



New Jersey Department of Environmental Protection
Site Remediation Program

**INSTRUCTIONS FOR THE CLASSIFICATION EXCEPTION AREA / WELL
RESTRICTION AREA (CEA/WRA) FACT SHEET FORM**

General Instructions

1. **Applicability.** Use the above referenced form as directed below to propose a new Classification Exception Area/Well Restriction Area (CEA/WRA), revise an existing CEA/WRA, or request a CEA/WRA be removed (i.e., lifted). The Administrative Requirements for Remediation of Contaminated Sites, at N.J.A.C. 7:26C-7.3, lists the requirements for establishing and removing a CEA/WRA for ground water contamination delineated per N.J.A.C. 7:26E-4.3 of the Technical Requirements for Site Remediation (Technical Rules).

New or Existing CEA

Remedial Investigation Reports (RIRs) - This form and supporting documentation (i.e., the CEA proposal) are required to be submitted as part of the RIR to establish a new CEA. Attach this form with Exhibits A and B to the RIR as a separate document; see Exhibit C submittal instructions below; and, as explained in Section B below, include a contaminant fate and transport description section within the body of the RIR. If the CEA was established prior to the full RIR submittal, a CEA proposal is not required with the RIR, **however**, if the CEA was established before January 1, 2013, see the paragraph below regarding how the NJDEP currently establishes a CEA. If an established CEA needs to be revised when the RIR is submitted, follow the instructions in the applicable paragraph below with regard to the timing of the remedial action permit application submittal. After reviewing all instructions, contact the Bureau of Ground Water Pollution Abatement (BGWPA) at 609-292-8427 with any questions unless the paragraph immediately below is also applicable.

Ground Water Remedial Action Permit (RAP) Applications - This form and supporting documentation (i.e., Exhibits A through C and a fate and transport description) is required to be submitted as part of a Ground Water RAP Application, even if the CEA was previously established and regardless of whether it needs to be revised. The initial RAP application, when necessary, is a required part of a Remedial Action Report (RAR); the RAR and RAP application should be submitted simultaneously but separately bound for ease of administrative processing. After reviewing all instructions, contact the Bureau of Remedial Action Permitting at 609-984-2990 with any questions regarding CEA proposals submitted with a RAP application.

CEA Revision Prior to a Ground Water RAP Application – A CEA revision can be proposed prior to submittal of the Ground Water RAP Application by submitting this form and all supporting documentation. The documentation includes the RIR (without a RIR form), Exhibits A through C, as relevant, and, if an updated contaminant fate and transport description is not already in the RIR and is relevant to the revision, submit an attachment containing the required documentation described in Section B below. In this situation contact the BGWPA at 609-292-8427 with any questions and regarding whether any of the supporting documentation is not relevant; also see Exhibit C/GIS instructions below.

Reestablishing an Existing CEA – The NJDEP currently establishes a CEA/WRA by posting the CEA map on NJ-GeoWeb under the SRP Profile at <http://www.nj.gov/dep/gis/geoweb splash.htm> and posting the CEA/WRA Fact Sheet, which can be found using NJDEP Data Miner at: <http://www.nj.gov/dep/opra/online.html>. If a CEA was established prior to January 1, 2013, but is not yet posted on **both** these NJDEP websites, the CEA needs to be reestablished in order to adequately complete all documentation. For **any** existing CEA in this situation:

- Determine if the CEA is mapped on the NJ-GeoWeb CEA layer and if the boundaries are correct. If the CEA is not mapped or the boundary is incorrect, update the GIS deliverable as needed. See detailed Exhibit C instructions below regarding electronic submittal of the GIS deliverable.
- Confirm that the correct Program Interest ID was entered in the NJDEP Data Miner search and/or search by site name to determine if multiple PI IDs have been assigned at the site. If there is definitely no CEA/WRA Fact Sheet posted, or the CEA data is missing or incorrect in the fact sheet available through Data Miner, submit an updated CEA/WRA Fact Sheet Form (aka CEA form) and Exhibit A and B maps (without the cross section) so the Department can reestablish the CEA and update the data. Attaching a copy of the existing CEA/WRA Fact Sheet most recently issued by the NJDEP for the established CEA, and/or NJDEP

correspondence documenting when the CEA was established, or last revised, can expedite updates to the Department's CEA data.

Contact the applicable NJDEP Bureau listed above, based on whether a RAP has been issued or not, for additional information regarding any existing CEA that should be reestablished and/or revised as discussed above.

CEA Removal (i.e., Lifting)

For cases with a Ground Water RAP – If you are requesting removal of the CEA for one of these cases, **do not** submit this form. Submit a Ground Water RAP Application requesting termination of the permit.

For conditional NFA cases without a Ground Water RAP – For cases where the NJDEP issued a conditional No Further Action (NFA) letter *and* the NJDEP has not yet issued a Ground Water RAP, if you are requesting a CEA be lifted, submit this form and supporting documentation along with the Remedial Action Protectiveness/Biennial Certification Form – Ground Water.

- Pursuant to N.J.A.C. 7:26C-7.6(a), the deadline for submitting an application to obtain a Ground Water RAP was May 7, 2014 for conditional NFA cases, thus, if the CEA could not have been lifted by that date, the Ground Water RAP Application with the Remedial Action Protectiveness/Biennial Certification Form – Ground Water should have been submitted.

For all other cases without a Ground Water RAP - For these cases, this form along with supporting documentation can be submitted by itself to request a CEA be lifted at any time.

Supporting documentation for CEA removal must include data showing that concentrations of all site related ground water contaminants are at or below all applicable remediation standards throughout the entire CEA. This data must have been collected consistent with the conditions specified at N.J.A.C. 7:26C-7.9(f) and N.J.A.C. 7:26E-5. If a CEA lift is requested before a RAP is issued, the site will still be evaluated in light of these requirements and Monitored Natural Attenuation (MNA) guidance and/or guidance relevant to active remedial actions and performance monitoring.

Courtesy copies of the rules cited above are available at <http://www.nj.gov/dep/srp/regs/>. If the CEA is associated with a MNA remedy, please review the MNA Technical Guidance at <http://www.nj.gov/dep/srp/guidance/index.html>.

2. **Form Updates.** The NJDEP may update this form periodically. Please ensure you are using the latest version of this form. Download the latest versions from the NJDEP Website at <http://www.nj.gov/dep/srp/srra/forms>.
3. **Signature.** This form must be submitted with a completed Cover/Certification Form signed by the person responsible for conducting the remediation and the Licensed Site Remediation Professional (LSRP).

Note: If this form is being uploaded through the RIR Online Service, the Cover/Certification form is not required. The certification for this form is covered by the "Authorization to Submit Remedial Investigation Report Through NJDEP Online Form".

4. **Submittal Requirements:** The completed form should be placed on top of the attached Exhibits and sent, with the applicable documents discussed in 1 above, and the Cover/Certification Form to:

Bureau of Case Assignment & Initial Notice
Site Remediation Program
NJ Department of Environmental Protection
401-05H
PO Box 420
Trenton, NJ 08625-0420

It is **not** required to submit paper copies of this form in duplicate. Submit paper copies of the form and Exhibits A and B. To comply with N.J.A.C. 7:26C-7.3(a)3, 7.5(c)3i or 7.5(d)4i, submit the entire RIR and/or RAR with the CEA proposal; see 1 above and Section B instructions regarding submittal of the fate and transport description for the CEA. Unless the RIR and/or RAR are being submitted using NJDEP Online Services, submit them on CD in Adobe Portable Document Format (PDF). Although the CEA proposal is usually submitted as part of a RIR, or a RAR with a Ground Water RAP Application, package the paper copies of the CEA form and Exhibits A and B separately, not bound within the other documents. Forms should always be placed on top of their associated documents, not embedded within them. Exhibit C is submitted only to the GIS email address; see instructions below. Note that draft CEA proposals are not accepted by the Bureau of Case Assignment & Initial Notice (BCAIN).

Section A. Site Information

- **Site Name:** Provide the name of the site (i.e., ABC Corporation);
- **Program Interest (PI) Numbers:** The PI Number is assigned by the NJDEP and can be obtained via the web at <http://www.nj.gov/dep/srp/> (DEP DATA MINER REPORTS).
- **Case Tracking Numbers for this submission:** Provide all NJDEP generated site identification numbers for this submission (Hotline incident numbers, UST Notice of Intent to Close numbers, ISRA numbers, etc.). Attach additional sheets if necessary. If this form is being submitted with an application for a Ground Water Remedial Action Permit Modification, Transfer or Termination, include your permit number.

Current NJDEP policy is usually to establish one CEA for each distinct plume and discharge area regardless of whether the plume migrates off site and/or whether an active remedy is used for part of the plume and MNA for the remainder of the plume.

1. Indicate if the form is for a new CEA, a revised CEA, to reestablish an existing CEA, for an existing CEA with no changes, a proposal for lifting/removal of a CEA, or for historic fill. For sites **not** under traditional NJDEP oversight, if a CEA proposal was submitted prior to May 7, 2012, but the CEA has not yet been established, a new CEA proposal is required. In that situation check the "New CEA" box even though the CEA documentation was previously submitted. A separate form should always be submitted for a historic fill CEA even if a CEA is also needed for site contaminants of concern. See item 1 of **General Instructions** regarding reestablishing or lifting a CEA. If you are submitting this form for an existing CEA, provide the CEA Subject Item ID. The CEA Subject Item ID is assigned when the NJDEP establishes the CEA. If there are multiple CEAs at a site, each one will have a unique Subject Item ID. This ID can be found on the CEA Fact Sheet issued by the NJDEP, which is available at the Data Miner web page <http://www.nj.gov/dep/opra/online.html>.
2. Indicate the type of approved ground water remedial action (RA) or if a final RA was not yet selected. Consistent with [N.J.A.C. 7:26E-5.1\(e\)](#), do not check "Natural" if free or residual product is present. Per [N.J.A.C. 7:26E-2.1\(a\)14](#), free product or residual product is considered to be present in any environmental media using direct observation, enhanced field observation methods, field instrumentation measurements, or laboratory analytical data. As indicated in the Technical Rules, for contaminants that are in their pure phase and are at standard state conditions (20 degrees Celsius to 25 degrees Celsius and one atmosphere pressure), and that have densities greater than water, free or residual product shall be considered to be present if the contaminant is detected in ground water at concentrations equal to or greater than one percent of the water solubility of the contaminant, if ground water contains only that organic contaminant; or if a mixture of such contaminants is present, then the effective water solubility of the contaminant shall be estimated for this determination. The definition and how to estimate effective solubility is at [N.J.A.C. 7:26E-1.8](#), which states:

"Effective water solubility" means the theoretical aqueous solubility of an organic constituent in ground water that is in chemical equilibrium with a separate phase mixed product (product containing several organic chemicals). The effective water solubility of a particular organic chemical can be estimated by multiplying its mole fraction in the product mixture by its pure phase solubility.

Detailed discussion of effective solubility may be found in the NJDEP Site Remediation Program Ground Water Technical Guidance. Additionally, the water solubility for many compounds may be found on the Department's Chemical Properties Table on the Remediation Standards webpage at <http://www.nj.gov/dep/srp/guidance/rs/chemproperties.pdf>. US EPA also has an on-line tool at <http://www3.epa.gov/ceampubl/learn2model/part-two/onsite/es.html> which calculates effective solubility for fuels. Use of pure phase water solubility is appropriate when determining the effective water solubility is not practicable. The Department considers product to be present based on an EPH of 8,000 mg/kg for Category 1 fuels and 17,000 mg/kg for category 2 mixtures. This information on EPH for Category 1 and Category 2 mixtures is available at http://www.nj.gov/dep/srp/guidance/srra/eph_protocol.pdf.
3. Check "Yes" if the CEA is being submitted with any of the following RAP Forms: a RAP Application for Soil; a RAP Application for Ground Water, and a RAP Transfer/Change of Ownership Application. Note that a Ground Water RAP is not required for historic fill CEAs but a deed notice and Soil RAP is needed for historic fill on the site if historic fill related contaminants are detected above applicable soil standards.

Section B. CEA Component Information

CEA guidance at http://www.nj.gov/dep/srp/guidance/cea/cea_guide.htm provides some information on how to describe CEA components (i.e., contaminants, boundaries and longevity) and limited guidance regarding fate and transport modeling, however, this guidance has not been updated since 1998. Consequently it does not take into account that the initial CEA proposal is now to be submitted with the RIR; this change in submittal timing could impact appropriate modeling assumptions, input parameters, and the calculation of projected CEA duration and extent.

Submit the fate and transport description required by N.J.A.C. 7:26C-7.3(b)2 as a section within the RIR pursuant to N.J.A.C. 7:26E-4.3(a)6 and 7 and 4.9(a). Submit an equivalent, updated fate and transport description, within the RAR and RAP application, pursuant to N.J.A.C. 7:26E-5.7(a) and N.J.A.C. 7:26C-7.5(c) or (d). Additional information related to these various CEA components and the contaminant fate and transport description is provided below pending updates to the CEA guidance.

- 1. Contaminant(s):** Required by N.J.A.C. 7:26C-7.3(b)1. List all ground water contaminants that exceed their applicable standard in the [Ground Water Quality Standards](#) (GWQS) or, if a historic fill CEA is being proposed per N.J.A.C. 7:26E-4.7(b)1 or 2ii [i.e., ground water contamination was assumed to exist per N.J.A.C. 7:26E-3.12(b)1], list “historic fill related contaminants” on the table. No entry is required in the remaining columns if contamination is assumed for historic fill. Fill in the second column of the table with maximum contaminant concentrations and as indicated in the instructions immediately preceding the table and the foot notes below it. Preferentially report in this column the most recent 24 months of ground water data but older data should also be included here if it could still be representative of maximum values under current site conditions. Where applicable (see Note 3 below table in form), Surface Water Quality Standards (SWQS) can be obtained at <http://www.nj.gov/dep/wms/bears/swqs.htm>. Vapor Intrusion Ground Water Screening Levels (GWSL) can be found on the Vapor Intrusion Pathway website at: <http://www.nj.gov/dep/srp/guidance/vaporintrusion/>. See [Vapor Intrusion Screening Levels](#) for generic levels and [Update to VI Screening Levels](#), page 8 for site-specific options. List alternative (i.e., site-specific) screening levels if they have been approved. If this table is not large enough to include all contaminants, check the box below the foot notes and use the Addendum to the form to list the additional contaminants and associated values.
- 2. CEA Boundaries:** Consistent with N.J.A.C. 7:26C-7.3(b)3 and (c), provide the following information. Enter year of tax map. If revising a CEA, check the appropriate box if the CEA boundary or the Block and/or Lots have changed since the CEA was established. Fill in the table within the form and if this table is not large enough to include all properties included within the CEA, check the box below the table and use the Addendum to the form to list the additional blocks and lots. Use the check box within the table to indicate blocks/lots that are located off-site.

Narrative description of proposed CEA:

Indicate whether the plume is expected to remain on site or migrate off site, whether the site property boundaries are being used to define the CEA extent, and/or whether regional historic fill is known or assumed to be responsible for the contamination per N.J.A.C. 7:26E-3.12(b). If the CEA extends off site, please indicate the distance it extends off site from the site property boundary. Identify roads, streams, and other natural and manmade borders that can be used to describe the CEA boundaries. Indicate whether the CEA is horizontally and vertically delineated based only on actual data or whether fate and transport projections have been used, or for historic fill whether the footprint of the property is being used to define the boundaries per N.J.A.C. 7:26E-4.7(b)1 or 2ii.

Name(s) of the affected geologic formation(s)/unit(s):

Include only the name(s) of the formation(s)/unit(s) known to be and projected to be affected or for historic fill, assumed to be affected. The interactive mapping application NJ-GeoWeb at <http://www.nj.gov/dep/gis/newmapping.htm>, can be used to obtain names and distribution information for geologic formations or units (GIS Layers: Surficial Geology and Bedrock Geology). More detailed digital “Geodata” and published maps are available through the NJ Geologic Survey web site <http://www.nj.gov/dep/njgs/>. Note that aquifer names and distribution differ from those of geologic formations but aquifer information can also be obtained from these sources.

Direction of ground water flow:

Consistent with N.J.A.C. 7:26E-4.3(a)1, insert the predominant direction of groundwater flow. If the flow direction is variable (i.e., no predominant direction) or radial, insert the more appropriate of those terms on the CEA form. If the CEA includes multiple distinct water bearing zones with different flow directions, enter “multiple zones/variable” on the form, and, consistent with N.J.A.C. 7:26E-1.6(b)8iii and 4.3(a)1, indicate which figures in the RIR or RAR depict flow direction in the different zones/aquifers. If there are multiple zones/aquifers but the predominant flow direction is the same in **all** zones enter “multiple zones/...” followed by the predominant flow direction.

Ground Water Classification:

Indicate the classification of ground water within the CEA based on the GWQS at N.J.A.C. 7:9C-1.5, available at <http://www.nj.gov/dep/wms/bwqsa/gwqs.htm>. The classifications currently available for use are: Class I-PL Pinelands Protection Area; Class I-PL Pinelands Preservation Area; Class I-A; Class II-A; Class III-A; and Class III-B. Note that: there are currently no Class II-B areas; per N.J.A.C. 7:9C-1.5(e) and 1.10, Class II-B areas can only be established through a rulemaking process; and per N.J.A.C. 7:9C-1.5(f), demonstrating to the Department the existence of Class III areas is not subject to N.J.A.C. 7:9C-1.10, “Procedures for reclassification of ground water.”

Ground water quality criteria (GWQC) for Class III ground water classification areas must be determined based on N.J.A.C. 7:9C-1.7(e) or (f), as applicable. If Class III GWQC can be based solely on the narrative standard quoted below from [N.J.A.C. 7:9C-1.7\(e\)3](#) or [N.J.A.C. 7:9C-1.7\(f\)3](#)(pg. 16), it is appropriate to use the generic NJDEP Vapor Intrusion GWSL or alternative (i.e., site specific) screening levels as the GWQC, and thus to define CEA boundaries:

“3. Release of pollutants to the ground surface, structures or air in concentrations that pose a threat to human health;... .”

Current Vapor Intrusion GWSL are available at <http://www.nj.gov/dep/srp/guidance/vaporintrusion/>.

In Class III areas where ground water contamination discharges into a surface water body resulting in a violation of the SWQS, Class III GWQC may need to be based on either [N.J.A.C. 7:9C-1.7\(e\)2](#) or [N.J.A.C. 7:9C-1.7\(f\)2](#), as applicable. Note that, pursuant to [N.J.A.C. 7:9B- 1.14\(d\)](#)(pg. 28) all surface water classifications have a General Surface Water Quality Criteria (SWQC) for “petroleum hydrocarbons and other oils and grease” of “None noticeable in the water or deposited along the shore or on the aquatic substrata in quantities detrimental to the natural biota.” Based on this SWQC, N.J.A.C. 7:9C-1.2, and the above cited Class III requirements, the Department would set the Class III GWQC for these parameters at none noticeable where free or residual product is in, or could migrate into, a surface water body.

Vertical Depth and Horizontal Extent of CEA:

Provide the vertical depth of the CEA in feet below ground surface **and** mean sea level. Provide the horizontal extent of the CEA in acres **or** square feet and indicate the units used. Except for historic fill, the depth (maximum) and horizontal extent values shall be based on actual data and potentially on projections documented and described in the fate and transport description. Typically the depth of a CEA for historic fill will be the same as, or slightly greater than, the depth of the fill materials.

- 3. Projected Term of CEA:** Required by N.J.A.C. 7:26C-7.3(b)4. Based on the modeling/calculations documented in the fate and transport description, provide the projected duration of the CEA in years and the expected expiration date. The duration can be “indeterminate” for: metals or a historic fill CEA; when the CEA is proposed prior to source remediation; or for active remedial actions. For these situations check the “Indeterminate” box instead of providing a proposed duration and expected expiration date. Indeterminate **may** also be appropriate when the CEA is proposed prior to collection of a ground water data set sufficient for predicting a duration; consult the Bureau of Ground Water Pollution Abatement prior to checking Indeterminate in that situation.

Pursuant to N.J.A.C. 7:26C-7.3(b)2 the fate and transport description is to summarize/describe all data, assumptions, information, software and interpretations used to evaluate plume fate and transport and include information to document: that degradation products were addressed appropriately; how horizontal and vertical extent predictions were performed; how the CEA duration was projected; that the vapor intrusion (VI) pathway was included in the fate and transport description, if applicable; and that a site specific evaluation was conducted on how changes in property use or conditions above the CEA could affect the fate and transport of ground water contamination or vapors emanating from the plume.

Links to, and relevant information from, NJDEP guidance and other information sources regarding the above listed fate and transport description, model input values, and modelling applicable to CEA proposals, are provided below.

VI risk related information relevant to the fate and transport of volatile organic compounds (VOCs) is available in the [SRP Conceptual Site Model \(CSM\)](#) guidance and the SRP [Vapor Intrusion Technical Guidance](#) (VITG). In the CSM guidance see: page 18, the paragraphs on vapor intrusion; the reference list on page 24; the statement on page 33 which indicates the importance of evaluating “human activity and anticipated land use” at a site; and Example B2, page 36 which focuses on risk posed by VOCs that degrade slowly in the subsurface, or “recalcitrant VOCs.” Section 6.4.1 of the VITG discusses examples of changes in property use and conditions that could affect the fate and transport of vapors emanating from the plume; page 86 includes the following examples: conversions to residential use; building renovation or major alterations to HVAC system construction or operation; new construction (i.e., on undeveloped property); changes in ground surface cover or storm water management; and filling and/or excavation operations. In addition to including the VI pathway in the fate and transport description, the check boxes in Section E, item 2 of this form can be used to report whether the VI pathway was evaluated for each property overlying the CEA.

A comprehensive summary of chemical properties and half-lives is available at <http://www.gsi-net.com/en/publications/gsi-chemical-database.html> or in the Handbook of Environmental Degradation Rates (Howard, et.al). Soil organic carbon-water partition coefficient (K_{oc}) values are available in the Department’s Chemical Properties Table on the Remediation Standards webpage at <http://www.nj.gov/dep/srp/guidance/rs/chemproperties.pdf>.

Appendix C of the [2014 SESOIL/AT123D Soil Remediation Standards guidance document](#) (page 33) explains why the [USEPA Lloyd Kahn Method](#) is preferred by the Department for determination of total organic carbon (foc) in sediment; a description of the method is available at the indicated link. Note that the default f_{oc} value referenced in NJDEP Soil

Remediation Standards guidance for determining **soil** standards (i.e., 0.002) is for the unsaturated zone **not** the saturated zone; it is the **saturated** zone that is modelled to project CEA extent and/or duration.

Appendix D of the 2012 [NJDEP Monitored Natural Attenuation \(MNA\) Technical Guidance](#) includes a discussion of organic carbon content on page 110 which states that typical f_{oc} literature values range between 0.0002 - 0.02 and that if f_{oc} is “unknown, a default value of 0.001 (0.10 percent) is often used (e.g., ASTM, 1995).” Note that 0.001 is of the same order of magnitude as the value used for **unsaturated** soils, discussed in the paragraph above. Also note that this statement includes no indication of Department preference for use of this value; it states only that the value is “often used.” The reference cited for this statement is the ASTM 1995, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*. The [1998 NJDEP CEA guidance](#) (Appendix A, pg. 14) provides the Department’s order of preference regarding information/data sources for CEA delineation/modeling which is “as follows: site-specific data; data from nearby sites; regional studies (the New Jersey Geological Survey is a good source of regional **ground water** information); and literature values” (emphasis added). This same order of preference for information sources is repeated in the [2012 Ground Water Technical Guidance](#) (page 17).

The section on **Longevity** and APPENDIX A in the NJDEP CEA guidance document both include information relevant to evaluating and describing plume fate and transport. Please consider all the indicated and/or appropriate modeling assumptions for the **ANALYTICAL SOLUTION OPTION** discussed in APPENDIX A of the CEA guidance document (pages 15-23). The “**Initial Concentration:**” section in the CEA guidance (pages 16-17) discusses information to consider before choosing the ground water concentration data most appropriate for modeling site conditions.

The USEPA Ground Water Issue paper, [Calculation and Use of First-Order Rate Constants for Monitored Natural Attenuation Studies](#), EPA/540/S-02/500, November 2002, also includes information that can be applied to determining CEA duration and extent.

Several free public domain fate and transport ground water models are available from the USEPA at <http://www2.epa.gov/land-research/models-tools-and-databases-land-and-waste-management-research>. Ground water models listed under the Models tab include BIOCHLOR, which is for dissolved chlorinated solvents, and BIOPLUME II, BIOPLUME III and BIOSCREEN, which are for dissolved hydrocarbons from petroleum fuel releases. The web pages for each model, available through the above link, each contain links to user’s manuals, downloading instructions for the model programs and contact information for USEPA modelling experts in the Ground Water and Ecosystems Restoration Division (GWERD) of the National Risk Management Research Laboratory housed at the Kerr Center in Ada, OK.

4. **Exhibits A through C:** Attach and/or submit all Exhibits as indicated below and/or in the Instructions for the NJDEP Online – RIR Service.

Exhibit A: Site Location Map - Consistent with N.J.A.C. 7:26E-1.6(b)8, submit a copy of the portion of a USGS 7.5-minute quadrangle map that includes the proposed CEA. Please submit paper and PDF copies with the form; the PDF should be on a compact disc (CD) until an alternate electronic submittal process is available.

Exhibit B: CEA Map (excluding GIS compatible format) and Cross Section - Required by N.J.A.C. 7:26C-7.3(c)1 and (c)2. Paper and PDF copies of the map(s) and cross-section figure must be submitted with the form and on a single CD until online systems are developed (see <http://www.nj.gov/dep/online>). See instructions under Exhibit C below for GIS compatible format map (GIS deliverable).

CEA Map – The CEA map should include all the items listed:

- Known and predicted extent of the most mobile and persistent ground water contaminant(s)
- Prevailing ground water flow direction
- Proposed CEA boundary
- Locations and IDs of wells/sampling points required to comply with N.J.A.C. 7:26E-1.6 and 4.3 or 5.2(a)
- Identification of wells/sampling points that are the most representative of:
 - the farthest down gradient extent of the contamination
 - the greatest width of the contamination
 - the highest levels of ground water contamination
- Location of all area(s) of concern that caused the ground water contamination (i.e., source-areas). This includes the extent of free and residual product delineated per N.J.A.C. 7:26E-4.3(a)3.
- Location(s) and ID of down gradient well(s) closest to that/those area(s) of concern
- Location of any structures or buildings.

Cross-Section – The cross-section figure should be along the prevailing ground water flow direction and define the approximate ground water contaminant plume centerline. Include a vertical and horizontal scale (e.g., inches per foot); the vertical axis should be elevation in relation to mean sea level. The figure should include identification of:

- Location/ID of all wells and borings used to draw the cross-section (include ground surface and/or top of well casing elevations)
- Generalized location of the water table
- Generalized hydrostratigraphy (if the proposed CEA or revision is in multiple formations, identify formation boundaries and names)
- Known and predicted extent of the contaminant plume
- Proposed CEA boundaries (including upper and lower)

Exhibit C: GIS Deliverable/CEA Boundary Extent Map - Submit the CEA Boundary Extent Map via email as a GIS deliverable pursuant to N.J.A.C. 7:26C-7.3(c)1, in accordance with the requirements below and GIS guidance found at <http://www.nj.gov/dep/srp/gis>. For revisions, check “Yes” on the form if the file sent differs from the version on [NJ-GeoWeb](http://www.nj.gov/dep/srp/gis). Submittal of the GIS deliverable via email is required for a new CEA, revisions to an existing CEA where the boundary has changed, and to reestablish any existing CEA established prior to January 1, 2013, not already posted on NJ-GeoWeb. For an existing CEA with no boundary changes, please confirm whether the CEA boundary has been mapped in NJ-GeoWeb and then whether the CEA boundary is correctly depicted in [NJ-GeoWeb](http://www.nj.gov/dep/srp/gis). If both these conditions are met (i.e., the CEA has been mapped and correctly depicted in NJ-GeoWeb), a GIS deliverable does not need to be submitted; in that situation answer No on the form. Check N/A for a new CEA or any CEA that needs to be reestablished. If either “Yes” or “N/A” is checked, indicate whether a “Shape File” or a “CAD File” was sent.

GIS Deliverable submittal requirements:

- ESRI ArcMap users are advised that “mdb” (geodatabase) files are no longer accepted via email for security reasons. Attach GIS polygon shape files instead. Shape files need to include the following file extensions: .shp; .shx; .dbf; and .prj.
- Computer-aided Design (CAD) software users must submit DWG files defined in “model space” NAD 83 State Plane Coordinate feet. The CEA boundary should be mapped as a DWG **Polygon** and the record(s) that depict the extent of the CEA boundary must be named “CEA_Boundary” in the Layer field. Do not name annotation, graphics or any other map element in this way.
- Send GIS deliverables **by email only** to srpgis_cea@dep.nj.gov (do not include CAD or shape files on the CD submitted with the form).
- Please refer to http://www.nj.gov/dep/srp/gis/minimum_accuracy_requirements_for_srp_gis.pdf for the Minimum Accuracy Requirements for SRP GIS Submissions.
- In the body of the email that includes the GIS deliverable, include the CEA information as described in the Administrative Requirements for GIS Deliverables found at http://www.state.nj.us/dep/srp/gis/administrative_requirements_for_gis_deliverables.pdf.
- GIS questions/comments should be directed to srpgis@dep.nj.gov.

SECTION C. Current Ground Water Use Documentation

Well Search Results – Required by N.J.A.C. 7:26E-1.14 and 4.9(a)2. A well search should have been conducted pursuant to N.J.A.C. 7:26E-1.14(a) and the results submitted in the RIR and as a GIS deliverable (see Receptor Evaluation Instructions and Well Search E-Tools at <http://www.nj.gov/dep/srp/gis>). The well search also applies to historic fill ground water contamination.

1. Indicate the year of the most recent well search completed per N.J.A.C. 7:26E-1.14.
2. If the CEA Form is for a revised CEA or an existing CEA with no changes, please indicate whether new wells have been installed since the CEA was established. If this form is **not** for a revised CEA or an existing CEA, check “NA” for this question. Pursuant to N.J.A.C. 7:26E-1.14(a)3, the well search must be updated every two years and any new wells must be identified.
3. Indicate whether or not there are any pumping wells within the foot print of the CEA such as potable, industrial, irrigation or recovery wells.

Online reports and well search information are available at http://www.nj.gov/dep/watersupply/pw_permit.html. Questions regarding these reports/well searches should go to the Well Permitting Section of the Bureau of Water Allocation and Well Permitting at (609) 984-6831. Questions regarding Receptor Evaluation requirements of the Technical Rules should be directed to the current SRP Contact person for that topic at: http://www.nj.gov/dep/srp/srra/srra_contacts.htm.

SECTION D. Well Restriction Information

Required by N.J.A.C. 7:26C-7.9(a)4 and the GWQS at N.J.A.C. 7:9C-1.6(d). For Class I and II-A ground water and pursuant to the GWQS at N.J.A.C. 7:9C-1.6(d), where ground water quality data indicate contaminants exceed or will exceed the values referenced in the State Primary Drinking Water Regulations, N.J.A.C. 7:10- 5, the NJDEP shall restrict, or require the restriction of, potable ground water uses within any CEA. Therefore, any CEA within a Class I or II-A area is also a Well Restriction Area with regard to potable ground water use, the extent of which coincides with the boundaries of the CEA. Certain well restrictions, such as “Double Case Wells”, “Sample Potable Wells”, and “Evaluate Production Wells”, are consistently set within the boundaries of all CEAs established by the NJDEP in Class I and II-A areas. Well restrictions may be applied in Class III areas where: ground water contaminants in any Class III classification area are expected to migrate into a Class I or II-A area; potable wells are drilled through CEAs in any Class III area; or an existing ground water use in a Class III-A area includes potable use. These well restrictions are defined below:

- **Double Case Wells:** With the exception of monitoring wells installed into the first water bearing zone, any proposed well to be installed within the CEA/WRA boundary shall be double cased to an appropriate depth in order to prevent vertical contaminant migration pathways. This depth is either into a confining layer or 50 feet below the vertical extent of the CEA.
 - **Sample Potable Wells:** Any potable well to be installed within the footprint of the CEA/WRA shall be sampled annually for the parameters of concern. The first sample shall be collected prior to using the well. If contamination is detected, contact your local Health NJDEP. If the contamination is above the Safe Drinking Water Standards, then the NJDEP Hot Line should be called. Treatment is required for any well that has contamination above the Safe Drinking Water Standards.
 - **Evaluate Production Wells:** Any proposed high capacity production wells in the immediate vicinity of the CEA should be pre-evaluated to determine if pumping from these wells would draw a portion of the contaminant plume into the cone of capture of the production wells or alter the configuration of the contaminant plume.
1. Indicate if there are any other site-specific restrictions on well installation, construction, or use that should be set to restrict potable ground water uses within or near the boundaries of the proposed CEA. If there are any such site-specific well restrictions proposed for this CEA, describe them in the area provided below the question. An example could be reminding property owners that irrigation wells within the plume should not be used to supply drinking water.

SECTION E. Public Notification Requirements

Public notifications are required by N.J.A.C. 7:26C-7.3(d). As indicated by N.J.A.C. 7:26C-7.3(a)4, these notifications must be completed **prior to** submitting the CEA proposal to BCAIN. Note that although the regulations list seven different types of persons or entities to be notified, the form lists only six of them. This is because, based on N.J.A.C. 7:26C-1.6(a), the NJDEP instructs persons responsible for submitting this form to send notifications only to the entities listed in N.J.A.C. 7:26C-7.3(d)1 through 5 and 7; do **not** to send notifications to the NJDEP bureaus, listed in the “Water Supply Administration” at N.J.A.C. 7:26C-7.3(d)6.

To complete the notifications these persons and entities must be sent **a copy** of the CEA form for every CEA proposal, including historic fill CEAs along with a copy of the associated Cover/Certification Form or the equivalent contact information on that form for the person responsible for conducting the remediation and the LSRP. The NJDEP recommends also sending the site location and CEA maps to the listed entities, with the copy of each form, and a cover letter briefly explaining why the information is being sent. The NJDEP does not recommend sending any additional CEA supporting documentation to the entities listed. Sending a copy of the forms and the maps to any tenants of the properties overlying the CEA is also recommended to provide consistency with the public notification requirements of N.J.A.C. 7:26C-1.7(l)2.

Do **not** send copies of letters sent to the applicable entities or tenants, certified mail receipts, and return receipt request cards, to the NJDEP; see item 2 below for related information to send to the NJDEP. NJDEP approval of the CEA boundaries is not required prior to completing these notifications except as provided by N.J.A.C. 7:26C-2.3(a)3i; draft CEA proposals are not accepted by BCAIN. .

The website <http://www.nj.gov/dep/enforcement/county.html> may provide useful address information for completing some of the public notifications.

1. Indicate which of the entities listed on the form have been notified. Check all that apply.
2. **List of Names and Addresses** – Required by N.J.A.C. 7:26C-7.3(a)4. On the form table and/or an attachment, list the entity and property owner names and **complete** addresses of all those notified, including the municipal and county clerks, etc., listed at N.J.A.C. 7:26C-7.3(d). **If the property owner of the site is not the person responsible for the remediation, please enter that owners name and address at the top of this form table, not just in an attachment.** Also please list the date the forms were sent. (Note: this date does not need to be on the copies of the form sent to the applicable entities/owners.)

For owners of real property overlying the CEA foot print, information based on the fate and transport description requirements of N.J.A.C. 7:26C-7.3(b)2iv regarding volatile contaminants is requested; check the box above the table only if the CEA includes no volatile contaminants. For these properties, place a check in the last column of the form table if the property listed was evaluated for vapor intrusion (VI) impacts or include this information in the attachment. If an owner's notification address is different from the property they own that overlies the CEA, list the block and lot for their property overlying the CEA under/with the owner's name and address. Note that evaluating vapor intrusion impacts can include a determination that there is no VI risk due to the presence of a clean water lens or because shallow ground water is contaminated above the applicable standard but below the VI ground water screening level. See NJDEP guidance and screening levels for the VI pathway at <http://www.nj.gov/dep/srp/guidance/vaporintrusion/>.

ADDENDUM

SECTION B. CEA Component Information

Complete addendum using instructions from Section B, items 1 and 2 as applicable.