

Administrative Requirements for GIS Deliverables

GEOGRAPHIC INFORMATION SYSTEMS (GIS) GUIDANCE

Contaminated Site Remediation & Redevelopment
New Jersey Department of Environmental Protection



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Table of Contents

Intended Use of Guidance Document / Background.....	5
1. Submission of GIS Deliverables	5
1.1. Email Submission	6
1.2. DEP On-line Service Submission	6
2. Submission of GIS Deliverables via Email	7
2.1. Email Format	7
2.1.1. Subject Line Format	7
2.1.2. Body of Email (Metadata)	7
2.2. Spatial Accuracy	9
2.3. General Submission Information	9
2.3.1. Attach a PDF Copy of the Map to the Email or Zip File	9
2.3.2. One Deliverable for Each Email.....	9
2.3.3. Single Submission Type with Multiple Deliverables	9
2.3.4. Multiple Submission Types for a Single Program Interest	10
3. Submission of GIS Deliverables via DEP On-line Service Submission	10
4. GIS Deliverable	10
4.1. GIS Compliant File Types	10
4.1.1. Polygon - (AOC / Site Boundary, CEA, DN, CKE, Linear Construction)	10
4.1.2. Multiple Points (Well Search)	11
4.1.3. Single Point (Site Location)	11
4.2. File Naming Protocols	11
5. GIS Shapefile Requirements	12
5.1. Shapefile	12
5.2. Unacceptable GIS formats	12
5.3. Shapefiles Must be Polygons, Not Polylines	13
5.4. Only Include the “ <i>Shapes of Concern</i> ” in the Shapefile.....	13
5.5. Shapefile Schema for Features	13
5.5.1. Area of Concern (AOC) / Site Boundary Shapefile Schema	13
5.5.2. Classification Exception Area (CEA) Shapefile Schema.....	14
5.5.3. Currently Known Extent (CKE) Shapefile Schema	14
5.5.4. Deed Notices (DN) Shapefile Schema	15
5.5.5. Linear Construction (LC) Shapefile Schema	16

6.	CAD Drawing Requirements	17
6.1.	Valid CAD Formats	17
6.2.	Unacceptable CAD Formats	18
6.3.	CAD File Shapes Must be Polygons, Not Polylines.....	18
6.4.	Drawings Must be Georeferenced	18
6.5.	Layer Field in CAD File Used to Identify the Submitted Shape	18
6.6.	CAD Drawing Schema for Shapes	19
6.6.1.	AOC / Site Boundary CAD Drawing Schema	19
6.6.2.	CEA CAD Drawing Schema	20
6.6.3.	CKE CAD Drawing schema.....	20
6.6.4.	DN CAD Drawing schema.....	21
6.6.5.	Linear Construction CAD Drawing schema.....	22
7.	Email Examples	23
7.1.	Email Submission for Polygon Shapes (CEA, DN, CKE, Linear Construction)	23
7.1.1.	GIS Shapefile File Type	24
7.1.2.	CAD Drawing Type	25
7.2.	Email Submission for Multiple Points (Well Search)	26
7.3.	Email Submission for Site Location	27
8.	DEP-CSRR Automated Process for Polygon Submittals.....	27
9.	General GIS Questions/Comments.....	28

List of Tables

Table 1.	GIS Submissions that are emailed to CSRR.....	6
Table 2.	GIS Submissions that are submitted as part of an on-line service	6
Table 3.	Valid values for a Site Coordinates GIS Submission.....	9
Table 4.	AOC / Site Boundary shapefile schema	14
Table 5.	CEA shapefile schema.....	15
Table 6.	CKE shapefile schema.....	15
Table 7.	DN shapefile schema.....	16
Table 8.	Linear Construction shapefile schema.....	17
Table 9.	The Layer field in the CAD file is used to identify the polygon of concern.....	19
Table 10.	AOC / Site Boundary CAD drawing schema	20
Table 11.	CEA CAD drawing schema.....	21
Table 12.	CKE CAD drawing schema.....	21
Table 13.	DN CAD drawing schema.....	22
Table 14.	Linear Construction CAD drawing schema	23

List of Figures

Figure 1	Metadata email requirements	8
Figure 2	Metadata email requirements for Site Coordinates	8
Figure 3	Examples of the File Naming Protocol for a CEA GIS Deliverable.....	12
Figure 4	Typical files associated with a shapefile	13
Figure 5	Typical files associated with a CAD file once imported into GIS	18
Figure 6	Example of a CEA email submission for a shapefile Deliverable	25
Figure 7	Example of a CEA email submission for a CAD file Deliverable	26
Figure 8	Example of a Well Search email submission with attached WRS excel spreadsheet Deliverable.....	27
Figure 9	Example of a Site Location email Submission.....	28

Appendices

Appendix A	Metadata Definitions	30
Appendix B	Definitions	32

ADMINISTRATIVE REQUIREMENTS FOR GIS DELIVERABLES

Intended Use of Guidance Document

This guidance is designed to help the person responsible for conducting the remediation to comply with the New Jersey Department of Environmental Protection (NJDEP or Department) requirements established by the [Administrative Requirements for the Remediation of Contaminated Sites](#) (ARRCS Rule), N.J.A.C 7:26C and the [Technical Requirements for Site Remediation](#) (Technical Requirements), N.J.A.C. 7:26E. This guidance will be used by many different people involved in the remediation of a contaminated site, such as Licensed Site Remediation Professionals (LSRP), Non-LSRP environmental consultants, Geographic Information Systems (GIS) Professionals, and other environmental professionals. Therefore, the generic term “preparer” - will be used to refer to any person that uses this guidance to submit a GIS Deliverable.

This guidance supersedes previous Department guidance issued on this topic. This guidance may be used immediately upon issuance. However, the Department recognizes the challenge of using newly issued guidance when a remediation affected by the guidance may have already been conducted or is currently in progress. To provide for the reasonable implementation of this guidance, the Department will allow a six-month “phase-in” period between the date the guidance is issued final (or the revision date) and the time it should be used.

Background

The Contaminated Site Remediation & Redevelopment (CSRR) regulations, specifically the ARRCS Rule and Technical Requirements, require the submittal of GIS compatible maps for several key elements of the remedial investigation / remedial action. This guidance refers to the GIS compatible map as a *GIS Deliverable* and the delivery of GIS map to CSRR as a *Submission*. The different GIS Deliverables required in the regulations are called *Submission Types*. Some GIS Deliverables are not submitted in a GIS format, but a file such as a spreadsheet that can be used by the Department to create a GIS layer. GIS Deliverables are submitted via email or the Department’s On-line Service (DEP On-line) depending on the Submission Type. CSRR evaluates the Submittals using an automated process.

This guidance outlines the general administrative requirements for a GIS Deliverable. The file format of the Deliverable depends on the Submission Type. An instructional document for each Submission Type is available for the preparer on CSRR’s web page (<https://www.nj.gov/dep/srp/gis/>) that highlight the specific requirements for that Submission Type. The GIS Submission must contain Metadata (N.J.A.C. 7:26E-1.6 (a)5.iii), which is information about the data preparation and must comply with the following administrative requirements.

1. Submission of GIS Deliverables

CSRR has identified eight different Submission Types that are required by CSRR regulations:

- Area of Concern (AOC) / Site Boundary
- Classification Exception Area (CEA)
- Currently Known Extent (CKE) of Contamination
- Deed Notice (DN)
- Electronic Data Deliverable (EDD) *
- Linear Construction (LC)
- Site Coordinates (Coord)
- Well Receptor Searches (WRS)

*Note: * EDD submittals are not covered in this document*

The Electronic Data Deliverable (EDD) Submission Type is environmental sampling data that are collected at CSRR regulated sites. EDD submittals are not covered in this document; they are outlined in the [Site Remediation Program Electronic Data Interchange \(EDI\) Manual](#). The Well Receptor Search Submission Type is a series of points (locational coordinates), and results are entered into a spreadsheet. The Site Coordinate Submission is a single locational point and is entered as text. All the other Types are represented by polygons and are submitted as an Esri shapefile or a Computer-Aided Design (CAD) file. Sections 4 through 7 cover the creation of a GIS Deliverable.

A Submission should include the GIS Deliverable, a simple PDF map showing the shape(s) contained in the submittal, and the GIS metadata. Each Submission is for a single Program Interest Number (AKA Preferred ID, PI ID) and includes only one Submission Type. Most Submissions will be emailed to a specific email address that corresponds to the Submission Type. The only exception is the AOC/Site Boundary Submission Type, which is submitted via the DEP On-line service. CSRR’s automated process (Section 8) appends the Submissions to the Department’s public GIS layers.

1.1. Email Submission

Submissions submitted by email should include all the required files as attachments to the email prior to sending the email to CSRR. The address used for the Submission depends on the specific Submission Type. Table 1 identifies the email address where the submission is sent and the specific Submission Type Acronym to use. An email Submission includes the GIS Deliverable, a PDF map, and the GIS metadata. The submitter should email the GIS Submission at the same time you submit the form or report that relates to the submission. Section 2 outlines the email submittal process in more detail.

Table 1. GIS Submissions That are Emailed to CSRR

Submission Type	Acronym	Email Address	File Type
Classification Exception Area ^①	CEA	srpgis_cea@dep.nj.gov	polygon
Currently Known Extent ^②	CKE	srpgis_cke@dep.nj.gov	polygon
Deed Notice	DN	srpgis_dn@dep.nj.gov	polygon
Linear Construction	LC	srpgis@dep.nj.gov	polygon
Site Coordinate (Location)	Coord	srpgis@dep.nj.gov	single point
Well Receptor Search	WRS	srpgis_wrs@dep.nj.gov	multiple points

Notes: ① *The CEA Spreadsheet is no longer required*

② *The IEC spreadsheet is not submitted as a GIS deliverable; however, it is still included with the IEC Submission. Only submit the CKE shape as a GIS Deliverable.*

1.2. DEP On-line Service Submission

Submissions submitted via the DEP On-Line service should be attached during service preparation. At this time, the AOC / Site Boundary Submission Type (Table 2) is the only submission that can be submitted via the on-line service. The submitter needs to zip up the GIS Submission and then attach the zip file during the Attachment Upload process. Section 3 outlines the On-Line service submittal process in more detail.

Table 2. GIS Submissions That are Submitted as Part of an On-Line Service

Submission Type	Acronym	File Type
Area of Concern / Site Boundary [Ⓞ]	AOC	polygon

Note: ① *The AOC / Site Boundary GIS deliverable is submitted as a companion to the Case Information Document (CID).*

2. Submission of GIS Deliverables via Email

The CEA, CKE, DN, Linear Construction, Well Receptor Search, and Site Coordinate Submission Types are submitted to CSRR by email. A valid email Submission contains a simple PDF version of the GIS map, the GIS Deliverable, and metadata for the Deliverable. Metadata is information that describes the GIS Deliverable and how it was created. The Metadata details for the Deliverable are included in the body of the email. The submitter attaches all the required files to an email and submits it to the correct email address, which depends on the specific Submission Type (Section 1.1). The Submission should be emailed the same time you submit the corresponding form or report.

2.1. Email Format

CSRR's automated email process that was created to receive and process these Submissions needs a strict compliance with the following email format to process the submission.

2.1.1. Subject Line Format

The subject line should contain only the Program Interest Number and Submission Type Acronym, separated by a comma.

Example: *CEA submitted for XYZ site with a Program Interest Number of 013164 would be 013164, CEA*

2.1.2. Body of Email (Metadata)

The email body should include basic information about the case. This information, or metadata, identifies: 1) the environmental company / LSRP overseeing the work, 2) the professional who created the GIS submission and who could be contacted if there are GIS technical issues, and 3) the site identification information (see 2.2, below). The submitter must use the format established by CSRR by copying the required fields into the body of the email and complete the information.

All the Submission Types that are emailed to CSRR, except Site Coordinates, need to follow the guidance in Section 2.1.2.1. Submissions for Site Coordinates should follow the guidance in Section 2.1.2.2. CSRR uses this information to assign the email to the correct site and create metadata for the GIS layer.

2.1.2.1. Email Metadata Requirements (All Submission Types, Except Coordinates)

To standardize the delivery of metadata information for CEAs, CKEs, DN, Linear Construction, and Well Receptor Searches; please copy the [metadata templates](#) from the web page or the field names from figure 1 into the body of the email and completed.

Figure 1. Metadata requirements. The fields listed need to be copied into an email or a text file and the appropriate information completed for all Deliverable Types, except Site Coordinates.

Program Interest Number for Site:
Activity Number:
Name of Site as known to NJDEP:
Street Address of Site:
Municipality of Site:
County of Site:
Submission Type Acronym:
Submission Description:
Name of LSRP (or consultant) overseeing work:
LSRP's License Number:
LSRP's Email Address:
Name of GIS Author Company:
Mailing Address:
Name of Professional performing GIS work:
Email for Professional performing GIS work:
Phone Number for Professional performing GIS work:

Data entry directions are provided in Appendix A: Metadata Definitions of this guidance document. Note, the questions have been changed from the original Administrative Requirements for GIS Deliverables guidance document.

2.1.2.2. Email Metadata Requirements for Site Coordinates

A proposal to change the Site Coordinates for a Program Interest includes only a single point, not a polygon or multiple points. So, the proposed revision to the X and Y Site Coordinates is included in the body of an email and not as an attachment to the email. The X and Y Coordinates shall be in the New Jersey State Plane Coordinate System (NAD83) using feet as the units of measure. Please copy the [metadata templates](#) from the web page or the field names in figure 2 into the body of the email and complete.

Figure 2. email requirements for Site Coordinates. When submitting a Site Coordinates Deliverable to CSRR, the fields listed below need to be copied into the body of the email and the appropriate information completed for each field.

Preferred ID:
Name of Site:
X:
Y:
Location:
Method:

The valid values for the Site Coordinates Submission Type are listed in table 3. When choosing a new location, please use one of the three listed types of locations to identify a site.

- Center of Site - when there is a defined site and the site is either undeveloped or completely developed, place the cursor at the center of the site of the site, or
- Center of Facility - when there is a defined site that is only partially developed, place the cursor at the center of the developed portion of the site, or

- Center of Area of Interest – only used for point source discharges that do not involve a specific site, such as tanker spills and transformer leaks.

Table 3. Valid values for a Site Coordinates GIS Submission

Field Name	Type	Length	Description	Valid Values
Preferred ID	Text	20	Preferred ID for the site	
Name of Site	Text	40	Name for the contaminated site	
X	Double	n/a	X Coordinate of the Program Interest in NJ SPC (NAD83)	
Y	Double	n/a	Y Coordinate of the Program Interest in NJ SPC (NAD83)	
Location	Text	30	what the site coordinates represent?	Center of Site Center of Facility Center of Area of Interest
Method	Text	50	How the coordinate was determined	NJ GeoWeb GPS Survey Other: Please identify

2.2. Spatial Accuracy

The accuracy of the GIS Deliverables must meet the standards established by the Department in the NJDEP Mapping and Digital Data Standards (current version issued on February 7, 2021).

2.3. General Submission Information

A valid submission includes 1) the correct Program Interest Number, 2) metadata information, 3) the GIS Deliverable, and 4) a pdf copy of the GIS map. Emailed submittals must be sent to the correct email address.

2.3.1. Attach a PDF Copy of the Map to the Email or Zip File

Please attach a pdf copy of the Map to the submittal. For example, the well receptor pdf map attachment is the map of the well search results and not a pdf of the excel spreadsheet. The information on the map should support the features in the GIS Deliverable and will assist in the processing and validation of the GIS Deliverable. Email submittals are included as attachments to the email. For DEP On-line submissions, the pdf map should be zipped up with the other files (shapefile or CAD file and metadata file), then uploaded into the service.

2.3.2. One Deliverable for Each Email

CSRR prefers one GIS Deliverable (e.g., shape, spreadsheet) to be submitted via email; however, multiple GIS Deliverables can be submitted if the Deliverables are for the same Program Interest and Submission Type.

2.3.3. Single Submission Type with Multiple Deliverables

When a submitter has more than one Submission for a single Submission Type, such as two CEA boundaries, then both GIS Deliverables can be included in a single email. In the example of two CEA boundaries, the two boundary shapes could be provided in a single shapefile or two shapefiles each having one of the shapes. If multiple GIS Deliverables for a single Program Interest number are submitted at the same time, then an ascending numerical naming protocol should be used to establish the uniqueness of the record (CEA1, CEA2, etc.). File naming protocols are discussed in more detail in Section 4.2.

2.3.4. Multiple Submission Types for a Single Program Interest

GIS Deliverables for different Submission Types must be submitted separately to the correct location. For example, a case with deliverables for a CEA boundary and a DN Boundary must be submitted in two separate emails to the appropriate email addresses. Each Submission should be for a single Program Interest Number and include only one Submission Type.

3. Submission of GIS Deliverables via DEP On-line Service Submission

The AOC / Site Boundary Submission Type is submitted to CSRR by the DEP On-line service. The submittal is a single zipped file that contains the GIS Deliverable (CAD or Shapefile), a metadata text file, and a pdf copy of the AOC / Site Boundary map.

A plain text file is used to store the Metadata (Section 2.1.2) for the GIS Deliverable. The submitter can download the [metadata templates](#) from the web page or create a plain text file then copy the fields listed in figure 1 into the text file. The metadata information is completed and then the text file is saved using the naming protocol in Section 4.2. The metadata text along with the GIS Deliverable and a pdf copy of the GIS Deliverable (Section 2.3.2.) is zipped into a file and attached to the on-line service. The file naming protocol in Section 4.2 should be used to name the zip file. The zip file supports the information in the on-line service.

The zipped GIS Submittal is uploaded as part of the on-line service at the upload page. The Attachment Type name is “GIS Site Map Including AOC Polygons (zip).” The DEP On-Line service contains additional instructions to attach the submission to the service. If the files cannot be submitted via the service, they can be emailed to srpgis_aoc@dep.nj.gov with all files included as email attachments.

4. GIS Deliverable

The type of file to be submitted differs depending on the GIS Submission. The types can be grouped into polygons, multiple points, or a single point deliverable. A GIS Deliverable that includes polygons must be submitted as either: an Esri shapefile or a CAD file. A Multiple point GIS Deliverable is submitted as an excel spreadsheet and a single point GIS Deliverable is submitted as text in the body of an email.

4.1. GIS Compliant File Types

CSRR requires that all GIS Deliverables follow a set format to process the Submittal correctly. The following sections outline the types of files that can be submitted.

4.1.1. Polygon - (AOC / Site Boundary, CEA, DN, CKE, Linear Construction)

AOC / Site Boundary, CEA, DN, CKE, and Linear Construction are the Submission Types that require the submission of polygons. Polygon deliverables must be submitted as one of the following file types.

4.1.1.1. Acceptable GIS File Types

- Shapefile
 - *Personal Geodatabase (.mdb) and File Geodatabase (.gdb) are not accepted*

4.1.1.2. Acceptable CAD File Types

- DWG or DXF files
 - *Only CAD Drawings with DWG or DXF file extension can be processed by our automated system. Do not submit CAD files with any other extension.*

Although CAD files are accepted, shapefiles are the preferred file type. If both a shapefile and CAD file are submitted, CSRR will use the polygons from the shapefile.

4.1.2. Multiple Points (Well Search)

The Well Search, which is part of the Receptor Evaluation, is the only Submission Type that requires the submission of multiple points. An Excel Spreadsheet is used for these submissions. The correct version of the *Well Search Spreadsheet* is provided on the [CSRR forms web page](#). When starting a well search, use the current version of the spreadsheet. The spreadsheet shall be completed and submitted as an email attachment. Every time the Receptor Evaluation form is submitted to CSRR, the Well Search Deliverable shall also be submitted.

4.1.3. Single Point (Site Location)

Submittal of a new or revised Site location is the only Submission Type that requires the submission of a single point. Changes to sites coordinates should be included in the body of an email. No attachment is required for a Site Location GIS Deliverable.

4.2. File Naming Protocols

The GIS Deliverable must be named using the following protocol. The name should begin with the Program Interest number of the site, followed by an underscore, followed by the submission date with a format of ‘yyyymmdd’, and then followed by the valid Submittal Type Acronym used in the Subject Line of the Submittal. Please include only one dot in the file name, between the file root name and file extension. The file root name will contain only alphanumeric characters (i.e., letters, numbers) with no spaces, dashes, or special characters other than an underscore. If there are multiple submissions being submitted for the same Program Interest, then the files should be numbered sequentially [i.e., CEA1, CEA2, etc.]. This guidance differs slightly from the Department’s Mapping and Digital Data Standards Naming Conventions. This guidance should be used only for CSRR submittals.

The metadata text file included within the AOC / Site Boundary Submittal should use the same naming protocol with ‘_metadata’ added to the file root name as an additional suffix. Figure 3 provides an example of the correct method to name a GIS Deliverable and metadata text file.

Figure 3. Examples of the File Naming Protocol for a CEA GIS Deliverable

<u>File Naming example for CEA submission:</u>	
Site Name:	ABC Industry
Program Interest number:	013164
Date of Submittal:	April 1, 2017 (in yyyymmdd format)
 <u>Correct File Name for this example:</u>	
013164_20170401CEA	
 <u>For multiple submissions:</u>	
013164_20170401CEA1	
013164_20170401CEA2	
 <u>Correct Metadata File Name for an AOC deliverable for this example:</u>	
013164_20170401AOC_metadata.txt	

The GIS Submission Types that require the submittal of polygons are AOC / Site Boundary, CEA, DN, CKE, and Linear Construction. The shapefile format is the preferred file type for these GIS Deliverables. Guidance for Shapefile Deliverable is covered in Section 5 and CAD Deliverables in Section 6.

Shapefile Requirements

5. GIS Shapefile Requirements

The submitter should follow the guidance in this Section when submitting a shapefile as a GIS Deliverable to CSRR. As required by the NJDEP Mapping and Digital Data Standards, the shapefile is required to be in the North American Datum 1983 (NAD83) horizontal geodetic datum and in the New Jersey State Plane Coordinate system, using US feet as the units of measure.

5.1. Shapefile

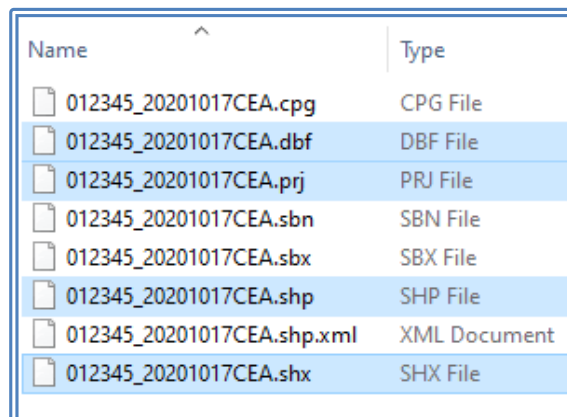
The shapefile is a geospatial vector data format. It is a set of separate files that define the vector features and attributes in the shapefile. Figure 4 shows a typical shapefile. The shapefile is the preferred format for a Deliverable containing polygons. To complete a valid shapefile, the submitter should provide, at a minimum, the following four files:

- (1) .shp (the file that stores the geometry)
- (2) .shx (the file that stores the feature geometry index)
- (3) .dbf (the file that stores the feature attribute information)
- (4) .prj (the file that stores the coordinate information)

5.2. Unacceptable GIS formats

A geodatabase is an alternate way to store GIS information in one large file, which can contain multiple point, polygon, and/or polyline layers. CSRR **cannot** accept geodatabase submittals, specifically Personal Geodatabases (.mdb), File Geodatabases (.gdb), or SDE (Spatial Database Engine) Geodatabases. Please note that ArcGIS Explorer NMF and AEP files also should not be submitted as they cannot be processed by our automated GIS deliverable processing system.

Figure 4. Typical files associated with a Shapefile. All files that comprise the Shapefile have the same file root name, but different extensions. The blue highlighted files are the minimum files that can be used to create Shapefile, but all files can be submitted.



Name	Type
012345_20201017CEA.cpg	CPG File
012345_20201017CEA.dbf	DBF File
012345_20201017CEA.prj	PRJ File
012345_20201017CEA.sbn	SBN File
012345_20201017CEA.sbx	SBX File
012345_20201017CEA.shp	SHP File
012345_20201017CEA.shp.xml	XML Document
012345_20201017CEA.shx	SHX File

5.3. Shapefiles Must be Polygons, Not Polylines

The shapes must be provided as polygon features, not polylines. Polyline features are unacceptable since the automated process cannot create a polygon from several polylines to form a polygon. Also, polylines do not always close properly; they may contain overshoots or dangles.

5.4. Only Include the “Shapes of Concern” in the Shapefile

Only the shapes of concern (e.g., CEA Boundary, DN Boundary) are included in a Shapefile GIS Deliverable. Limiting the Deliverable to only necessary features simplify the review process for CSRR. Additional features, such as tax parcels, should be omitted from the Deliverable. Any additional information needed will be in the accompanying report.

5.5. Shapefile Schema for Features

Shapefiles should conform to the schema outlined in this section and comply with the default schema templates posted on the CSRR [GIS Deliverable Templates](#) web page. FID and Shape fields are created by the shapefile, so the submitter does not have to create and/or populate these fields.

5.5.1. Area of Concern (AOC) / Site Boundary Shapefile Schema

The schema in table 4 is used when creating a shapefile for an AOC / Site Boundary Deliverable. The Regulations require the person responsible for conducting the remediation to submit a GIS compatible site plan that includes the site boundaries and the locations of all areas of concern with all reports. The GIS Deliverable shall include a single polygon for the site boundary and a polygon for each AOC included in the Case Inventory Document (CID) spreadsheet, except for the Environmental Media. The Site Boundary should be a single polygon. A multi-part polygon should be created for those sites with non-contiguous boundaries. Do not provide a polygon for the Environmental media even though they are included as an AOC in the CID. The GIS Deliverable is submitted in the same on-line service as the CID.

Table 4. AOC / Site Boundary Shapefile Schema

Field Name	Type	Length	Description	Valid Values
FID	Object ID	-	Esri unique identifier	n/a
Shape	Geometry	-	Esri geometry field	n/a
Type	Text	50	What the shape (feature) represents	AOC Boundary Site Boundary
AOC_ID ①	Text	100	Unique identifier used in the CID	column A from CID
AOC_Type ①	Text	100	AOC type assigned to the AOC in the CID	column B from CID
Descript ①	Text	255	concise and unique description of the AOC	column C from CID
NJDEP_ID ①	Number		ID that is assigned to the AOC by the Department when the CID is first uploaded in an online service ②	column I from CID

Notes: ① Do not complete if the Type is Site Boundary

② Only required after the Department assigns an ID after the initial upload

See the [GIS AOC / Site Boundary instructions](#) for additional information

The value in the Type field is used to distinguish between AOC polygons and the Site Boundary polygon. For the Site Boundary polygon, the value of the Type field should be “Site Boundary” and the AOC polygons should be “AOC Boundary.” Only the Type field needs to be completed for the Site Boundary feature, all the other fields are left blank. Since this Deliverable includes the same AOCs as the CID, the values in the shapefile attribute table should be the same as those in the CID, specifically the AOC_ID, AOC_Type, Descript, and NJDEP_ID fields. These values should equal the values entered in columns A, B, C, and I of the CID, respectfully. They link the GIS Deliverable to the information in the CID. More information is provided in the [Instructions for Completing the CID](#).

5.5.2. **Classification Exception Area (CEA) Shapefile Schema**

The schema in table 5 is used when creating a shapefile for a CEA Deliverable. A CEA is established by the Department to notify the public that designated aquifer uses are suspended in the affected area for the term of the CEA. The GIS Deliverable shall be submitted concurrently with the [CEA/Well Restriction Area \(WRA\) Fact Sheet form](#) and/or a [Remedial Action Permit \(RAP\) Application for Ground Water](#) (either Initial or Modification). The attribute values for the polygon must correspond to the information contained in the submitted form(s). If the CEA Boundary is already correctly mapped in NJ-GeoWeb, then a GIS Submission is not required.

The value in the Type field identifies the CEA boundary polygon. For the CEA Boundary polygon, the value of the Type field should be “CEA Boundary.” The Descript field is used to identify the CEAs.

Table 5. CEA Shapefile Schema

Field Name	Type	Length	Description	Valid Values
FID	Object ID	-	Esri unique identifier	n/a
Shape	Geometry	-	Esri geometry field	n/a
Type	Text	50	What the shape (feature) represents	CEA Boundary
Descript	Text	100	Short description of the CEA	n/a

Note: See the [GIS CEA instructions](#) for additional information

5.5.3. **Currently Known Extent (CKE) Shapefile Schema**

The schema in table 6 is used when creating a shapefile for a CKE Deliverable. A CKE is the extent of ground water in which contaminant concentrations in one or more potable wells exceed the applicable contaminant standards. The mapped CKE encompasses all properties with potable well contamination. Guidance on mapping a CKE is in the [IEC technical guidance document](#). The GIS deliverables shall be submitted concurrently with the Immediate Environmental Concern (IEC) Engineered System Response Action Report for the initial CKE and the IEC Source Control Report. Submittal of an updated CKE is not required if the CKE does not change between the two reports. The attribute values for the polygon must correspond to the information contained in the submitted IEC reports.

The value in the Type field identifies the CKE Boundary polygon. For the CKE Boundary polygon, the value of the Type field should be “CKE Boundary.” The Descript field includes a short description of the CKE, including the case name. The Contam field includes a list of

contaminants that are detected above the applicable contaminant standards in potable wells within the CKE. The contaminants in the Contam field should be separated by a semicolon.

Table 6. CKE Shapefile Schema

Field Name	Type	Length	Description	Valid Values
FID	Object ID	-	Esri unique identifier	n/a
Shape	Geometry	-	Esri geometry field	n/a
Type	Text	50	What the shape (feature) represents	CKE Boundary
Descript	Text	100	Short description of the CKE	n/a
Contam	Text	255	List of contaminants that exceed the remediation standards (Separated with a semicolon)	n/a

Note: see the [GIS CKE instructions](#) for additional information

5.5.4. Deed Notices (DN) Shapefile Schema

The schema in table 7 is used when creating a shapefile for a DN Deliverable, which consists of Restriction Area and Engineering Control polygons. Generally, a Restriction Area (DN Boundary) is the area that exceeds a soil remediation standard, and an Engineering Control is a physical barrier within the deed notice boundary that is designed to limit exposure to the soil contamination. The Engineering Control polygon(s) will have additional information related to the construction of the barrier. Submittal of the DN Boundary is required, the Engineering Control polygons are optional. The GIS Deliverable shall be submitted concurrently with the [Remedial Action Permit \(RAP\) Application for Soil](#) (Initial or Modification). The attribute values for the polygon must correspond to the information contained in the submitted form. If the DN Boundary is already correctly mapped in NJ-GeoWeb, then a GIS Submission is not required.

The schema is designed to allow the submittal of both Restriction Area and Engineering Control polygons in the same shapefile. The value in the Type field is used to distinguish between DN Boundary and Engineering Control polygons. For the DN Boundary polygons, the value of the Type field should be “DN Boundary” and the Engineering Control polygons should be “Engineering Control.” Only populate the Type, Descript and Depth_Ft fields for a DN Boundary feature; the EC_Type and Thick_Ft should be left blank. Engineering Control features should have all the fields completed, if possible.

The Depth_Ft field describes the minimum depth in feet below the surface at which point contamination is present for the feature. Valid values for EC_Type, which describes the Engineering Control, are listed in Table 7. The Thick_Ft field is used to describe the minimum thickness of an Engineering Control in feet. This field can be left blank if the engineering control is not a physical barrier, such as a fence or signage. All depths are in feet and are positive numbers.

Table 7. DN Shapefile Schema

Field Name	Type	Length	Description	Valid Values
FID	Object ID	-	Esri unique identifier	n/a
Shape	Geometry	-	Esri geometry field	n/a
Type	Text	50	What the shape (feature) represents	DN Boundary Engineering Control
Descript	Text	100	Short description of DN Boundary or Engineering Control	n/a
Depth_Ft	Double	-	Minimum depth to the top of contamination in feet below the ground surface	n/a
EC_Type ①	Text	50	A description of the type of engineering control	Asphalt Cap Concrete Cap Fence Impermeable Cover Lining Permeable Cover Signage Slab Soil Other:
Thick_Ft ①	Double	-	Minimum thickness of the Engineering Control in feet	n/a

Notes: ① complete only for Engineering Control features
See the [GIS Deed Notice instructions](#) for additional information

5.5.5. Linear Construction (LC) Shapefile Schema

The schema in table 8 is used when creating a shapefile for a Linear Construction project Deliverable. Linear Construction is defined as construction and development to create, maintain, or alter a roadway, railroad or utility by a person conducting a linear construction project that includes one or more contaminated properties and will generate more than 200 cubic yards of contaminated soil for fill or disposal during the duration of the linear construction project. The [Linear Construction Guidance Document](#) states that the excavated areas and the contaminated sites should be included in a GIS Deliverable map. The excavation and site features shall be represented as polygons in the GIS Deliverable. The polygon attribute values must correspond to the information contained in the [Linear Construction Project Notification and Final Report Form](#).

The value in the Type field distinguishes between Excavated Area and Contaminated Property polygons. For Excavated Area polygons, the value of the Type field should be “Excavated Area” and Contaminated Property polygons should be “Contaminated Site.” Each excavated area should be represented by its own polygon and each Contaminated Site should be mapped as the site’s property boundary. The Descript field should only be completed for the Excavated Area and the Pref_ID, Name and Address fields should only be completed for Contaminated Sites.

Table 8. Linear Construction Shapefile Schema

Field Name	Type	Length	Description	Valid Values
FID	Object ID	-	Esri unique identifier	n/a
Shape	Geometry	-	Esri geometry field	n/a
Type	Text	50	What the shape (feature) represents	Excavated Area Contaminated Site
Descript ①	Text	100	Short description of the excavated area	n/a
Pref_ID ②	Text	20	Preferred ID for the contaminated site	n/a
Name ②	Text	50	Site Name for the contaminated site	n/a
Address ②	Text	50	Address for the contaminated site	n/a

Note: ① - complete only for Excavated Area(s)
② - complete only for Contaminated Site(s)
see the [GIS Linear Construction instructions](#) for additional information.

CAD Requirements

6. CAD Drawing Requirements

The submitter should follow the guidance in this Section when submitting a CAD Drawing as a GIS Deliverable to CSRR. As required by the NJDEP Mapping and Digital Data Standards, the CAD Drawing must be georeferenced using the New Jersey State Plane Coordinate System, North American Datum of 1983 (NAD83), feet units. The GIS Deliverable contained in the CAD drawing must be a polygon defined in “model space” and use the schema outlined below.

A CAD drawing is a group of points, lines, polylines, and text that are organized by layers to produce technical drawings. Each drawing feature contains information used to produce the drawing such as line weight, line type and color. This format can be used to produce a GIS Deliverable provided several guidelines are followed. Importing a CAD drawing into an Esri ArcGIS format is straight forward, but the CAD file must be carefully prepared prior to conversion for the conversion to be successful. When CAD files are imported into an ArcGIS format, a group layer is added containing the following five feature classes: Annotation; Point; Polyline; Polygon and Multipatch with no supporting documentation regarding the data.

The only feature in the CAD drawing that is imported for review is the polygon that represents the GIS deliverable (e.g., AOC, Site Boundary, CEA Boundary, DN Boundary). It is suggested that a clean CAD drawing be created with only the polygon of concern. If a new CAD drawing is not created, then the automated process designed by CSRR needs to be able to identify the shape of concern. The layer field in the CAD file is used to identify the polygons of concern. The values for this field must be named as outlined in 6.5, below and the value should not be used for any other point, polyline, annotation, graphics, or other map element.

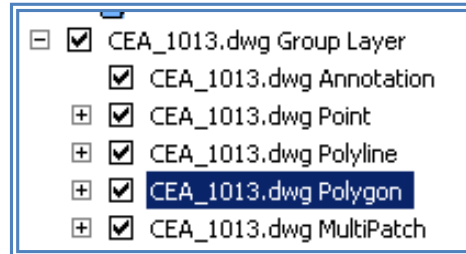
6.1. Valid CAD Formats

CSRR accepts only CAD files with the DWG or DXF file extension.

6.2. Unacceptable CAD Formats

CAD drawing file types other than DWG and DXF are not accepted.

Figure 5. Typical files associated with a CAD file once imported into GIS. The Deliverable shape must be in the polygon group to be imported



6.3. CAD File Shapes Must be Polygons, Not Polylines

All boundaries that are being submitted should be defined as polygons, not as polylines or line segments. Line segment features are unacceptable since the automated process cannot create a polygon from several line segments to form a polygon. Polylines inherently have errors associated with them, such as dangling ends and our automated system cannot process these features. A dangling end occurs when the end points of the line do not connect exactly.

6.4. Drawings Must be Georeferenced

CAD software users must submit DWG files defined in “model space” NJ State Plane Coordinate (NAD 83) feet units. All CAD submittals shall be georeferenced to the NJ State Plane Coordinate System so that it can be viewed at the correct location in GIS. This is done by using georeferenced Orthoimagery for the State of New Jersey.

Orthoimagery for the State of New Jersey is available through the [NJ Geographic Information Network](#) website. From the NJGIN website, perform the following:

- Select Imagery under Find GIS Data on the right side of the screen
- Follow the instructions for AutoCAD Users
- On the ArcGIS Online item page, scroll to the bottom.
- On the bottom right of the page, copy the URL of the WMS for use in AutoCAD and other OGC-compliant client software.

Once the appropriate orthoimagery is available in AutoCAD, perform the following:

- Draw your GIS polygon in CAD based on using the underlying orthoimagery as a reference

CAD drawings with a locally established point of origin (0,0) are not acceptable as these have not been georeferenced to the NJ State Plane Coordinate System and if submitted, will be returned for correction.

6.5. Layer Field in CAD File Used to Identify the Submitted Shape

The CSRR’s automated process uses the layer field in the CAD file to identify the shape(s) of concern. Each Submission Type has a unique value used to identifying the shape(s) of concern. The schema in Section 6.6 identifies the correct values. Make sure the value of the layer field is properly named. Only the shape(s) of concern should be named using this protocol and do not name the annotation, graphics, or any other map element in this way.

Table 9 is an example of a hypothetical CEA Deliverable that includes multiple shapes. The CEA Submission Type requires the value of the Layer field of the CEA shape to be “CEA Boundary.” Based on the value in the layer field, CSRR would process the polygons associated with FID #592 and #687. The polygons associated with FID #591, #593 and #594 would not be processed because they are not named correctly, even though they have CEA in the layer field. The layer field naming protocol must be followed so the shapes in the CAD files can be processed correctly.

Table 9. The Layer Field in the CAD File is used to Identify the Polygon of Concern

FID	Shape	Entity	Layer	Color	Linetype	LineWt	RefName
417	Polygon	Insert	Base-surveyDP	7	Continuous	25	A\$C5E
484	Polygon	Insert	Base-surveyFW	7	Continuous	25	A\$C49
591	Polygon	LWPPolyline	CEA2000-02	150	Continuous	25	
592	Polygon	LWPPolyline	CEA Boundary	150	Hidden2	25	
687	Polygon	LWPPolyline	CEA Boundary	150	Hidden2	25	
693	Polygon	Spline	CEA2012-05	150	Continuous	25	
694	Polygon	LWPPolyline	CEA2008-10	13	Continuous	25	

6.6. CAD Drawing Schema for Shapes

CAD drawing files must conform to the schema outlined in this section. The Layer field, which already exists in the CAD file, is used to identify the Submission Type. Additional fields must be added to accommodate the specific schema for each Submission Type. Name the fields exactly as listed in the guidance below.

6.6.1. AOC / Site Boundary CAD Drawing Schema

The schema in table 10 is used when creating a CAD drawing for an AOC / Site Boundary Deliverable. The Regulations require the person responsible for conducting the remediation to submit a GIS compatible site plan that includes the site boundaries and the locations of all areas of concern with all reports. The GIS Deliverable shall include a polygon for the site boundary and a polygon for each AOC included in the Case Inventory Document (CID) spreadsheet, except for the Environmental Media. If the Site Boundary is non-contiguous, then multiple polygons should be drawn each identified by “Site Boundary” entered in the Layer field. Do not provide a polygon for the Environmental media even though they are included as an AOC in the CID. The GIS Deliverable is submitted in the same on-line service as the CID.

The AOC_ID, AOC_Type, Descript, and NJDEP_ID fields should be added to the CAD drawing and completed as outlined below. The value in the Layer field is used to distinguish between AOC polygons and Site Boundary polygons. For the Site Boundary polygons, the value of the Layer field should be “Site Boundary” and the AOC polygons should be named “AOC Boundary.” For the Site Boundary shape, only the Layer field needs to be completed, all the other fields are left blank. Since this Deliverable includes the same AOCs as the CID, the values in the shapefile attribute table should be the same as those in the CID, specifically the AOC_ID, AOC_Type, Descript, and NJDEP_ID fields. These values should equal the values entered in columns A, B, C, and I of the CID, respectfully. They link the GIS Deliverable to the information in the CID. More information is provided in the [Instructions for Completing the CID](#).

Table 10. AOC / Site Boundary CAD Drawing Schema

Field Name	Type	Length	Description	Valid Values
Layer	Text	50	What the shape represents (Same as Type in shapefile schema)	AOC Boundary Site Boundary
AOC_ID ①	Text	100	Unique identifier used in the CID	column A from CID
AOC_Type ①	Text	100	AOC type assigned to the AOC in the CID	column B from CID
Descript ①	Text	255	concise and unique description of the AOC	column C from CID
NJDEP_ID ①	Number		Assigned to the AOC by the Department when the CID is first uploaded in an online service ②	column I from CID

Note: ① Do not complete if the Type is Site Boundary
 ② Only required after the Department assigns an ID after the initial upload
 See the [GIS AOC / Site Boundary instructions](#) for additional information

6.6.2. CEA CAD Drawing Schema

The schema in table 11 is used when creating a CAD drawing for a CEA Deliverable. A CEA is established by the Department to notify the public that designated aquifer uses are suspended in the affected area for the term of the CEA. The GIS Deliverable shall be submitted concurrently with the [CEA/Well Restriction Area \(WRA\) Fact Sheet form](#) and/or a [Remedial Action Permit \(RAP\) Application for Ground Water](#) (either Initial or Modification). The attribute values for the polygon must correspond to the information contained in the submitted form(s). If the CEA Boundary is already correctly mapped in NJ-GeoWeb, then a GIS Submission is not required.

The Descript field should be added to the CAD drawing. The value in the Layer field identifies the CEA boundary polygon. For the CEA Boundary polygon, the value of the Layer field should be “CEA Boundary.” The Descript field is used to identify the CEAs.

Table 11. CEA CAD Drawing Schema

Field Name	Type	Length	Description	Valid Values
Layer	Text	50	What the shape represents	CEA Boundary
Descript	Text	100	Description of the CEA	n/a

Note: See the [GIS CEA instructions](#) for additional information

6.6.3. CKE CAD Drawing schema

The schema in table 12 is used when creating a CAD drawing for a CKE. A CKE is the extent of ground water in which contaminant concentrations in one or more potable wells exceed the applicable contaminant standards. The mapped CKE encompasses all properties with potable well contamination. Guidance on mapping a CKE is in the [IEC technical guidance document](#). The GIS deliverables shall be submitted concurrently with the Immediate Environmental Concern (IEC) Engineered System Response Action Report for the initial CKE and the IEC Source Control Report. Submittal of an updated CKE is not required if the CKE does not change between the two

reports. The attribute values for the polygon must correspond to the information contained in the submitted IEC reports.

The Descript and Contam fields should be added to the CAD drawing. The value in the Layer field identifies the CKE Boundary polygon. For the CKE Boundary polygon, the value of the Layer field should be “CKE Boundary.” The Descript field includes a short description of the CKE, including the case name. The Contam field includes a list of contaminants that are detected above the applicable contaminant standards in potable wells within the CKE. The contaminants in the Contam field should be separated by a semicolon.

Table 12. CKE CAD Drawing Schema

Field Name	Type	Length	Field Description	Valid Values
Layer	Text	50	What the shape represents	CKE Boundary
Descript	Text	100	Description of the CKE	n/a
Contam	Text	255	List of contaminants that exceed the remediation standards	n/a

Note: See the [GIS CKE instructions](#) for additional information

6.6.4. DN CAD Drawing schema

The schema in table 13 is used when creating a CAD drawing for a DN Deliverable, which consists of Restriction Area and Engineering Control polygons. Generally, a Restriction Area (DN Boundary) is the area that exceeds a soil remediation standard, and an Engineering Control is a physical barrier within the deed notice boundary that is designed to limit exposure to the soil contamination. The Engineering Control polygon(s) will have additional information related to the construction of the barrier. Submittal of the DN Boundary is required, the Engineering Control polygons are optional. The GIS Deliverable shall be submitted concurrently with the [Remedial Action Permit \(RAP\) Application for Soil](#) (Initial or Modification). The attribute values for the polygon must correspond to the information contained in the submitted form. If the DN Boundary is already correctly mapped in NJ-GeoWeb, then a GIS Submission is not required.

The schema is designed to allow the submittal of both Restriction Area and Engineering Control polygons in the same CAD drawing. The Descript, Depth_Ft, EC_Type, and Thick_Ft fields should be added to the CAD drawing. The value in the Type field is used to distinguish between DN Boundary and Engineering Control polygons. For DN Boundary polygons, the value of the Layer field should be “DN Boundary” and Engineering Control polygons should be “Engineering Control.” For a DN Boundary feature, only populate the Layer, Descript and Depth_Ft fields; the EC_Type and Thick_Ft should be left blank. Engineering Control features should have all the fields completed, if possible.

The Depth_Ft field describes the minimum depth in feet below the surface at which point contamination is present for the feature. Valid values for EC_Type, which describes the Engineering Control, are listed in Table 7. The Thick_Ft field is used to describe the minimum thickness of an Engineering Control in feet. This field can be left blank if the engineering control is not a physical barrier, such as a fence or signage. All depths are in feet and are positive numbers.

Table 13. DN CAD Drawing Schema

Field Name	Type	Length	Field Description	Valid Values
Layer	Text	50	What the shape represents	DN Boundary Engineering Control
Descript	Text	100	Short description of DN Boundary or Engineering Control	n/a
Depth_Ft	Double		Minimum depth to the top of contamination in feet below the ground surface	n/a
EC_Type ①	Text	50	A description of the type of engineering control	Asphalt Cap Concrete Cap Fence Impermeable Cover Lining Permeable Cover Signage Slab Soil Other:
Thick_Ft ①	Double		Minimum thickness of the Engineering Control in feet	n/a

Note: ① Do not complete if the Layer field is Deed Notice Boundary
See the [GIS Deed Notice instructions](#) for additional information

6.6.5. Linear Construction CAD Drawing schema

The schema in table 14 is used when creating a CAD drawing for a Linear Construction project Deliverable. Linear Construction is defined as construction and development to create, maintain, or alter a roadway, railroad or utility by a person conducting a linear construction project that includes one or more contaminated properties and will generate more than 200 cubic yards of contaminated soil for fill or disposal during the duration of the linear construction project. The [Linear Construction Guidance Document](#) states that the excavated areas and the contaminated sites should be included in a GIS Deliverable map. The excavation and site features shall be represented as polygons in the GIS Deliverable. The polygon attribute values must correspond to the information contained in the [Linear Construction Project Notification and Final Report Form](#).

The Descript, Pref_ID, Name, and Address fields should be added to the CAD drawing. The value in the Layer field distinguishes between Excavated Area and Contaminated Property polygons. For Excavated Area polygons, the value of the Layer field should be “Excavated Area” and Contaminated Property polygons should be “Contaminated Site.” Each excavated area should be represented by its own polygon and each Contaminated Site should be mapped as the site’s property boundary. The Descript field should only be completed for the Excavated Area and the Pref_ID, Name and Address fields should only be completed for Contaminated Sites.

Table 14. Linear Construction CAD Drawing Schema

Field Name	Type	Length	Field Description	Valid Values
Layer	Text	50	What the shape represents	Excavated Area Contaminated Site
Descript ①	Text	100	Short Description of the excavated area	n/a
Pref_ID ②	Text	25	Preferred ID for the contaminated site	n/a
Name ②	Text	50	Site Name for the contaminated site	n/a
Address ②	Text	50	Site Address for the contaminated site	n/a

Note: ① - complete only for Excavated Area; ② - complete only for Contaminated Site see the [GIS Linear Construction instructions](#) for additional information

7. Email Examples

The following examples illustrate the correct GIS Submission format.

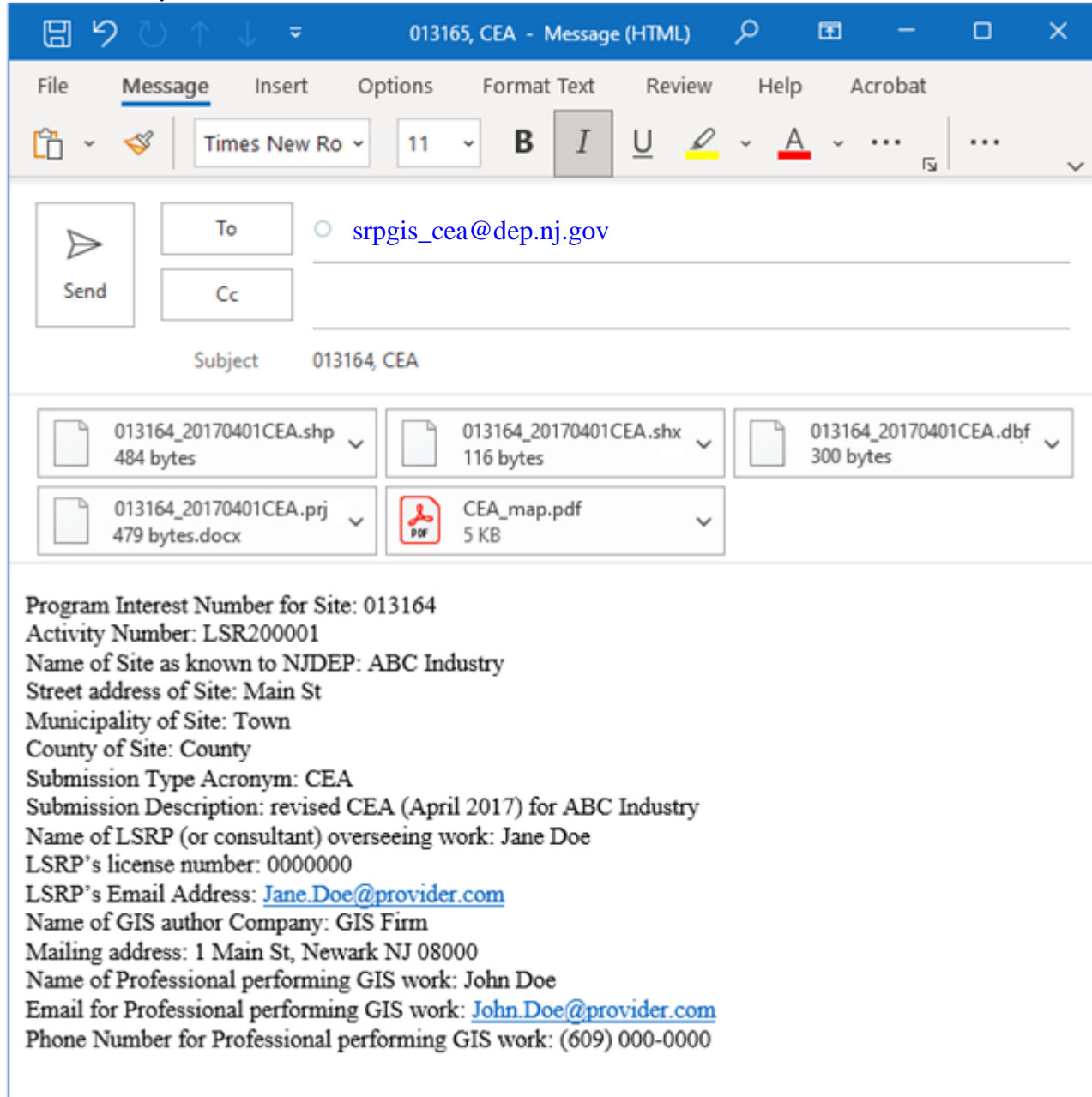
7.1. Email Submission for Polygon Shapes (CEA, DN, CKE, Linear Construction)

The GIS Deliverable for a polygon shape can either be a shapefile or a CAD Drawing file. The following examples are for a CEA GIS Deliverable being submitted for Program Interest Number 013164. Make sure that the email is sent to the correct address, the subject line includes the Program Interest and Submission Type (separated by a comma), the correct files are attached and the email body from figure 1 has been copied and completed.

7.1.1. GIS Shapefile File Type

Figure 6 is an example of a CEA Submittal with a shapefile Deliverable

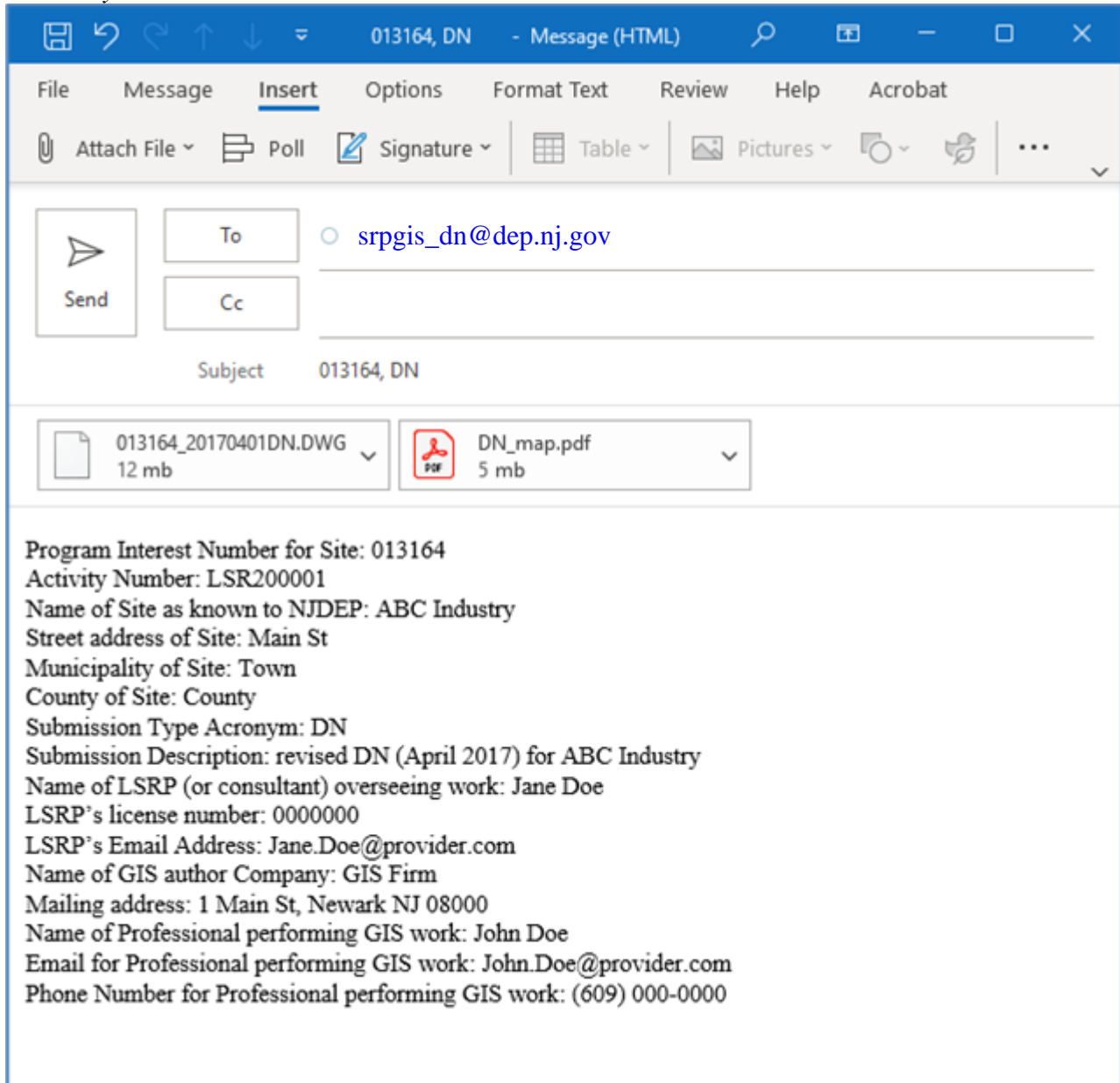
Figure 6. Example of a CEA email submission for a shapefile Deliverable including a pdf map of the CEA Boundary.



7.1.2. CAD Drawing Type

Figure 7 is an example of a DN Submittal with a CAD file Deliverable

Figure 7. Example of a DN email submission for a CAD file Deliverable including a pdf map of the CEA Boundary.

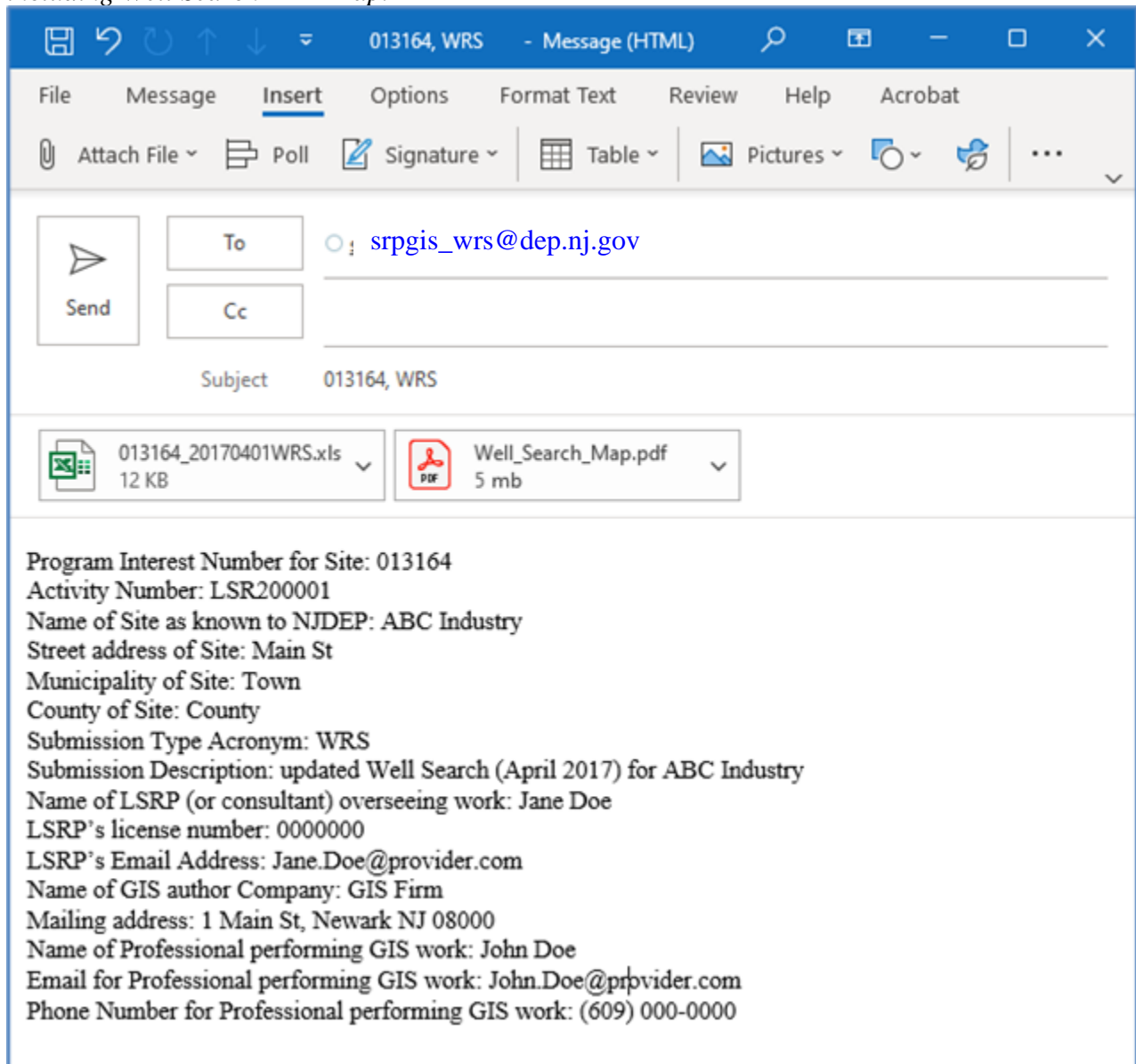


7.2. **Email Submission for Multiple Points (Well Search)**

The only GIS Deliverable with a multiple points submission is the Well Search excel spreadsheet. The following example (Figure 8) is for a revised Well Search GIS Deliverable being submitted for Program Interest Number 013164. Note that the email is sent to the correct address, the subject line includes the Program Interest and Submission Type (WRS) separated by a comma. The correct files are attached and the email body from figure 1 has been copied into the email and completed.

Please refer to the [Well Search Instructions](#) for information on how to conduct a wells search and update the well search spreadsheet.

Figure 8. Example of a Well Search email submission with attached WRS excel spreadsheet Deliverable including Well Search PDF Map.

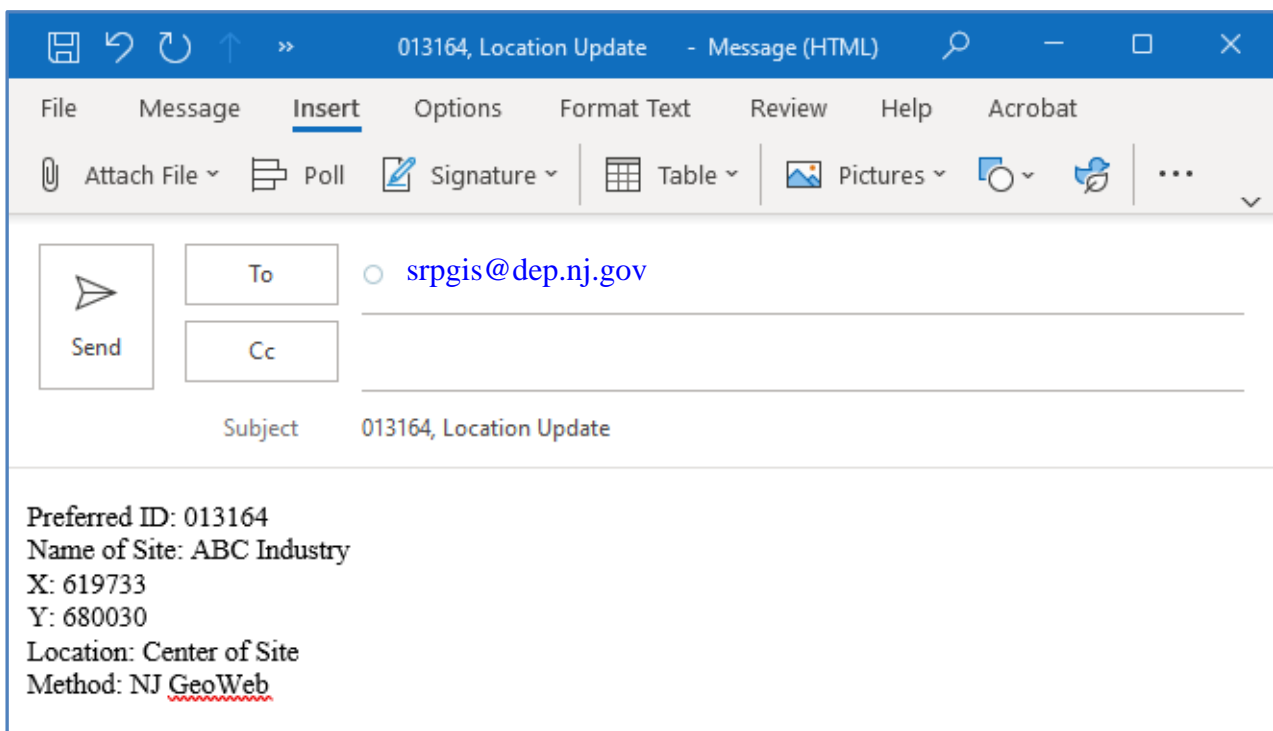


7.3. Email Submission for Site Location

Adding or modifying the Site Location Coordinates is the only Submission Type that requires the submission of a single point. The GIS Deliverable for a single point includes only the email. All the information for the point is included in the body of the email. The following example (Figure 9) is for a Site Coordinate GIS Deliverable being submitted for Program Interest Number 013164. Note that the email is sent to the correct address, the submit line includes the Program Interest and Submission Type (separated by a comma), there are no files attached and the email body from figure 2 has been copied and completed.

Please refer to the [Site Coordinates instructions](#) for information on how to obtain locational coordinates in NJ State Plane (NAD 83) ft.

Figure 9. Example of a Site Location email Submission



8. DEP-CSRR Automated Process for Polygon Submittals

CSRR's email process relies on the submitter emailing the submittal to the correct email box. Once received, the automated process evaluates the information in the email and logs the receipt of the email including all relevant information in the body of the email (metadata). The Preferred ID in the subject line of the email is checked to see if it is correct and then the email information is logged using that Preferred ID. The attached GIS deliverable is evaluated using several basic tests. The first test is to see if the file is readable. The second is to determine if a valid polygon shape is included in the Deliverable. The final test is to verify that the shape is located correctly (georeferenced correctly). If the shape passes all these tests, the shape is added to CSRR's internal GIS layer. An email response is sent documenting the outcome of the Submittal automated review. This is not the final approval of the GIS shape(s).

The shape(s) resides in an internal layer for review by CSRR and once the shape is approved, it is promoted to the CSRR's public layer, at which time it will be viewable in [NJ-Geoweb](#). Approval of the institutional control boundary is through the issuance of a RAP permit for soil or ground water or through a CEA Fact Sheet letter. CKEs are reviewed and approved internally and then posted to the CKE layer in [NJ-Geoweb](#).

9. General GIS Questions/Comments

GIS Questions/Comments regarding this document and any CSRR GIS issues can be emailed to srpgis@dep.nj.gov

APPENDIX A

Metadata Directions

Metadata is information about the deliverable. The basic information includes a project description, the environmental company, the LSRP overseeing the work, the professional who created the GIS, and the site identification information. Metadata is a major component of the GIS Submission. For email submissions, the metadata is submitted as the body of the email. For an on-line submission, a text file named 'metadata.txt' is created to store the information, then zipped up with the GIS Deliverable and attached to the on-line service. Use the [metadata templates](#) from the web page to create the Metadata portion of the submission. The fields are copied into either the body of the email or the text file and then completed based on the explanations below.

Program Interest Number for Site: Enter the number that CSRR assigned to the site. This number is also referred to as the PI ID or Preferred ID number. If you do not have the CSRR Program Interest number, go to DEP DataMiner. Using Search by Category, select Site Remediation, then scroll down to Site Search Reports and run either the All CSRR Sites by Selected PI Address or All CSRR Sites by Selected PI Name to obtain the CSRR Program Interest Number for the CSRR case of interest.

Activity Number: Enter the number CSRR assigns to the portion of the site that is being worked on in this investigation. It is usually on all Department correspondence and can also be obtained from the data miner case report. The format for the field always starts with three letters (for example - LSR for LSRP cases, PFR for publicly funded cases or RPC for traditional oversight cases) followed by six numbers. An example would be LSR200001. The activity number is not the Key Document Submittal ID, which starts with LSD. Leave this field blank if you do not know the Activity Number for the Submission.

Name of Site as known to NJDEP: Enter the name of the site that is provided in Department correspondence and data miner reports.

Street address of Site: Enter one line that includes the entire street address of the site.

Municipality of Site: Enter the municipality for the site.

County of Site: Enter the county for the site.

Submission Type Acronym: The acronym described in Section 1 of this document indicates what type of Deliverable is attached to the email. There are eight different Submission Types:

<u>Submission Type</u>	<u>Acronym</u>
• Area of Concern / Site Boundary	AOC
• Classification Exception Area	CEA
• Currently Known Extent of Contamination	CKE
• Deed Notice	DN
• Electronic Data Deliverable	EDD *
• Linear Construction	LC
• Site Coordinates	Coord
• Well Receptor Searches	WRS

Note: * not covered in this document (see SRP EDI manual)

Submission Description: Include a short 1-2 sentence description of the submission. Include enough description that a CSRR staff could link the submission with the correct report, form, or permit application.

Name of LSRP (or consultant) overseeing work: Include the full name of the LSRP (or consultant, if not in the LSRP program) who is responsible for the submittal.

LSRP's license number: Include the license number of the LSRP listed above. If the person is not an LSRP, then leave the line blank.

LSRP's Email Address: Include the email address for the LSRP (or consultant, if not in the LSRP program) who is responsible for the submittal.

Name of GIS author Company: Include the name of the company that created the GIS deliverable.

Mailing address: Include full mailing address (including address, city, state, and zip code) for the company who created the GIS deliverable.

Name of Professional performing GIS work: Include the name of the person who created the GIS deliverable.

Email for Professional performing GIS work: Include the email address of the person who created the GIS deliverable.

Phone Number for Professional performing GIS work: Include the phone number of the person who created the GIS deliverable.

APPENDIX B

Definitions

The following definitions support this guidance document.

Activity Number: The number used to define a remedial Case within the Department's Contaminated Site Remediation & Redevelopment program.

Administrative Requirements for the Remediation of Contaminated Sites (ARRCS Rules) - N.J.A.C. 7:26C: The administrative procedures and requirements for the remediation of a contaminated site.

Area of Concern (AOC): Defined in N.J.A.C. 7:26E-1.8 as any existing or former distinct location or environmental medium where any hazardous substance, hazardous waste, or pollutant is known or suspected to have been discharged, generated, manufactured, refined, transported, stored, handled, treated, or disposed, or where any hazardous substance, hazardous waste, or pollutant has or may have migrated.

Attribute: Nonspatial information that describes a feature associated with a GIS layer. For example, attributes of a municipality might include its name, population, and acres.

Case Inventory Document (CID): A concise summary of all AOCs and major case components that serve to form the basis for remedial decisions as defined in 7:26E-1.6 (a)3. The person responsible for conducting the remediation shall develop and submit the CID with each remedial phase report and Direct Oversight Documents.

Department of Environmental Protection's On-line Service (DEP On-line): The preparer can access the DEP On-line services via the myNewJersey Portal at <https://www.nj.gov>. The Service is used to submit Remedial Phase Document Submissions to the Department. An AOC / Site Boundary GIS Submission is included in any Remedial Phase Document Submission that contains a CID.

Esri: GIS software company that developed the Shapefile interchange format.

Feature: is a single entity in GIS that has both geometry and attribute data. It is a representation of a real-world object on a map usually shown as a point, connecting line or a polygon that are recorded digitally using X-Y coordinates.

File Type "File Format": The file extension or file type that identifies what computer program uses the file and how the information is encoded.

GIS Deliverable: The GIS compatible maps are required to be submitted and/or the information that will be used to create data in a GIS format. This can include a shapefile, CAD drawing file, spreadsheet, etc.

Linear Construction Project: Construction and development to create, maintain or alter a roadway, railroad or utility by a person conducting a linear construction project that:

1. Includes one or more contaminated properties and

2. Will generate more than 200 cubic yards of contaminated soil for fill or disposal during the duration of the linear construction project.

LSRP: The Licensed Site Remediation Professional (LSRP) program was established by New Jersey regulations through the Site Remediation Reform Act (SRRA), which established the affirmative obligation for responsible parties to remediate contaminated sites in a timely manner and created a category of remediation professionals known as Licensed Site Remediation Professionals.

Program Interest: A unique identifier used by the Department to identify a specific program's work as it relates to a specific site in New Jersey.

Schema: The structure described in a formal language supported by the database management system (DBMS). In a relational database, the schema defines the tables, the fields, relationships, views, indexes, packages, procedures, functions, queues, triggers, types, sequences, materialized views, synonyms, database links, directories, Java, XML schemas, and other elements. Schemas are generally stored in a data dictionary. Although a schema is defined in text database language, the term is often used to refer to a graphical depiction of the database structure.

Shapefile: A shapefile format is a simple vector data format that stores non-topological geometry and attribute information for each of the features in a data set. The shapefile features can be points, lines, or polygons. The format was developed as part of the Esri product suite, but shapefiles can be used and created by many other GIS software applications.

Site Name: The official name used by the Department for a site in New Jersey. The site name can be retrieved via a dataminer report.

Spatial Accuracy: All GIS deliverables must meet the standards established by the Department in the NJDEP Mapping and Digital Data Standards (current version was issued on February 7, 2021).

Submission: The delivery of the GIS compatible map to CSRR has been defined as a "*Submission.*"

Submission Type: The different GIS Deliverables required in the regulations are referred to as "Submission Type."

Submission Type Acronym: Each submission type has an acronym that has been assigned to it. For example, deed notice submissions use the acronym DN.

Technical Requirements for Site Remediation (Tech Rules): Department's procedures for investigating and cleaning up a site, as codified in [N.J.A.C. 7:26E](#)