities pursuant to this Agreement.

XXIII. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION

66. The effective date of this Agreement shall be the date on which the applicant receives the notice that this Agreement has been signed by the Secretary of WVDEP.

67. This Agreement may be amended by mutual agreement of WVDEP and the applicant. Amendments shall be in writing and shall be effective when the applicant receives

notice that the amendment has been signed by the Secretary of WVDEP.

68. If the Secretary determines that there is an imminent threat to the public, he or she may unilaterally modify or amend this Agreement.

XXIV. EXTENSIONS OF TIME PERIODS

69. Any written response shall be deemed timely performed if hand delivered or postmarked by the last day of any time period prescribed herein. Whenever a party has the right or is required to do some act or make some response within a prescribed period after the service of a notice or other paper on him and the notice or paper is served upon him by United States mail, three (3) days shall be added to the prescribed period.

70. Whenever any party is called upon to respond or otherwise act in a certain number of days, and if the final day occurs on a Saturday, Sunday or legal holiday (whether state or national), such time limitation shall automatically extend to the next business day after such Saturday, Sunday, or holiday.

71. Any time periods specified in this Agreement may be extended only by agreement of the parties.

XXV. TERMINATION AND SATISFACTION

72. Upon completion of the final report prepared by the LRS, the applicant may seek a Certificate of Completion from the Secretary. Upon receipt of a request for a Certificate of Completion, the Secretary shall determine that the site meets applicable standards for those areas of the site and for those contaminants identified in the voluntary remediation agreement and that the applicant has complied with the voluntary remediation agreement and any approved work plans for the site. Upon making this determination, the Secretary shall issue a Certificate of Completion which conforms substantially to Appendix 60-3C of the rules. Where a land use covenant is required by this Agreement, such Certificate of Completion shall not become effective until it is properly filed with the Clerk of the County Commission of the county in which the property is located.

If the Secretary determines that the certificate should not be issued because work required by this Agreement and any approved work plans has not been completed or because the site does not meet applicable standards, the Secretary shall initiate the procedures relating to denial of a certificate as provided in the rules.

73. The provisions of this Agreement shall be satisfied and this Agreement shall terminate when the Secretary issues the Certificate of Completion.

74. Nothing in this Agreement shall restrict the State of West Virginia from seeking other appropriate relief to protect human health or the environment from pollution or contamination at or from this Site not remediated in accordance with this Agreement.

75. Applicant may, in its sole discretion, terminate this Agreement by providing to the Secretary fifteen (15) days advance written notice of termination. Only those costs incurred or obligated by the Secretary before the notice of termination is received are recoverable if the Agreement is terminated. If the applicant terminates this Agreement, then the applicant shall pay WVDEP's costs associated with the voluntary remediation within 31 days after receiving notice that the costs are due and owing.

XXVI. [IF APPLICABLE] LAND USE COVENANTS

76. [Insert provisions describing restrictions on future use of property and attach copy of land use covenant that is to be recorded for the site].

XXVII. REOPENER

77. Upon agreement of the parties or upon occurrence of one or more conditions of W. Va. Code §22-22-15, this Agreement may be reopened in accordance with W. Va. Code §22-22-15 and the rules implementing that section.

XXVIII. PRECEDENCE OF AGREEMENT

78. In the event that conflict arises among the terms and conditions of this Agreement, the State of Work, or the approved work plan, this Agreement shall govern and the terms and conditions hereunder shall determine the parties' rights and responsibilities.

XXIX. GOVERNING LAW

79. This Agreement will be governed by the laws of the State of West Virginia.

_____ (Applicant)

Printed Name:_____

Title: _____

Date: _____

WEST VIRGINIA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

By: _____

Title: _____

Date: _____

[Include if applicant is not owner of the site and Agreement calls for a land use covenant:

_____, as owner of the site referenced in the above Agreement hereby acknowledges that said Agreement requires the imposition of a land use covenant and, in consideration of the benefits accruing to the site from said Agreement, I hereby agree to the imposition of such land use covenant and agree to cooperate in the execution and filing of such land use covenant.

_____ _____

Owner Date

APPENDIX 60-3C

STATE OF WEST VIRGINIA
VOLUNTARY REMEDIATION PROGRAM
CERTIFICATE OF COMPLETION AND COVENANT

[Applicant] entered into a Voluntary Remediation Agreement with the Secretary of the Department of Environmental Protection, dated _____ ("Agreement"). The Agreement was entered into to address the release of any contaminants at _____("Site") located at _____, in _____ District, _____ County, West Virginia. The following documents are incorporated as a part of this Certificate and Covenant:

- The application dated _____ and the site assessment submitted with the application
- The Agreement dated _____
- A map depicting the site (See Exhibit A)
- A list of the contaminants for which the remediation standards specified in the Agreement have been met (See Exhibit B)
- The final report submitted for the site dated _____, issued by a licensed remediation specialist.
- [If applicable] A description of any institutional or engineering controls that were used to achieve a remediation standard (See Exhibit C)
- [If applicable] The land use covenant that is to be recorded for this site (See Exhibit D).

This Certificate of Completion is issued pursuant to W.Va. Code §22-22-13 to [Applicant] in recognition of the completion of the work required under the Agreement.

Pursuant to W. Va. Code §22-22-7(f), 22-22-13, 22-22-14, and 22-22-18, the Secretary of the West Virginia Department of Environmental Protection (hereinafter, "WVDEP"), in the name of and on behalf of the State of West Virginia, now covenants not to bring any civil, criminal or administrative action or claim, resulting from or based upon the release or threatened release of contaminants that were the subject of the Voluntary Remediation Agreement. This covenant shall bar actions against [applicant], [applicant]'s successors and assigns, and those persons identified in W. Va. Code §22-22-18, from all public and private claims arising under Chapter 22 of the West Virginia Code or rules adopted thereunder in connection with the release or threatened release that was the subject of the Voluntary Remediation Agreement. This covenant shall not apply to [applicant]'s predecessors in title.

CONDITIONS

This Certificate and the covenant it contains are subject to the terms and conditions set forth below: 1. The following conditions, contained in W.Va. Code §22-22-15, which may cause the Voluntary Remediation Agreement to be reopened:

a) fraud was committed in demonstrating attainment of a standard at the site that resulted in avoiding the need for further remediation of the site;

b) new information confirms the existence of an area of previously unknown contamination which contains contaminants that have been shown to exceed the standards applied to the previous remediation at the site;

c) the level of risk is increased significantly beyond the established level of protection at the site due to substantial changes in exposure conditions, such as, a change in land use, or new information is obtained about a contaminant associated with the site which revises exposure assumptions beyond the acceptable range. This condition applies only where the level of risk is increased by a factor of at least five or the hazard index exceeds 1, or 10 where multiple systemic toxicants do not affect the same organ;

d) the release occurred after the effective date of this Article on a site not used for industrial activity prior to the effective date of this Article; the remedy relied, in

whole or in part, upon institutional or engineering controls instead of treatment or removal of contamination; and treatment, removal or destruction has become technically and economically practicable; or

e) the remediation method failed to meet the remediation standard or combination of standards.

For purposes of this paragraph, "new information" means any information obtained directly or indirectly by the department from any person after issuance of a Certificate of Completion, but does not include information the department has received in the application for participation in the voluntary remediation program, including any site assessment, [optional: during the execution of the voluntary remediation agreement or any work plan developed under such an agreement] or other information available to the department under the voluntary remediation program prior to the execution of the Certificate of Completion. Information that does not qualify as new information may be considered by the Secretary along with new information if necessary, to determine whether any of the conditions for reopening set out in section 16 of this rule, have occurred.

Where one of the foregoing conditions is found to exist for a portion but not all of the site, this certificate and covenant shall continue to apply to all portions of the site that were unaffected by the occurrence of that condition.

2. To the extent that the Agreement or any of the documents referenced in this certificate impose obligations that continue after the execution of this certificate, there shall be continued compliance with such obligations.

3. This certificate and covenant do not preclude the State of West Virginia from taking any unilateral action at the site, under any existing or future statutory authority, to protect human health and the environment; provided however, in no event shall the State have a right of recovery against [applicant] or any other person to whom the covenant herein applies to the extent that such right of recovery arises under Chapter 22 of the West Virginia Code, and relates

to matters covered by the Agreement.

4. This certificate and covenant do not preclude the State from seeking recovery of such sums as the [applicant] has agreed to pay the WVDEP under the Agreement.

WHEREFORE, the Secretary of the Department of Environmental Protection, on behalf of the State of West Virginia, issues this certificate and covenant, with all aforementioned privileges, responsibilities, conditions and reservations, this date of _____, to [applicant].

Secretary, Department of Environmental Protection

APPENDIX 60-3D

LAND USE COVENANT

This is an environmental covenant executed pursuant to the Voluntary Remediation and Redevelopment Act, West Virginia Code Chapter 22, Article22, and the Uniform Environmental Covenants Act, West Virginia Code Chapter 22, Article 22B, to restrict the activities on, and uses of, the following described property:

[Insert legally sufficient description of the real property subject to the covenant. If the description is longer than one page, it may be included as an attachment.]

Activities on and uses of the above describe property that may result in excessive human exposure or in the release of a contaminant that was contained as part of the remedial action related to this covenant are prohibited. Those activities and uses include, but are not limited to:

[Insert list of prohibited activities]

The current owners of record of the property, and their contact information, are:

[Insert identity and address of all owners of record]

Any person, including a person that owns an interest in the real property, the state or federal agency determining or approving the environmental response project pursuant to which an environmental covenant is created, or a municipality or other unit of local government may be a holder of an environmental covenant. The following are all of the holders of this covenant:

[Insert identity and address of all holders]

The facts regarding the remediation response project at this property are: *[Provide a brief narrative description of the contamination and remedy, including the contaminants of concern, the pathways of exposure, limits on exposure and the location and extent of the contamination and state whether residential or non-residential exposure assumptions were used to comply with a site-specific remediation standard.]*

The owner(s) of the property shall provide written notice to the Secretary of the Department of Environmental Protection within 10 days following transfer of a specified interest in the property subject to this covenant, changes in use of the property, application for building permits regarding the property, or proposals for any site work affecting the contamination on the property.

The *[owner(s) or applicant(s)]* shall conduct inspections of the property to monitor compliance with this Land Use Covenant at least __ *[insert number]*time*[s]* per year, and shall submit two (2)

signed copies of the inspection monitoring report to the WVDEP, DLR headquarters in Charleston, within thirty (30) days of the inspection.

This covenant relieves the applicant and subsequent successors and assigns from all civil liability to the state as provided under West Virginia Code Article 22 of Chapter 22 and shall remain in effect so long as the property complies with the applicable standards in effect at the time this covenant was issued.

This covenant shall not be amended, modified or terminated except by written instrument executed by and between the Owner at the time of the proposed amendment, modification or termination, and the Secretary of the West Virginia Department of Environmental Protection, or his successor in accordance with regulations promulgated by the Secretary or his successor. Within 5 days of executing an amendment, modification or termination of this Land Use Covenant, the Owner shall record such amendment, modification or termination with the Clerk of the [County] Commission, and within 5 days thereafter, the Owner shall provide a true copy of the recorded amendment, modification or termination to the Secretary of the Department of Environmental Protection.

The administrative record for the environmental response project reflected in this covenant is maintained in the *[insert the name and address of the appropriate agency office]* and is entitled *[insert title of administrative record]*.

The West Virginia Department of Environmental Protection is granted full right of access to the property for the purpose of implementation or enforcement of this covenant.

All restrictions and other requirements described in this covenant shall run with the land and shall be binding upon all holders and their grantees, lessees, authorized agents, employees or persons acting under their direction or control.

IN WITNESS WHEREOF, the following holders have executed this covenant on the dates indicated.

SIGNED: Date:

I, _____, a Notary Public in and for the County of _____, State of _____, do hereby certify that the holder(s) whose (name is) (names are) signed above, this day executed this document in my presence or this day acknowledged same to be the true act and deed of said holder(s).

Given under my hand this the _____ day of _____, 20____.

Notary Public

[The document must contain the notarized signature(s) of the agency, every holder and, unless waived by the agency, every owner of the fee simple of the real property subject to the covenant.]
[Repeat the Signature and Notary materials as many times as needed. If several holders sign before the same Notary, their signatures may be listed together and only one Notarization, referring to all such holders, will be needed for those signatures.]
[This covenant, and any amendment or termination of this covenant, must be recorded in every county in which any portion of the real property subject to the covenant is located. For purposes of indexing, a holder shall be treated as a grantee.]

TABLE 60-3A

LICENSED REMEDIATION SPECIALIST FEES

APPLICATION FEE -	**$300.00**
BIENNIAL RENEWAL FEE -	**$200.00**
EXAMINATION FEE -	**$250.00**

60CSR3

TABLE 60–3B

CONTAMINANT	CAS No.	Residential Soil[1,4] (mg/kg)		Industrial Soil[1,4] (mg/kg)		Ground Water[2,4] (ug/L)		to Groundwater[3,4] (mg/kg)
Acetaldehyde	75-07-0	1.1E+01	c	1.6E+02	nc	1.7E+00	c	8.3E-03
Acetochlor	34256-82-1	1.2E+03	nc	1.8E+04	nc	7.3E+02	nc	8.1E+00
Acetone	67-64-1	1.4E+04	nc	5.6E+04	nc	5.5E+03	nc	2.2E+01
Acetonitrile	75-05-8	6.2E+02	nc	2.0E+03	nc	1.2E+02	nc	5.7E-01
Acetophenone	98-86-2	4.1E+03	nc	2.5E+04	nc	6.1E+02	nc	3.2E+00
Acrolein	107-02-8	1.0E-01	nc	3.4E-01	nc	4.2E-02	nc	2.0E-04
Acrylamide	79-06-1	1.1E-01	c	5.5E+00	c	1.5E-02	c	7.5E-05
Acrylonitrile	107-13-1	2.1E-01	c	5.2E+00	c	3.9E-02	c	1.6E-04
Alachlor	15972-60-8	6.0E+00	c	3.1E+02	c	2.0E+00	gws	1.7E-02
Alar	1596-84-5	9.2E+03	nc	1.3E+05	nc	5.5E+03	nc	2.4E+01
Aldicarb	116-06-3	6.1E+01	nc	8.8E+02	nc	3.7E+01	nc	2.1E-01
Aldicarb sulfone	1646-88-4	6.1E+01	nc	8.8E+02	nc	3.7E+01	nc	1.5E-01
Aldrin	309-00-2	2.9E-02	c	1.5E+00	c	4.0E-03	c	3.9E-01
Aluminum	7429-90-5	7.5E+04	nc	1.0E+06	max	3.7E+04	nc	1.1E+06
4-Aminopyridine	504-24-5	1.2E+00	nc	1.8E+01	nc	7.3E-01	nc	4.2E-03
Aniline	62-53-3	8.5E+01	c	4.3E+03	c	1.2E+01	c	1.4E-01
Antimony and compounds	7440-36-0	3.1E+01	nc	8.2E+02	nc	6.0E+00	gws	5.4E+00
Antimony trioxide	1309-64-4	3.1E+01	nc	8.2E+02	nc	1.5E+01	nc	
Arsenic	7440-38-2	3.9E-01	c	2.7E+01	c	1.0E+01	gws	5.8E+00
Assure	76578-14-8	5.5E+02	nc	7.9E+03	nc	3.3E+02	nc	7.3E+01
Atrazine	1912-24-9	2.2E+00	c	1.1E+02	c	3.0E+00	gws	8.6E-02
Azobenzene	103-33-3	3.7E+00	c	1.5E+02	c	1.0E-01	c	5.9E-03
Barium and compounds	7440-39-3	1.5E+04	nc	2.9E+05	nc	2.0E+03	gws	1.6E+03
Baygon	114-26-1	2.4E+02	nc	3.5E+03	nc	1.5E+02	nc	8.4E-01
Baythroid	68359-37-5	1.5E+03	nc	2.2E+04	nc	9.1E+02	nc	6.5E+03
Bentazon	25057-89-0	1.8E+03	nc	2.6E+04	nc	1.1E+03	nc	6.0E+00
Benzaldehyde	100-52-7	1.7E+03	Csat	1.7E+03	Csat	6.1E+02	nc	3.2E+00
Benzene	71-43-2	6.6E-01	c	1.5E+01	c	5.0E+00	gws	3.4E-02
Benzidine	92-87-5	2.1E-03	c	1.1E-01	c	2.9E-04	c	3.3E-05
Benzoic acid	65-85-0	2.4E+05	nc	1.0E+06	max	1.5E+05	nc	5.9E+02
Benzyl alcohol	100-51-6	3.1E+04	nc	4.4E+05	nc	1.8E+04	nc	1.5E+02
Benzyl chloride	100-44-7	8.9E-01	c	2.3E+01	c	6.6E-02	c	4.0E-04
Beryllium and compounds	7440-41-7	1.5E+02	nc	3.7E+03	nc	4.0E+00	gws	6.3E+01
1,1-Biphenyl	92-52-4	3.0E+03	nc	3.0E+04	nc	3.0E+02	nc	9.6E+01
Bis(2-chloroethyl)ether	111-44-4	2.1E-01	c	6.0E+00	c	8.0E+01	gws	5.6E-01
Bis(2-chloroisopropyl)ether	108-60-1	2.9E+00	c	8.1E+01	c	2.7E-01	c	1.8E-03
Bis(chloromethyl)ether	542-88-1	1.9E-04	c	4.4E-03	c	5.2E-05	c	2.1E-07
Bis(2-ethylhexyl)phthalate (DEHP)	117-81-7	3.5E+01	c	1.8E+03	c	6.0E+00	gws	3.6E+03
Bromodichloromethane	75-27-4	1.0E+00	c	2.4E+01	c	1.8E-01	c	1.5E-03
Bromoform (tribromomethane)	75-25-2	6.1E+01	c	3.1E+03	c	8.5E+00	c	6.4E-02
Bromomethane	74-83-9	3.9E+00	nc	1.3E+01	nc	8.7E+00	nc	4.2E-02
Bromophos	2104-96-3	3.1E+02	nc	4.4E+03	nc	1.8E+02	nc	1.5E+01
1,3-Butadiene	106-99-0	5.9E-02	c	1.3E+00	c	1.2E-01	c	2.6E-03

CONTAMINANT	CAS No.	Residential Soil[1,4] (mg/kg)	Value Basis[5]	Industrial Soil[1,4] (mg/kg)	Value Basis[5]	Ground Water[2,4] (ug/L)	Value Basis[5]	Migration to Groundwater[3,4] (mg/kg)
1-Butanol	71-36-3	6.1E+03	nc	8.8E+04	nc	3.7E+03	nc	1.6E+01
Butylate	2008-41-5	3.1E+03	nc	4.4E+04	nc	1.8E+03	nc	5.2E+01
n-Butylbenzene	104-51-8	8.2E+01	Csat	8.2E+01	Csat	6.1E+01	nc	7.2E+00
sec-Butylbenzene	135-9-88	7.8E+01	Csat	7.8E+01	Csat	6.1E+01	nc	5.6E+00
tert-Butylbenzene	98-06-6	1.3E+02	nc	1.4E+02	Csat	6.1E+01	nc	5.5E+00
Butyl benzyl phthalate	85-68-7	1.2E+04	nc	1.8E+05	nc	7.3E+03	nc	1.7E+04
Cadmium and compounds	7440-43-9	3.9E+01	nc	1.0E+03	nc	5.0E+00	gws	7.5E+00
Caprolactam	105-60-2	3.1E+04	nc	4.4E+05	nc	1.8E+04	nc	1.1E+02
Carbaryl	63-25-2	6.1E+03	nc	8.8E+04	nc	3.7E+03	nc	3.0E+01
Carbazole	86-74-8	2.4E+01	c	1.2E+03	c	3.4E+00	c	4.7E-01
Carbon disulfide	75-15-0	3.6E+02	nc	4.7E+02	Csat	1.0E+03	nc	8.3E+00
Carbon tetrachloride	56-23-5	2.4E-01	c	5.3E+00	c	5.0E+00	gws	6.1E-02
Carbosulfan	55285-14-8	6.1E+02	nc	8.8E+03	nc	3.7E+02	nc	2.2E+02
Chloranil	118-75-2	1.2E+00	c	6.1E+01	c	1.7E-01	c	7.4E-04
Chlordane (Technical)	12789-03-6	1.6E+00	c	1.1E+02	c	2.0E+00	gws	9.6E+00
Chloroacetic acid	79-11-8	1.2E+02	nc	1.8E+03	nc	7.3E+01	nc	3.0E-01
4-Chloroaniline	106-47-8	2.4E+02	nc	3.5E+03	nc	1.5E+02	nc	9.7E-01
Chlorobenzene	108-90-7	1.3E+02	nc	3.1E+02	Csat	1.0E+02	gws	1.3E+00
Chlorobenzilate	510-15-6	1.8E+00	c	9.1E+01	c	2.5E-01	c	2.7E-02
p-Chlorobenzoic acid	74-11-3	1.2E+04	nc	1.8E+05	nc	7.3E+03	nc	3.6E+01
2-Chloro-1,3-butadiene	126-99-8	3.6E+00	nc	1.2E+01	nc	1.4E+01	nc	1.2E-01
1-Chlorobutane	109-69-3	7.1E+01	nc	2.4E+02	nc	2.4E+02	nc	2.0E+00
Chloroethane	75-00-3	3.0E+00	c	6.5E+01	c	3.9E+00	c	2.1E-02
Chloroform	67-66-3	2.5E-01	c	5.2E+00	c	1.7E-01	c	1.1E-03
Chloromethane	74-87-3	4.8E+01	nc	1.6E+02	nc	1.9E+02	nc	1.3E+00
4-Chloro-2-methylaniline	95-69-2	8.4E-01	c	4.3E+01	c	1.2E-01	c	1.0E-03
beta-Chloronaphthalene	91-58-7	3.9E+03	nc	2.7E+04	nc	4.9E+02	nc	3.2E+01
o-Chloronitrobenzene	88-73-3	1.4E+00	nc	4.5E+00	nc	1.5E-01	nc	9.6E-04
p-Chloronitrobenzene	100-00-5	1.0E+01	nc	3.8E+01	nc	1.2E+00	nc	7.9E-03
2-Chlorophenol	95-57-8	6.4E+01	nc	2.4E+02	nc	3.0E+01	nc	6.1E-01
2-Chloropropane	75-29-6	1.8E+02	nc	6.0E+02	nc	2.1E+02	nc	1.3E+00
o-Chlorotoluene	95-49-8	1.6E+02	nc	2.5E+02	Csat	1.2E+02	nc	1.3E+00
Chlorpyrifos	2921-88-2	1.8E+02	nc	2.6E+03	nc	1.1E+02	nc	6.3E+01
Chlorpyrifos-methyl	5598-13-0	6.1E+02	nc	8.8E+03	nc	3.7E+02	nc	3.1E+01
Chromium III	16065-83-1	1.2E+05	nc	1.0E+06	max	5.5E+04	nc	2.0E+09
Chromium VI	18540-29-9	2.1E+02	c	4.5E+03	c	1.1E+02	nc	4.2E+01
Cobalt	7440-48-4	9.0E+02	c	1.9E+04	c	7.3E+02	nc	6.6E+02
Copper and compounds	7440-50-8	3.1E+03	nc	8.2E+04	nc	1.5E+03	nc	1.0E+03
Crotonaldehyde	123-73-9	5.3E-03	c	1.1E-01	c	5.9E-03	c	3.2E-04
Cyanazine	21725-46-2	5.8E-01	c	2.9E+01	c	8.0E-02	c	5.3E-04
Cyanide and compounds	74-90-8	1.1E+01	nc	3.5E+01	nc	2.0E+02	gws	4.0E+01
Cyanogen	460-19-5	2.3E+03	Csat	2.3E+03	Csat	1.5E+03	nc	7.9E+00
Cyanogen bromide	506-68-3	7.0E+03	nc	1.8E+05	nc	3.3E+03	nc	1.8E+01
Cyclohexane	110-82-7	6.8E+01	Csat	6.8E+01	Csat	1.2E+04	nc	3.1E+02

CONTAMINANT	CAS No.	Residential Soil[1,4] (mg/kg)	Value Basis[5]	Industrial Soil[1,4] (mg/kg)	Value Basis[5]	Ground Water[2,4] (ug/L)	Value Basis[5]	Migration to Groundwater[3,4] (mg/kg)
Cyclohexanone	108-94-1	3.1E+05	nc	1.0E+06	max	1.8E+05	nc	1.2E+03
Cyhalothrin/Karate	68085-85-8	3.1E+02	nc	4.4E+03	nc	1.8E+02	nc	3.5E+03
Cypermethrin	52315-07-8	6.1E+02	nc	8.8E+03	nc	3.7E+02	nc	1.6E+03
Dacthal	1861-32-1	6.1E+02	nc	8.8E+03	nc	3.7E+02	nc	5.6E+00
Dalapon	75-99-0	1.8E+03	nc	2.6E+04	nc	2.0E+02	gws	1.3E+00
DDD	72-54-8	2.4E+00	c	1.7E+02	c	2.8E-01	c	1.1E+01
DDE	72-55-9	1.7E+00	c	1.2E+02	c	2.0E-01	c	3.5E+01
DDT	50-29-3	1.7E+00	c	1.2E+02	c	2.0E-01	c	2.1E+01
Diazinon	333-41-5	5.5E+01	nc	7.9E+02	nc	3.3E+01	nc	4.3E-01
Dibenzofuran	132-64-9	7.8E+01	nc	2.0E+03	nc	3.7E+01	nc	1.1E+01
1,4-Dibromobenzene	106-37-6	6.1E+02	nc	8.8E+03	nc	3.7E+02	nc	7.8E+00
Dibromochloromethane	124-48-1	7.6E+00	c	6.8E+02	c	8.0E-01	c	1.8E-02
1,2-Dibromo-3-chloropropane	96-12-8	8.0E-01	c	7.1E+01	c	2.0E-01	gws	1.0E-03
1,2-Dibromoethane	106-93-4	2.7E-02	c	6.2E-01	c	5.0E-02	gws	2.6E-04
Dibutyl phthalate	84-74-2	6.1E+03	nc	8.8E+04	nc	3.7E+03	nc	5.0E+03
Dicamba	1918-00-9	1.8E+03	nc	2.6E+04	nc	1.1E+03	nc	4.5E+00
1,2-Dichlorobenzene	95-50-1	1.5E+02	Csat	1.5E+02	Csat	6.0E+02	gws	1.2E+01
1,3-Dichlorobenzene	541-73-1	3.5E+01	nc	1.3E+02	nc	6.0E+02	gws	1.2E+01
1,4-Dichlorobenzene	106-46-7	2.0E+00	c	4.5E+01	c	7.5E+01	gws	2.2E+00
3,3-Dichlorobenzidine	91-94-1	1.1E+00	c	5.5E+01	c	1.5E-01	c	4.9E-03
1,4-Dichloro-2-butene	764-41-0	7.9E-03	c	1.8E-01	c	1.2E-03	c	7.2E-06
Dichlorodifluoromethane	75-71-8	9.4E+01	nc	1.9E+02	Csat	3.9E+02	nc	5.3E+00
1,1-Dichloroethane	75-34-3	6.1E+02	nc	1.6E+03	Csat	9.1E+02	nc	5.9E+00
1,2-Dichloroethane	107-06-2	3.5E-01	c	7.7E+00	c	5.0E+00	gws	2.8E-02
1,1-Dichloroethylene	75-35-4	1.3E+02	nc	4.3E+02	nc	7.0E+00	gws	5.9E-02
1,2-Dichloroethylene (cis)	156-59-2	4.3E+01	nc	1.5E+02	nc	7.0E+01	gws	4.0E-01
1,2-Dichloroethylene (trans)	156-60-5	5.4E+01	nc	1.8E+02	nc	1.0E+02	gws	6.2E-01
2,4-Dichlorophenol	120-83-2	1.8E+02	nc	2.6E+03	nc	1.1E+02	nc	1.1E+00
4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	94-82-6	4.9E+02	nc	7.0E+03	nc	2.9E+02	nc	2.3E+00
2,4-Dichlorophenoxyacetic Acid (2,4-D)	94-75-7	6.9E+02	nc	1.2E+04	nc	7.0E+01	gws	1.7E+00
1,2-Dichloropropane	78-87-5	6.4E-01	c	1.4E+01	c	5.0E+00	gws	3.0E-02
1,3-Dichloropropene	542-75-6	7.0E-01	c	1.6E+01	c	4.0E-01	c	2.5E-03
2,3-Dichloropropanol	616-23-9	1.8E+02	nc	2.6E+03	nc	1.1E+02	nc	4.6E-01
Dichlorvos	62-73-7	1.7E+00	c	8.5E+01	c	2.3E-01	c	1.1E-03
Dicofol	115-32-2	1.1E+00	c	5.6E+01	c	1.5E-01	c	1.9E-02
Dicyclopentadiene	77-73-6	1.9E+01	nc	6.2E+01	nc	1.4E+01	nc	3.8E-01
Dieldrin	60-57-1	3.0E-02	c	1.5E+00	c	4.2E-03	c	3.6E-03
Diethylene glycol, monobutyl ether	112-34-5	6.1E+02	nc	8.8E+03	nc	3.7E+02	nc	1.6E+00
Diethylene glycol, monoethyl ether	111-90-0	3.7E+03	nc	5.2E+04	nc	2.2E+03	nc	8.8E+00
Di(2-ethylhexyl)adipate	103-23-1	4.0E+02	c	2.1E+04	c	4.0E+02	gws	7.8E+02
Diethyl phthalate	84-66-2	4.9E+04	nc	7.0E+05	nc	2.9E+04	nc	4.5E+02
Diethylstilbestrol	56-53-1	1.0E-04	c	5.2E-03	c	1.4E-05	c	3.3E-04

CONTAMINANT	CAS No.	Residential Soil[1,4] (mg/kg)	Value Basis[5]	Industrial Soil[1,4] (mg/kg)	Value Basis[5]	Ground Water[2,4] (ug/L)	Value Basis[5]	Migration to Groundwater[3,4] (mg/kg)
Difenzoquat (Avenge)	43222-48-6	4.9E+03	nc	7.0E+04	nc	2.9E+03	nc	1.4E+04
1,1-Difluoroethane	75-37-6	1.1E+03	Csat	1.1E+03	Csat	8.3E+04	nc	5.7E+02
Diisopropyl methylphosphonate	1445-75-6	3.9E+02	Csat	3.9E+02	Csat	2.9E+03	nc	1.5E+01
3,3'-Dimethoxybenzidine	119-90-4	3.5E+01	c	1.8E+03	c	4.8E+00	c	3.0E-01
Dimethylamine	124-40-3	7.9E-02	nc	2.6E-01	nc	4.2E-02	nc	1.7E-04
N-N-Dimethylaniline	121-69-7	4.4E+01	nc	2.0E+02	nc	1.2E+01	nc	8.6E-02
2,4-Dimethylaniline	95-68-1	6.5E-01	c	3.3E+01	c	9.0E-02	c	7.9E-04
2,4-Dimethylaniline hydrochloride	21436-96-4	8.4E-01	c	4.3E+01	c	1.2E-01	c	1.0E-03
3,3'-Dimethylbenzidine	119-93-7	2.1E-01	c	1.1E+01	c	2.9E-02	c	8.9E-03
2,4-Dimethylphenol	105-67-9	1.2E+03	nc	1.8E+04	nc	7.3E+02	nc	9.0E+00
2,6-Dimethylphenol	576-26-1	3.7E+01	nc	5.3E+02	nc	2.2E+01	nc	7.3E-01
3,4-Dimethylphenol	95-65-8	6.1E+01	nc	8.8E+02	nc	3.7E+01	nc	1.2E+00
Dimethyl phthalate	131-11-3	6.1E+05	nc	1.0E+06	max	3.7E+05	nc	2.0E+03
4,6-Dinitro-o-cyclohexyl phenol	131-89-5	1.2E+02	nc	1.8E+03	nc	7.3E+01	nc	4.1E+01
1,2-Dinitrobenzene	528-29-0	6.1E+00	nc	8.8E+01	nc	3.7E+00	nc	4.7E-02
1,3-Dinitrobenzene	99-65-0	6.1E+00	nc	8.8E+01	nc	3.7E+00	nc	3.7E-02
1,4-Dinitrobenzene	100-25-4	6.1E+00	nc	8.8E+01	nc	3.7E+00	nc	4.7E-02
2,4-Dinitrophenol	51-28-5	1.2E+02	nc	1.8E+03	nc	7.3E+01	nc	2.9E-01
Dinitrotoluene mixture	25321-14-6	7.1E-01	c	3.6E+01	c	9.9E-02	c	1.9E-03
2,4-Dinitrotoluene	121-14-2	1.2E+02	nc	1.8E+03	nc	7.3E+01	nc	5.7E-01
2,6-Dinitrotoluene	606-20-2	6.1E+01	nc	8.9E+02	nc	3.7E+01	nc	2.5E-01
Dinoseb	88-85-7	6.1E+01	nc	8.8E+02	nc	7.0E+00	gws	3.3E-02
1,4-Dioxane	123-91-1	4.4E+01	c	2.2E+03	c	6.1E+00	c	2.6E-02
Diphenylamine	122-39-4	1.5E+03	nc	2.2E+04	nc	9.1E+02	nc	2.5E+01
1,2-Diphenylhydrazine	122-66-7	6.1E-01	c	3.1E+01	c	8.4E-02	c	2.6E-03
Diquat	85-00-7	1.3E+02	nc	1.9E+03	nc	2.0E+01	gws	8.2E-02
Disulfoton	298-04-4	2.4E+00	nc	3.5E+01	nc	1.5E+00	nc	6.4E-02
1,4-Dithiane	505-29-3	6.1E+02	nc	8.8E+03	nc	3.7E+02	nc	3.9E+00
Diuron	330-54-1	1.2E+02	nc	1.8E+03	nc	7.3E+01	nc	1.2E+00
Endosulfan	115-29-7	3.7E+02	nc	5.3E+03	nc	2.2E+02	nc	2.0E+01
Endothall	145-73-3	1.2E+03	nc	1.8E+04	nc	1.0E+02	gws	4.4E-01
Endrin	72-20-8	1.8E+01	nc	2.6E+02	nc	2.0E+00	gws	9.9E-01
Epichlorohydrin	106-89-8	7.8E+00	nc	2.6E+01	nc	2.1E+00	nc	8.6E-03
Ethion	563-12-2	3.1E+01	nc	4.4E+02	nc	1.8E+01	nc	6.4E+00
2-Ethoxyethanol	110-80-5	2.4E+04	nc	3.5E+05	nc	1.5E+04	nc	6.5E+01
Ethyl acetate	141-78-6	1.9E+04	nc	2.6E+04	Csat	5.5E+03	nc	3.5E+01
Ethylbenzene	100-41-4	1.1E+02	Csat	1.1E+02	Csat	7.0E+02	gws	8.9E+00
Ethylene diamine	107-15-3	5.5E+03	nc	7.9E+04	nc	3.3E+03	nc	1.6E+01
Ethylene glycol	107-21-1	1.2E+05	nc	1.0E+06	max	7.3E+04	nc	3.0E+02
Ethylene glycol, monobutyl ether	111-76-2	3.1E+04	nc	4.4E+05	nc	1.8E+04	nc	7.4E+01
Ethylene thiourea (ETU)	96-45-7	4.4E+00	c	7.0E+01	nc	6.1E-01	c	2.6E-03
Ethyl ether	60-29-7	2.3E+03	Csat	2.3E+03	Csat	1.2E+03	nc	5.5E+00
Ethyl methacrylate	97-63-2	5.5E+01	Csat	5.5E+01	Csat	5.5E+02	nc	3.0E+01
Fenamiphos	22224-92-6	1.5E+01	nc	2.2E+02	nc	9.1E+00	nc	1.6E-01

CONTAMINANT	CAS No.	Residential Soil[1,4] (mg/kg)	Value Basis[5]	Industrial Soil[1,4] (mg/kg)	Value Basis[5]	Ground Water[2,4] (ug/L)	Value Basis[5]	Migration to Groundwater[3,4] (mg/kg)
Fluometuron	2164-17-2	7.9E+02	nc	1.1E+04	nc	4.7E+02	nc	8.8E+00
Fluoride	7782-41-4	3.7E+03	nc	5.3E+04	nc	4.0E+03	gws	1.2E+04
Fomesafen	72178-02-0	2.6E+00	c	1.3E+02	c	3.5E-01	c	1.6E-01
Fonofos	944-22-9	1.2E+02	nc	1.8E+03	nc	7.3E+01	nc	3.5E+00
Formaldehyde	50-00-0	1.2E+04	nc	1.8E+05	nc	7.3E+03	nc	3.0E+01
Formic Acid	64-18-6	1.1E+05	nc	1.0E+06	max	7.3E+04	nc	2.9E+02
Furan	110-00-9	2.5E+00	nc	8.6E+00	nc	6.1E+00	nc	3.0E-02
Furazolidone	67-45-8	1.3E-01	c	6.5E+00	c	1.8E-02	c	6.6E-04
Furfural	98-01-1	1.8E+02	nc	2.6E+03	nc	1.1E+02	nc	4.6E-01
Glycidaldehyde	765-34-4	2.4E+01	nc	3.5E+02	nc	1.5E+01	nc	5.9E-02
Glyphosate	1071-83-6	6.1E+03	nc	8.8E+04	nc	7.0E+02	gws	1.0E+02
Heptachlor	76-44-8	1.1E-01	c	5.5E+00	c	4.0E-01	gws	2.3E+01
Heptachlor epoxide	1024-57-3	5.3E-02	c	2.7E+00	c	2.0E-01	gws	6.7E-01
Hexabromobenzene	87-82-1	1.2E+02	nc	1.8E+03	nc	7.3E+01	nc	1.0E+01
Hexachlorobenzene	118-74-1	3.0E-01	c	1.5E+01	c	1.0E+00	gws	2.2E+00
Hexachlorobutadiene	87-68-3	6.2E+00	c	3.2E+02	c	8.6E-01	c	1.9E+00
HCH (alpha)	319-84-6	9.0E-02	c	5.9E+00	c	1.1E-02	c	5.7E-04
HCH (beta)	319-85-7	3.2E-01	c	2.1E+01	c	3.7E-02	c	2.0E-03
HCH (gamma) Lindane	58-89-9	4.4E-01	c	2.9E+01	c	2.0E-01	gws	9.4E-03
HCH-technical	608-73-1	3.2E-01	c	2.1E+01	c	3.7E-02	c	5.2E-03
Hexachlorocyclopentadiene	77-47-4	3.7E+02	nc	5.2E+03	nc	5.0E+01	gws	4.0E+02
Hexachlorodibenzo-p-dioxin mixture (HxCDD)	19408-74-3	7.8E-05	c	4.0E-03	c	1.1E-05	c	1.8E-04
Hexachloroethane	67-72-1	3.5E+01	c	8.8E+02	nc	4.8E+00	c	3.6E-01
Hexachlorophene	70-30-4	1.8E+01	nc	2.6E+02	nc	1.1E+01	nc	2.0E+03
1,6-Hexamethylene diisocyanate	822-06-0	1.7E+00	nc	5.5E+00	nc	2.1E-02	nc	5.0E-03
n-Hexane	110-54-3	4.3E+01	Csat	4.3E+01	Csat	1.5E+03	nc	7.0E+01
Hexazinone	51235-04-2	2.0E+03	nc	2.9E+04	nc	1.2E+03	nc	3.4E+01
HMX	2691-41-0	3.8E+03	nc	9.5E+04	nc	1.8E+03	nc	1.4E+02
Hydrazine	302-01-2	1.6E-01	c	8.2E+00	c	2.2E-02	c	9.1E-05
Hydrogen sulfide	7783-06-4	2.3E+02	nc	6.1E+03	nc	1.1E+02	nc	
p-Hydroquinone	123-31-9	8.7E+00	c	4.4E+02	c	1.2E+00	c	2.6E-02
Iron	7439-89-6	5.5E+04	nc	1.0E+06	max	2.6E+04	nc	1.3E+04
Isobutanol	78-83-1	1.3E+04	nc	2.7E+04	Csat	1.8E+03	nc	1.2E+01
Isophorone	78-59-1	5.1E+02	c	2.6E+04	c	7.1E+01	c	4.2E-01
Isopropalin	33820-53-0	9.2E+02	nc	1.3E+04	nc	5.5E+02	nc	1.5E+02
Isopropyl methyl phosphonic acid	1832-54-8	6.1E+03	nc	8.8E+04	nc	3.7E+03	nc	1.5E+01
Lead*	7439-92-1	4.0E+02	nc	1.0E+03	nc	1.5E+01	gws	2.7E+02
Lead (tetraethyl)	78-00-2	6.1E-03	nc	8.8E-02	nc	3.7E-03	nc	9.2E-04
Lithium	7439-93-2	1.6E+03	nc	4.1E+04	nc	7.3E+02	nc	4.4E+03
Malathion	121-75-5	1.2E+03	nc	1.8E+04	nc	7.3E+02	nc	8.1E+00
Maleic anhydride	108-31-6	6.1E+03	nc	8.8E+04	nc	3.7E+03	nc	1.5E+01
Manganese (non-food)	7439-96-5	3.3E+03	nc	4.8E+04	nc	1.7E+03	nc	2.2E+03
Mephosfolan	950-10-7	5.5E+00	nc	7.9E+01	nc	3.3E+00	nc	7.9E-02

CONTAMINANT	CAS No.	Residential Soil[1,4] (mg/kg)	Value Basis[5]	Industrial Soil[1,4] (mg/kg)	Value Basis[5]	Ground Water[2,4] (ug/L)	Value Basis[5]	Migration to Groundwater[3,4] (mg/kg)
Mepiquat	24307-26-4	1.8E+03	nc	2.6E+04	nc	1.1E+03	nc	1.2E+01
Mercury, inorganic		2.3E+01	nc	6.1E+02	nc	2.0E+00	gws	2.1E+00
Mercury (methyl)	22967-92-6	6.1E+00	nc	8.8E+01	nc	3.7E+00	nc	
Methacrylonitrile	126-98-7	2.1E+00	nc	8.8E+00	nc	1.0E+00	nc	4.2E-03
Methanol	67-56-1	3.1E+04	nc	4.4E+05	nc	1.8E+04	nc	7.5E+01
Methidathion	950-37-8	6.1E+01	nc	8.8E+02	nc	3.7E+01	nc	1.6E-01
Methoxychlor	72-43-5	3.1E+02	nc	4.4E+03	nc	4.0E+01	gws	1.6E+02
Methyl acetate	79-20-9	2.2E+04	nc	9.6E+04	nc	6.1E+03	nc	2.5E+01
Methyl acrylate	96-33-3	7.0E+01	nc	1.6E+02	Csat	1.8E+02	nc	1.0E+01
Methyl Tertiary Butyl Ether (MTBE)	1634-04-4	1.5E+02	c	1.1E+04	Csat	1.7E+01	c	7.1E-02
2-Methylaniline (o-toluidine)	95-53-4	2.0E+00	c	1.0E+02	c	2.8E-01	c	5.7E-03
2-Methyl-4-chlorophenoxyacetic acid	94-74-6	3.1E+01	nc	4.4E+02	nc	1.8E+01	nc	9.4E-02
4-(2-Methyl-4-chlorophenoxy) butyric acid	94-81-5	6.1E+02	nc	8.8E+03	nc	3.7E+02	nc	2.9E+00
2-(2-Methyl-4-chlorophenoxy) propionic acid	93-65-2	6.1E+01	nc	8.8E+02	nc	3.7E+01	nc	2.2E-01
Methylcyclohexane	108-87-2	8.5E+01	Csat	8.5E+01	Csat	6.3E+03	nc	7.6E+02
4,4'-Methylenebisbenzeneamine	101-77-9	1.9E+00	c	9.9E+01	c	2.7E-01	c	5.4E-02
4,4'-Methylene bis(2-chloroaniline)	101-14-4	4.9E+00	c	2.5E+02	c	6.7E-01	c	3.7E-01
4,4'-Methylene bis(N,N'-dimethyl)aniline	101-61-1	1.1E+01	c	5.4E+02	c	1.5E+00	c	8.7E-01
Methylene bromide	74-95-3	6.7E+01	nc	2.4E+02	nc	6.1E+01	nc	3.1E-01
Methylene chloride	75-09-2	8.9E+00	c	2.1E+02	c	5.0E+00	gws	2.3E-02
4,4'-Methylenediphenyl isocyanate	101-68-8	3.5E+05	nc	1.0E+06	max			
Methyl ethyl ketone	78-93-3	2.2E+04	nc	5.6E+04	Csat	7.0E+03	nc	2.9E+01
Methyl isobutyl ketone	108-10-1	8.9E+03	Csat	8.9E+03	Csat	6.3E+03	nc	5.9E+01
Methyl methacrylate	80-62-6	2.2E+03	nc	3.4E+03	Csat	1.4E+03	nc	6.5E+00
2-Methyl-5-nitroaniline	99-55-8	1.5E+01	c	7.5E+02	c	2.0E+00	c	1.5E-02
Methyl parathion	298-00-0	1.5E+01	nc	2.2E+02	nc	9.1E+00	nc	8.5E-02
2-Methylphenol	95-48-7	3.1E+03	nc	4.4E+04	nc	1.8E+03	nc	1.4E+01
3-Methylphenol	108-39-4	3.1E+03	nc	4.4E+04	nc	1.8E+03	nc	3.9E+01
4-Methylphenol	106-44-5	3.1E+02	nc	4.4E+03	nc	1.8E+02	nc	3.9E+00
Methyl styrene (mixture)	25013-15-4	1.3E+02	nc	2.8E+02	Csat	6.0E+01	nc	1.1E+00
Methyl styrene (alpha)	98-83-9	2.8E+02	Csat	2.8E+02	Csat	4.3E+02	nc	7.9E+00
Metolaclor (Dual)	51218-45-2	9.2E+03	nc	1.3E+05	nc	5.5E+03	nc	8.6E+01
Metribuzin	21087-64-9	1.5E+03	nc	2.2E+04	nc	9.1E+02	nc	4.7E+01
Mirex	2385-85-5	2.7E-01	c	1.4E+01	c	3.7E-02	c	7.1E-01
Molybdenum	7439-98-7	3.9E+02	nc	1.0E+04	nc	1.8E+02	nc	7.4E+01
Monochloramine	10599-90-3	6.1E+03	nc	8.8E+04	nc	3.7E+03	nc	
Naled	300-76-5	1.2E+02	nc	1.8E+03	nc	7.3E+01	nc	5.7E-01
Nickel and compounds	7440-02-0	1.6E+03	nc	4.1E+04	nc	1.0E+02	gws	1.3E+02
Nitrate	14797-55-8	1.3E+05	nc	1.0E+06	max	1.0E+04	gws	

CONTAMINANT	CAS No.	Residential Soil[1,4] (mg/kg)	Value Basis[5]	Industrial Soil[1,4] (mg/kg)	Value Basis[5]	Ground Water[2,4] (ug/L)	Value Basis[5]	Migration to Groundwater[3,4] (mg/kg)
Nitrite	14797-65-0	7.8E+03	nc	2.0E+05	nc	1.0E+03	gws	
2-Nitroaniline	88-74-4	1.8E+02	nc	2.6E+03	nc	1.1E+02	nc	5.6E-01
Nitrobenzene	98-95-3	2.0E+01	nc	1.1E+02	nc	3.4E+00	nc	2.2E-02
Nitrofurantoin	67-20-9	4.3E+03	nc	6.2E+04	nc	2.6E+03	nc	3.7E+01
Nitrofurazone	59-87-0	3.2E-01	c	1.6E+01	c	4.5E-02	c	8.5E-04
Nitroglycerin	55-63-0	6.1E+00	nc	8.8E+01	nc	3.7E+00	nc	3.4E-02
4-Nitrophenol	100-02-7	4.9E+02	nc	7.0E+03	nc	2.9E+02	nc	1.7E+00
2-Nitropropane	79-46-9	7.6E-03	c	1.8E-01	c	1.2E-03	c	5.7E-06
N-Nitrosodi-n-butylamine	924-16-3	2.4E-02	c	6.2E-01	c	2.0E-03	c	2.9E-05
N-Nitrosodiethanolamine	1116-54-7	1.7E-01	c	8.8E+00	c	2.4E-02	c	9.7E-05
N-Nitrosodiethylamine	55-18-5	3.2E-03	c	1.6E-01	c	4.5E-04	c	2.3E-06
N-Nitrosodimethylamine	62-75-9	9.5E-03	c	4.8E-01	c	1.3E-03	c	5.7E-06
N-Nitrosodiphenylamine	86-30-6	9.9E+01	c	5.0E+03	c	1.4E+01	c	7.6E-01
N-Nitroso di-n-propylamine	621-64-7	6.9E-02	c	3.5E+00	c	9.6E-03	c	4.8E-05
N-Nitroso-N-methylethylamine	10595-95-6	2.2E-02	c	1.1E+00	c	3.1E-03	c	2.1E-05
N-Nitrosopyrrolidine	930-55-2	2.3E-01	c	1.2E+01	c	3.2E-02	c	3.3E-04
m-Nitrotoluene	99-08-1	6.9E+02	Csat	6.9E+02	Csat	1.2E+02	nc	8.0E-01
o-Nitrotoluene	88-72-2	2.8E+00	c	2.5E+02	c	2.9E-01	c	1.9E-03
p-Nitrotoluene	99-99-0	4.0E+01	c	1.8E+03	nc	4.2E+00	c	2.8E-02
NuStar	85509-19-9	4.3E+01	nc	6.2E+02	nc	2.6E+01	nc	1.8E+03
Oryzalin	19044-88-3	3.1E+03	nc	4.4E+04	nc	1.8E+03	nc	9.6E+01
Oxadiazon	19666-30-9	3.1E+02	nc	4.4E+03	nc	1.8E+02	nc	2.6E+01
Oxamyl	23135-22-0	1.5E+03	nc	2.2E+04	nc	2.0E+02	gws	8.4E-01
Oxyfluorfen	42874-03-3	1.8E+02	nc	2.6E+03	nc	1.1E+02	nc	2.1E+02
Paraquat dichloride	1910-42-5	2.7E+02	nc	4.0E+03	nc	1.6E+02	nc	9.9E+00
Parathion	56-38-2	3.7E+02	nc	5.3E+03	nc	2.2E+02	nc	1.0E+01
Pentachlorobenzene	608-93-5	4.9E+01	nc	7.0E+02	nc	2.9E+01	nc	2.0E+01
Pentachloronitrobenzene	82-68-8	1.9E+00	c	9.5E+01	c	2.6E-01	c	8.3E-02
Pentachlorophenol	87-86-5	3.0E+00	c	1.1E+02	c	1.0E+00	gws	2.8E-02
Perchlorate	7790-98-9	5.5E+01	nc	1.4E+03	nc	2.6E+01	nc	
Permethrin	52645-53-1	3.1E+03	nc	4.4E+04	nc	1.8E+03	nc	2.4E+03
Phenol	108-95-2	1.8E+04	nc	2.6E+05	nc	1.1E+04	nc	5.6E+01
m-Phenylenediamine	108-45-2	3.7E+02	nc	5.3E+03	nc	2.2E+02	nc	1.5E+00
p-Phenylenediamine	106-50-3	1.2E+04	nc	1.7E+05	nc	6.9E+03	nc	4.8E+01
2-Phenylphenol	90-43-7	2.5E+02	c	1.3E+04	c	3.5E+01	c	1.4E+01
Phosphine	7803-51-2	1.8E+01	nc	2.6E+02	nc	1.1E+01	nc	
Phosphorus (white)	7723-14-0	1.6E+00	nc	4.1E+01	nc	7.3E-01	nc	5.4E-02
p-Phthalic acid	100-21-0	6.1E+04	nc	8.8E+05	nc	3.7E+04	nc	2.5E+02
Phthalic anhydride	85-44-9	1.2E+05	nc	1.0E+06	max	7.3E+04	nc	5.2E+02
Polybrominated biphenyls	59536-65-1	5.5E-02	c	2.8E+00	c	7.6E-03	c	
Polychlorinated biphenyls (PCBs)	1336-36-3	2.2E-01	c	1.0E+01	c	5.0E-01	gws	9.0E-01
Aroclor 1016	12674-11-2	3.9E+00	nc	5.0E+01	nc	9.6E-01	c	1.3E+00
Aroclor 1221	11104-28-2	2.2E-01	c	1.0E+01	c	5.6E-03	c	2.3E-03
Aroclor 1232	11141-16-5	2.2E-01	c	1.0E+01	c	5.6E-03	c	2.3E-03

CONTAMINANT	CAS No.	Residential Soil[1,4] (mg/kg)	Value Basis[5]	Industrial Soil[1,4] (mg/kg)	Value Basis[5]	Ground Water[2,4] (ug/L)	Value Basis[5]	Migration to Groundwater[3,4] (mg/kg)
Aroclor 1242	53469-21-9	2.2E-01	c	1.0E+01	c	3.4E-02	c	4.5E-02
Aroclor 1248	12672-29-6	2.2E-01	c	1.0E+01	c	3.4E-02	c	5.9E-02
Aroclor 1254	11097-69-1	2.2E-01	c	1.0E+01	c	3.4E-02	c	2.7E-01
Aroclor 1260	11096-82-5	2.2E-01	c	1.0E+01	c	3.4E-02	c	3.9E-01
Polycyclic Aromatic Hydrocarbons (PAHs)								
Acenaphthene	83-32-9	3.7E+03	nc	3.8E+04	nc	3.7E+02	nc	7.3E+01
Acenaphthylene	208-96-8	3.8E+03	nc	4.4E+04	nc	3.7E+02	nc	9.1E+01
Anthracene	120-12-7	2.2E+04	nc	3.9E+05	nc	1.8E+03	nc	1.7E+03
Benz[a]anthracene	56-55-3	6.2E-01	c	2.9E+01	c	9.2E-02	c	1.5E+00
Benzo[b]fluoranthene	205-99-2	6.2E-01	c	2.9E+01	c	9.2E-02	c	4.5E+00
Benzo[k]fluoranthene	207-08-9	6.2E+00	c	2.9E+02	c	9.2E-01	c	4.5E+01
Benzo[g,h,i]perylene	191-24-2	1.7E+03	nc	2.3E+04	nc	1.1E+03	nc	1.2E+05
Benzo[a]pyrene	50-32-8	6.2E-02	c	2.9E+00	c	2.0E-01	gws	8.2E+00
Chrysene	218-01-9	6.2E+01	c	2.9E+03	c	9.2E+00	c	1.5E+02
Dibenz[ah]anthracene	53-70-3	6.2E-02	c	2.9E+00	c	9.2E-03	c	1.4E+00
Fluoranthene	206-44-0	2.3E+03	nc	3.0E+04	nc	1.5E+03	nc	6.3E+03
Fluorene	86-73-7	2.6E+03	nc	3.3E+04	nc	2.4E+02	nc	7.8E+01
Indeno[1,2,3-cd]pyrene	193-39-5	6.2E-01	c	2.9E+01	c	9.2E-02	c	1.3E+01
Naphthalene	91-20-3	5.6E+01	nc	1.9E+02	nc	6.2E+00	nc	3.2E-01
Phenanthrene	85-01-8	2.2E+04	nc	4.1E+05	nc	1.8E+03	nc	1.5E+03
Pyrene	129-00-0	2.3E+03	nc	5.4E+04	nc	1.8E+02	nc	5.0E+02
Prometon	1610-18-0	9.2E+02	nc	1.3E+04	nc	5.5E+02	nc	5.6E+00
Prometryn	7287-19-6	2.4E+02	nc	3.5E+03	nc	1.5E+02	nc	4.6E+00
Propachlor	1918-16-7	7.9E+02	nc	1.1E+04	nc	4.7E+02	nc	7.3E+00
Propanil	709-98-8	3.1E+02	nc	4.4E+03	nc	1.8E+02	nc	2.2E+00
Propargite	2312-35-8	1.2E+03	nc	1.8E+04	nc	7.3E+02	nc	4.0E+03
iso-Propylbenzene (Cumene)	98-82-8	1.6E+02	nc	2.9E+02	Csat	6.6E+02	nc	6.3E+01
n-Propylbenzene	103-65-1	7.8E+02	nc	2.0E+04	nc	3.7E+02	nc	4.3E+01
Propylene glycol	57-55-6	3.0E+04	nc	4.1E+05	nc	1.8E+04	nc	7.4E+01
Propylene glycol, monoethyl ether	111-35-3	4.3E+04	nc	6.2E+05	nc	2.6E+04	nc	1.0E+02
Propylene glycol, monomethyl ether	107-98-2	4.3E+04	nc	6.2E+05	nc	2.6E+04	nc	1.0E+02
Pursuit	81335-77-5	1.5E+04	nc	2.2E+05	nc	9.1E+03	nc	5.4E+02
Pyridine	110-86-1	6.1E+01	nc	8.8E+02	nc	3.7E+01	nc	1.9E-01
Quinoline	91-22-5	1.6E-01	c	8.2E+00	c	2.2E-02	c	1.7E-03
RDX (Cyclonite)	121-82-4	4.4E+00	c	2.2E+02	c	6.1E-01	c	7.2E-03
Resmethrin	10453-86-8	1.8E+03	nc	2.6E+04	nc	1.1E+03	nc	1.9E+04
Ronnel	299-84-3	3.1E+03	nc	4.4E+04	nc	1.8E+03	nc	1.5E+02
Rotenone	83-79-4	2.4E+02	nc	3.5E+03	nc	1.5E+02	nc	2.0E+03
Selenious Acid	7783-00-8	3.1E+02	nc	4.4E+03	nc	1.8E+02	nc	
Selenium	7782-49-2	3.9E+02	nc	1.0E+04	nc	5.0E+01	gws	5.2E+00
Silver and compounds	7440-22-4	3.9E+02	nc	1.0E+04	nc	1.8E+02	nc	3.1E+01
Simazine	122-34-9	4.0E+00	c	2.1E+02	c	4.0E+00	gws	2.4E-02

CONTAMINANT	CAS No.	Residential Soil[1,4] (mg/kg)	Value Basis[5]	Industrial Soil[1,4] (mg/kg)	Value Basis[5]	Ground Water[2,4] (ug/L)	Value Basis[5]	Migration to Groundwater[3,4] (mg/kg)
Sodium azide	26628-22-8	3.1E+02	nc	8.2E+03	nc	1.5E+02	nc	
Sodium diethyldithiocarbamate	148-18-5	1.8E+00	c	9.1E+01	c	2.5E-01	c	1.2E-03
Strontium, stable	7440-24-6	4.7E+04	nc	1.0E+06	max	2.2E+04	nc	1.5E+04
Strychnine	57-24-9	1.8E+01	nc	2.6E+02	nc	1.1E+01	nc	1.7E-01
Styrene	100-42-5	6.3E+02	Csat	6.3E+02	Csat	1.0E+02	gws	4.1E+00
2,3,7,8-Tetrachlorodibenzodioxin (TCDD/dioxin)	1746-01-6	3.9E-06	c	2.7E-04	c	5.0E-06	gws	9.6E-05
1,2,4,5-Tetrachlorobenzene	95-94-3	1.8E+01	nc	2.6E+02	nc	1.1E+01	nc	6.6E-01
1,1,1,2-Tetrachloroethane	630-20-6	3.0E+00	c	7.1E+01	c	4.3E-01	c	3.1E-03
1,1,2,2-Tetrachloroethane	79-34-5	3.8E-01	c	9.0E+00	c	5.5E-02	c	4.0E-04
Tetrachloroethylene (PCE)	127-18-4	5.6E-01	c	1.9E+01	c	5.0E+00	gws	8.0E-02
2,3,4,6-Tetrachlorophenol	58-90-2	1.8E+03	nc	2.6E+04	nc	1.1E+03	nc	9.2E+01
p,a,a,a-Tetrachlorotoluene	5216-25-1	2.4E-02	c	1.2E+00	c	3.4E-03	c	2.7E-04
Tetrahydrofuran	109-99-9	9.3E+00	c	2.2E+02	c	1.6E+00	c	6.7E-03
Thallium and compounds	7440-28-0	6.3E+00	nc	1.6E+02	nc	2.0E+00	gws	2.8E+00
Thiobencarb	28249-77-6	6.1E+02	nc	8.8E+03	nc	3.7E+02	nc	4.1E+01
Thiocyanate	463-56-9	1.2E+01	nc	1.8E+02	nc	7.3E+00	nc	3.1E-02
Tin and compounds	7440-31-5	4.7E+04	nc	1.0E+06	max	2.2E+04	nc	1.1E+05
Toluene	108-88-3	2.6E+02	Csat	2.6E+02	Csat	1.0E+03	gws	1.0E+01
Toluene-2,4-diamine	95-80-7	1.5E-01	c	7.7E+00	c	2.1E-02	c	1.8E-04
Toluene-2,5-diamine	95-70-5	3.7E+04	nc	5.3E+05	nc	2.2E+04	nc	1.9E+02
Toluene-2,6-diamine	823-40-5	1.8E+03	nc	2.6E+04	nc	1.1E+03	nc	9.7E+00
p-Toluidine	106-49-0	2.6E+00	c	1.3E+02	c	3.5E-01	c	5.9E-03
Toxaphene	8001-35-2	4.4E-01	c	2.2E+01	c	3.0E+00	gws	3.1E+01
1,2,4-Tribromobenzene	615-54-3	3.1E+02	nc	4.4E+03	nc	1.8E+02	nc	6.0E+00
Tributyltin oxide (TBTO)	56-35-9	1.8E+01	nc	2.6E+02	nc	1.1E+01	nc	1.6E+04
2,4,6-Trichloroaniline	634-93-5	1.4E+01	c	7.3E+02	c	2.0E+00	c	2.4E-02
1,2,4-Trichlorobenzene	120-82-1	7.8E+02	nc	2.0E+04	nc	7.0E+01	gws	4.9E+00
1,1,1-Trichloroethane	71-55-6	7.1E+02	Csat	7.1E+02	Csat	2.0E+02	gws	2.1E+00
1,1,2-Trichloroethane	79-00-5	8.4E-01	c	1.9E+01	c	5.0E+00	gws	3.5E-02
Trichloroethylene (TCE)	79-01-6	4.3E-02	c	9.2E-01	c	5.0E+00	gws	4.3E-02
Trichlorofluoromethane	75-69-4	3.9E+02	nc	9.5E+02	Csat	1.3E+03	nc	2.2E+01
2,4,5-Trichlorophenol	95-95-4	6.1E+03	nc	8.8E+04	nc	3.7E+03	nc	2.5E+02
2,4,6-Trichlorophenol	88-06-2	4.4E+01	c	2.2E+03	c	6.1E+00	c	1.2E-01
2,4,5-Trichlorophenoxyacetic Acid	93-76-5	6.1E+02	nc	8.8E+03	nc	3.7E+02	nc	2.0E+00
2-(2,4,5-Trichlorophenoxy) propionic acid	93-72-1	4.9E+02	nc	7.0E+03	nc	5.0E+01	gws	3.6E+00
1,1,2-Trichloropropane	598-77-6	1.5E+01	nc	5.1E+01	nc	3.0E+01	nc	2.5E-01
1,2,3-Trichloropropane	96-18-4	3.2E-01	c	1.1E+01	nc	3.4E-02	c	2.7E-04
1,2,3-Trichloropropene	96-19-5	7.1E-01	nc	2.3E+00	nc	2.2E+00	nc	1.7E-02
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	76-13-1	2.6E+03	Csat	2.6E+03	Csat	5.9E+04	nc	2.8E+03
1,2,4-Trimethylbenzene	95-63-6	5.2E+01	nc	1.7E+02	nc	1.2E+01	nc	1.9E+00
1,3,5-Trimethylbenzene	108-67-8	2.1E+01	nc	7.0E+01	nc	1.2E+01	nc	4.6E-01
Trimethyl phosphate	512-56-1	1.3E+01	c	6.7E+02	c	1.8E+00	c	7.8E-03

Table 60-3B

CONTAMINANT	CAS No.	Residential Soil[1,4] (mg/kg)	Value Basis[5]	Industrial Soil[1,4] (mg/kg)	Value Basis[5]	Ground Water[2,4] (ug/L)	Value Basis[5]	Migration to Groundwater[3,4] (mg/kg)
1,3,5-Trinitrobenzene	99-35-4	1.8E+03	nc	2.6E+04	nc	1.1E+03	nc	5.2E+01
Trinitrophenylmethylnitramine (Tetryl)	479-45-8	2.4E+02	nc	3.5E+03	nc	1.5E+02	nc	1.3E+01
2,4,6-Trinitrotoluene	118-96-7	1.6E+01	c	4.4E+02	nc	2.2E+00	c	1.7E-01
Uranium (chemical toxicity only)	7440-61-1	1.6E+01	nc	4.1E+02	nc	7.3E+00	nc	
Vanadium and compounds	7440-62-2	7.8E+01	nc	2.0E+03	nc	3.7E+01	nc	7.3E+02
Vinclozolin	50471-44-8	1.5E+03	nc	2.2E+04	nc	9.1E+02	nc	1.4E+01
Vinyl acetate	108-05-4	4.3E+02	nc	1.4E+03	nc	4.1E+02	nc	1.8E+00
Vinyl bromide	593-60-2	1.9E-01	c	4.2E+00	c	1.0E-01	c	9.7E-04
Vinyl chloride (lifetime)	75-01-4	1.5E-01	c			2.0E+00	gws	1.3E-02
Vinyl chloride (adult)	75-01-4			8.8E+00	c	2.0E+00	gws	1.3E-02
Warfarin	81-81-2	1.8E+01	nc	2.6E+02	nc	1.1E+01	nc	4.4E-01
Xylenes	1330-20-7	1.0E+02	Csat	1.0E+02	Csat	1.0E+04	gws	1.2E+02
Zinc	7440-66-6	2.3E+04	nc	6.1E+05	nc	1.1E+04	nc	1.4E+04
Zinc phosphide	1314-84-7	2.3E+01	nc	6.1E+02	nc	1.1E+01	nc	
Zineb	12122-67-7	3.1E+03	nc	4.4E+04	nc	1.8E+03	nc	8.0E+00

Notes:

[1]The residential and industrial soil values consider ingestion and dermal exposure to soil and inhalation exposure to contaminants moving from soil to ambient air.

[2]Groundwater standards promulgated under 46CSR12 are provided, where available. Standards that are unavailable under 46CSR12 are based on a risk-based methodology that considers ingestion and inhalation exposure arising from the domestic use of groundwater.

[3]The migration from soil to groundwater values shall be applied unless it is shown to the satisfaction of the Secretary that migration of soil contaminants to groundwater will not result in an exceedance of the DeMinimis Groundwater Standards.

[4]The concentrations in this table shall be applied where the exposure pathways described in footnotes 1,2, and 3 are the major contributors to risks identified in the site assessment. If other exposure pathways are identified, the acceptable concentrations shall be determined only in consultation with the Secretary, considering all exposure pathways, and all other requirements of the regulations.

[5]Basis of standard: c – cancer effect; nc – noncancer effect; max – calculated risk-based concentration exceeds maximum possible contaminant level of $1x10^6$ mg/kg; Csat - calculated risk-based concentration exceeds residual saturation level; gws – West Virginia Groundwater Quality Standard from 46CSR12.

***Lead - Residential soil based on Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities (July 1994), USEPA OSWER Directive 9355.4-12. Industrial soil based on the USEPA documents Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soils (December 1996) and Frequently Asked Questions (FAQs) on the Adult Lead Model (April 1999).**