New Jersey Department of Environmental Protection

Site Remediation Program

Preliminary Assessment Technical Guidance

January 2012

Version 1.0

TABLE OF CONTENTS

TABLE

APPENDICES

1.0 PURPOSE

The following section provides an overview of the purpose for technical guidance within the framework of Site Remediation in New Jersey as well as the specific purpose of Preliminary Assessment Guidance.

1.1 Purpose for Technical Guidance

This guidance is designed to help the person responsible for conducting remediation to comply with the New Jersey Department of Environmental Protection (Department) requirements established by the Technical Requirements for Site Remediation (Technical Rules), N.J.A.C. 7:26E. Because this guidance will be used by many different people that are involved in the remediation of a site, such as Licensed Site Remediation Professionals (LSRPs), Non-LSRP environmental consultants, and other environmental professionals, this document will use the generic term "Investigator" to refer to any person that uses this guidance to remediate a contaminated site on behalf of a remediating party, including the remediating party itself.

The procedures for a person to vary from the technical requirements in regulation are outlined in the Technical Rules at N.J.A.C. 7:26E-1.7. Variances from a technical requirement or departure from guidance must be documented and be adequately supported with data or other information. For more information about variances and best professional judgment go to the Department web site at:
http://www.nj.gov/dep/srp/srra/training/matrix/important_messages/variance_and_bpj.pdf.

This guidance supersedes previous Department guidance issued on this topic, pursuant to N.J.S.A. 26:10C-16, and was prepared with stakeholder input. The entire committee consists of:

John Doyon, New Jersey Department of Environmental Protection, Committee Co-Chair
Joshua Gradwohl, New Jersey Department of Environmental Protection, Committee Co-Chair
Kathleen F. Stetser, LSRP, Roux Associates Inc
Philip I Brilliant, LSRP, Brilliant Environmental Services, LLC
David Whelihan, URS Corporation
David S Bausmith, LSRP, AMEC E&I
Jeffrey C Dey, LSRP, RCC
Theodoros "Ted" Toskos, AMEC Environment and Infrastructure, Inc
Kris Geller, New Jersey Department of Environmental Protection
David Barskey, New Jersey Department of Environmental Protection
Steve MacGregor, New Jersey Department of Environmental Protection
Mark Gruzlovic, New Jersey Department of Environmental Protection
John Prendergast, New Jersey Department of Environmental Protection

1.2 Purpose for Preliminary Assessment Guidance

The purpose of this guidance is to provide the investigator with a list of resources and framework on how to use the resources to conduct a preliminary assessment that meets the diligent inquiry requirements of the Technical Requirements for Site Remediation (Technical Regulations) at N.J.A.C. 7:26E-3.1 and 3.2 to determine if there may be any potentially contaminated areas of concern that require further investigation. While the Technical Regulations set forth regulations to which the person responsible for conducting the remediation must comply, the guidance is intended to complement the regulations as a hands-on resource and by providing more detailed information on conducting a preliminary assessment that meets the intent of the regulations.

Although the person preparing a preliminary assessment report can determine the appropriate level of detail required and the format necessary to present the data obtained during the preliminary assessment data gathering activities, the guidance presented below may be helpful in

streamlining the report preparation and review process by creating a standard format that can be followed for most sites. The Investigator can use the Preliminary Assessment Data Gathering Checklist (**Appendix B**) to determine that all the appropriate preliminary assessment information has been gathered prior to submission of the preliminary assessment Report.

2.0 Preliminary Assessment Data Gathering

This section uses the Preliminary Assessment Data Gathering Checklist **(Appendix B)** as a basis and outline for data gathering guidance. The checklist is meant to serve as a tool to ensure that all the required data gathering/diligent inquiry had been completed for the preliminary assessment and is not required for submission to the Department. Throughout the preliminary assessment data gathering activities the emphasis should be to identify all current and historical potential areas of concern. It will be helpful to complete the checklist in Appendix B as you gather information to ensure all required resources are investigated.

The sections presented below details the guidance for both the data gathering and the report preparation components of the preliminary assessment. It may be helpful to prepare the preliminary assessment report and the Preliminary Assessment Report Form (http://www.state.nj.us/dep/srp/srra/forms/) as the data gathering tasks progress to avoid data gaps or incomplete report sections.

2.1 General Information

The Investigator should consult the following sources to obtain information for completing the Preliminary Assessment Report Form: tax records, site owner/operator, the Department online database, and historical Department documentation to accurately determine the facility name, address, lots, blocks, Department Program Interest (PI) number and U. S. Environmental Protection Agency (U.S. EPA) identification number, if applicable.

Note: It is important to identify any changes to the block and lot designations for the site especially if prior NJDEP approvals reference a different set of numbers that are currently assigned to the site.

2.2 Current and Former Owners/Operators

2.2.1 Data Gathering

The preliminary assessment data gathering activities should include diligent inquiry into the operational and ownership history at the site from 1932 or before the site was developed and naturally vegetated which ever is later. Standard, readily available sources of information include tax records, deeds, historical chain of title, historical Sanborn Maps, historical aerial photographs and business directories (such as McRae's Industrial Directory, New Jersey Industrial Directory etc). These sources and any other site specific sources of information may assist in this task as well as interviews of current and former site personnel, local and county governmental authorities, local or county historical societies and neighboring property owners.

2.2.2 Information for the Report

The preliminary assessment report should include a list of the persons interviewed to obtain information during the preliminary assessment data gathering activities. The relationship of the individual interviewed to the subject site should be stated.

All sources of information used to gather the historical information should be accurately summarized in the Preliminary Assessment Report. A brief description of the operations conducted for each owner/operator should also be included in the Preliminary Assessment Report.

2.3 Historical Site Operations

2.3.1 Data Gathering

The preliminary assessment data gathering should include an identification of all industrial, agricultural, or commercial site operations back to 1932 or before the site was developed and naturally vegetated which ever is later.

2.3.2 Information for the Report

The preliminary assessment report should include a clear and concise description of the past industrial, agricultural and commercial operation(s) conducted on site by each owner and operator back to the time the site was naturally vegetated.

2.4 Current Site Operations

2.4.1 Data Gathering

The preliminary assessment data gathering activities should include a detailed evaluation of the most recent operations at the subject site. This can be accomplished through the completion of a site inspection, interviews with facility personnel and a review of facility documentation such as floor plans, figures and as-built construction drawings.

2.4.2 Information for the Report

The preliminary assessment report should include a clear and concise description of the current industrial/commercial operation(s) conducted on site by each owner and operator.

2.5 Aerial Photograph Review

2.5.1 Data Gathering

The preliminary assessment data gathering activities should include a review of the aerial photographic history of the site. The interpretation should focus on the site under review. Optimal aerial photograph viewing is conducted through the use of stereo pairs and a stereoscope, which allows the investigator to obtain an understanding of three-dimensional shape and size of site features, including topography. Use of photocopies (or even photographic copies) of photographs should be avoided, as image resolution degrades and important features can be missed.

It is recommended that the NJDEP Tidelands collection of historical aerial photography be utilized for this purpose, as the imagery is available on contact-printed transparencies, providing the resolution and tone superior to those of paper prints.

The review should be conducted using current and historical color, black and white and infrared aerial photographs, (scale 1:18,000 or less) of the site and surrounding area, as available, at a frequency that provides the evaluator with a historical perspective of site activities. The photographic history must go back to 1932 or the earliest photograph available. See **Appendix A** for sources of aerial photographs.

Facilities may possess low altitude oblique air photographs of their premises. The investigator should inquire about the existence of such imagery, as they often times provide perspective and detail that are not available in vertical air photography.

2.5.2 Information for the Report

The preliminary assessment report should include a description of the aerial photographic history of the site. The report section shall focus on the site under review and if any concerns were identified on the site. The dates and scale of each aerial photograph should be stated in the preliminary assessment report.

The report should document the features identified during the aerial photograph review that might be of importance to the PA, including:

• Storage, accumulation and disturbed open areas,
• Excavations,
• Transportation-related features,
• Buildings, structures and appurtenances,
· Areas of stressed vegetation,
· Visual evidence of former disturbance like pavement patches, linear features in soil or pavement footprints of former structures,
• Color of features in false color infrared, and

• Potentially relevant features beyond site boundaries, such as waterfront filling or activities that may have an impact on the site.

References to development or disturbances on surrounding properties are unnecessary unless a neighboring site is suspected to be directly contributing to environmental factors at the site of concern.

The report is not required to include copies of the aerial photographs reviewed; however, if copies are available, it is useful to include them in the report. If copies or actual photos are included in the report please clearly identify the location of the site on each photo. It is recommended that a scale, north arrow and identification of pertinent areas of concern also be included.

2.6 Sanborn Map Review

2.6.1 Data Gathering

If Sanborn Maps are available for the site subject to this preliminary assessment, the investigator should conduct a comprehensive review of the Sanborn maps to determine historical site ownership, operations, and potential areas of concern. The Sanborn Maps often contain information on building construction and site features such as production wells, underground and aboveground storage tanks, production areas and storage areas which can assist in the identification of historical areas of concern.

2.6.2 Information for the Report

The preliminary assessment report should include a narrative discussion of the findings of the Sanborn Map review, noting in particular if any potential areas of concern were identified on each map reviewed. The dates of any maps reviewed should be provided. If copies of the Sanborn Maps are provided in the preliminary assessment report, the site should be clearly identified on each map. When possible, the key page of the maps, with an explanation of the various symbols should be included.

If no Sanborn Maps are available for the subject site, check the appropriate box on the Preliminary Assessment Data Gathering Checklist.

2.7 Hazardous Materials and Substances

2.7.1 Data Gathering

The Investigator should include in the preliminary assessment data gathering activities a diligent inquiry into current and historical hazardous materials and substances used, stored and generated at the subject site. The Investigator should review the following: all raw materials, finished products, formulations and hazardous substances, hazardous wastes, hazardous constituents and pollutants, including intermediates and by-products that are present or were historically present on the site. Sanborn maps may be one useful source of information for this task.

If farming occurred on the site, the Investigator should include pesticides on the list of hazardous materials and substances if it appears that mixing areas were located on the target site. **Appendix A** contains technical guidance on pesticide issues.

It may be helpful to create two lists; one list of hazardous materials verified to have been used on site and a second list of hazardous materials suspected of being used on site based on past commercial/industrial operations known to have been conducted on site.

2.7.2 Information for the Report

The preliminary assessment report should provide a listing (in narrative and/or table format) of all raw materials, finished products, formulations and hazardous substances, hazardous wastes, hazardous constituents and pollutants, including intermediates and by-products that are present or were historically present on the site.

2.8 Wastewater Discharge History

2.8.1 Data Gathering

As part of the preliminary assessment data gathering activities, the Investigator should conduct a diligent inquiry into all current and historical wastewater discharges of sanitary and industrial waste along with sanitary and industrial sludge. The Investigator should identify and evaluate present and past production processes. The Investigator should indicate the timeframes (dates) of these production processes and their respective wastewater use; the ultimate and potential discharge and disposal points; how and where materials are or were received on site; and wastewater discharges from on-site disposal systems, such as septic systems, lagoons or drywells.

2.8.2 Information for the Report

The preliminary assessment report should provide a summary of all current and historical wastewater discharges of Sanitary and Industrial Waste along with sanitary and industrial sludge. The report should include a description of all present and past production processes, including the dates these processes were active, and their respective water use including ultimate and potential discharge and disposal points and how and where materials are or were received on-site.

The following table may be a useful format to present the general discharge information. A narrative may also be included to provide additional detail, if warranted.

Example:

Table 2-1. Format for general discharge information

Discharge Period		**Discharge Type**	**Discharge Location**
From	**To**		
1955	1960	Sanitary and Industrial	On-Site Septic
1960	Present	Sanitary and Industrial	Public Treatment Works

2.9 Process Waste Streams

2.9.1 Data Gathering

As part of the preliminary assessment data gathering activities, the Investigator should conduct a diligent inquiry into all historical and current process waste streams and disposal points including wastewater, rinse water and sludge from industrial process activities. Examples of wastewater include: wastewater from electroplating rinse tanks; rinse water from parts de-burring operations; off-spec dyes and casting sand; or other operations that generated large quantities of solid or liquid waste pumped or drained from manufacturing areas in pipes or trenches.

2.9.2 Information for the Report

The preliminary assessment report should provide a narrative describing the disposal processes for all historical and current process waste streams including disposal points. Tables, Figures and other supporting documentation should be presented, as needed, to fully describe the historical waste streams at the subject site.

2.10 Radioactive Materials

2.10.1 Data Gathering

As part of the preliminary assessment data gathering activities, the Investigator should provide any information about past production processes that have potential for radioactive materials or waste used or generated in the manufacturing process. See Appendix A section 1.9 for more details for this type of environmental concern.

Pursuant to N.J.A.C.7:26C-2.3(a)3i(4**)** if the site is suspected or known to be contaminated with anthropogenic radionuclide contamination of any media Department oversight is required. Department oversight is not required for any other areas of concern that may exist at the site provided there is no overlapping contamination associated with anthropogenic radionuclide contamination.

If radioactive materials are known or confirmed to be present, contact the Department's Bureau of Environmental Radiation for further guidance at:

New Jersey Department of Environmental Protection
Radiation Protection & Release Prevention Programs
25 Arctic Parkway
PO 420 (Mail Code 25-01)
Trenton, New Jersey 08625-0420

(609) 984-5636 (voice)
(609) 633-2210 (FAX)
rpp@dep.state.nj.us

2.10.2 Information for the Report

The preliminary assessment report should document the location and source of any radioactive materials used stored or disposed of on site. See appendix A.1.9 for greater detail on this environmental issue.

Note: All reports which contain a component that includes anthropogenic radionuclide contamination are to be sent to the Bureau of Case Assignment and Initial Notice not directly to the Radiation Protection & Release Prevention Program.

If no radioactive materials were identified as used stored or disposed on site, check the appropriate box on the Preliminary Assessment Data Gathering Checklist.

2.11 Discharge History

2.11.1 Data Gathering

As part of the preliminary assessment data gathering activities, the Investigator should conduct a diligent inquiry into the discharge history of hazardous substances and wastes for both current and former operations at the subject site.

2.11.2 Information for the Report

The following information should be presented in the preliminary assessment report:

- Known Discharges;
- Department Notification of Discharge (date and spill/case number);
- Status of discharge (remediation conducted/completed);

- Status of discharge closure (reports submitted, NFA/RAO issued); and
- Future activities planned to mitigate discharge if no NFA/RAO has been issued.

If there are no known discharges at the subject site, check the appropriate box on the Preliminary Assessment Data Gathering Checklist.

2.12 Environmental Permits

2.12.1 Data Gathering

The Investigator should conduct diligent inquiry into all federal, state and local environmental permits at the subject site. Include permits for all previous and current owners or operators, applied for, received or both including, but not limited to the following:

- New Jersey Air Pollution Control Permits;
- Underground Storage Tank Permits;
- New Jersey Pollutant Discharge Elimination System (NJPDES) Permits;
- New Jersey Solid Waste Permits;
- Resource Conservation and Recovery Act (RCRA) permit; and
- Fire Department flammable or hazardous storage permits.

2.12.2 Information for the Report

The preliminary assessment report should include a summary of all environmental permits at the subject site, including the following permit information, as applicable:

(1) Name and address of the permitting agency;
(2) The reason for the permit;
(3) The permit identification number;
(4) The application date;
(5) The date of approval, denial or status of the application;
(6) The name and current address of the permittees;
(7) The reason for the denial, revocation or suspension if applicable; and
(8) The permit expiration date.

If no permits were received or applied for, check the appropriate space on the Preliminary Assessment Data Gathering Checklist.

The following format may be useful in presenting the required environmental permit information:

A. New Jersey Air Pollution Control

Permit Number	**Expiration Date**	***Type of Permitted Unit***

B. **Underground Storage Tanks**

Registration Number _____

Size of Tank (Gallons)	***Tank Contents***	***Current Status***

C. New Jersey Pollutant Discharge Elimination System (NJPDES) Permit

Permit Number	**Discharge Type**	**Expiration Date**

D. New Jersey Solid Waste Permits

Permit Number	**Issuance Date**	**Expiration Date**

E. Resource Conservation and Recovery Act (RCRA) permit #_____

F. EPA Identification Number _____

G. Other Permits (format as warranted based on site-specific information)

2.13 Summary of Enforcement Actions

2.13.1 Data Gathering

The Investigator should conduct diligent inquiry into historical and current enforcement actions at the subject site, including but not limited to, Notice of Violations, court orders, and official notices or directives for violations of local, state or federal environmental laws or regulations.

2.13.2 Information for the Report

The preliminary assessment report should include a summary of historical and current enforcement actions at the subject site and include the following information:

- Name and address of agency that initiated the enforcement action;
- Date of the enforcement action;
- Section of statute, rule or permit allegedly violated;
- Type of enforcement;
- Description of the violation; and
- How the violation was resolved.

If no enforcement actions were identified, check the appropriate box on the Preliminary Assessment Data Gathering Checklist.

2.14 Fill Material

2.14.1 Data Gathering

The preliminary assessment data gathering activities should include diligent inquiry into the presence or potential presence of fill material used at the site to replace soil or raise the topographic elevation of the site, including the dates of emplacement, type/contents of fill material, and any analytical data regarding the fill material.

If fill material is present at the site, a determination should also be made regarding the potential or confirmed presence of clean fill, historic fill or alternative fill used at the site. The Department

Geographic Information System database provides useful information on the regional occurrence of historic fill. Historic topographic and riparian maps are another useful source to identify filled areas. The Department Geographic Information System database may be accessed at http://www.nj.gov/dep/gis/ . The Department Geographic Information System database should not be used as the only line of evidence to support the presence of historic fill and should not be used to confirm the absence of historic fill at the subject site. The Department's "Historic Fill and Diffuse Anthropogenic Pollutants Technical Guidance" document should be consulted for specific investigation requirements if fill is determined to exist on site.

2.14.2 Information for the Report

The preliminary assessment report should provide a narrative description of all areas where fill materials are present at the site, including the dates of emplacement.

Please refer to Appendix B for more detail on this potential area of concern.

If fill material is not present at the site, check the appropriate box on the Preliminary Assessment Data Gathering Checklist.

2.15 Waste Disposal Areas, Dumps and Landfills

2.15.1 Data Gathering

The Investigator should conduct a diligent inquiry into the presence or potential presence of on-site permitted or non-permitted landfills, waste disposal areas and/or dump areas at the subject site. The inquiry should include an evaluation of all available waste disposal records for any on-site landfill that describe the nature, quantity, location and date of the placement in any on-site landfill. Conduct an evaluation of records for all wastes, drums, tanks, pressurized gas cylinders, and all hazardous wastes potentially dumped or buried on the site.

2.15.2 Information for the Report

Identify the approximate location on site maps if evidence indicates that a dump, disposal area or landfill exists on site. Provide information in the PA Report on the types of materials disposed in the area, if known.

If onsite landfills dumps or disposal areas are not identified on site, check the appropriate box on the Preliminary Assessment Data Gathering Checklist.

2.16 Previously Conducted or Ongoing Remediation

2.16.1 Data Gathering

The preliminary assessment data gathering activities should include the identification, review and summary of any investigation and remediation activities previously conducted or currently underway at the site that have not received NFA/RAO. Include dates of discharges, remedial actions taken, and all existing sample results concerning contaminants which remain at the site.

2.16.2 Information for the Report

The preliminary assessment report should include a narrative discussion remediation activities that have been conducted at the site and of any known changes in site conditions and any new information developed since completion of previous sampling or remediation.

If remediation has not previously been conducted or is ongoing at the site, check the appropriate box on the Preliminary Assessment Data Gathering Checklist.

2.17 Protectiveness Evaluation of Approved Remedies

2.17.1. Data Gathering

The preliminary assessment data gathering activities must include the identification and evaluation of all remedies previously implemented at the site. The evaluation must include a determination of whether the remedy remains protective of public health, safety and the environment. This task should include, but is not limited to, a review of past biennial certifications and monitoring reports. Specific attention should be paid to any known changes in

site conditions, site use or new information developed since completion of previous remediation, and how those changes relate to the protectiveness of the implemented remedy.

2.17.2 Information for the Report

The following should be presented in the preliminary assessment report, if applicable:

- Was an engineering control used to address contamination left on site?
- If yes, is this engineering control being properly maintained?
- Did the remedy address all of the residual soil contamination?
- Is the remedy working as designed?
- Have required biennial certifications been submitted?
- Is a remedial action permit in place?

If no remedies previously approved by the Department or an LSRP in a remedial action work plan or equivalent document were identified for the site, check the appropriate box on the Preliminary Assessment Data Gathering Checklist

2.18 Order of Magnitude

2.18.1 Data Gathering

The preliminary assessment data gathering activities must also include an evaluation of each area of concern identified at the site for which a final remediation document was filed or issued, to compare the contaminant concentrations remaining in the area of concern with the applicable remediation standards at the time of the comparison. The data review shall include an evaluation of whether contaminant concentrations remaining at the site or area of concern are;

- below the standards applicable at the time of the comparison;
- above the standards applicable at the time of the comparison by less than an order of magnitude or
- above the standards applicable at the time of the comparison by more than an order of magnitude.

2.18.2 Information for the Report

The preliminary assessment report must include summary tables listing the standards at the time of the comparison to the contaminant concentrations remaining at the site by area of concern.
The conclusions for the evaluation must identify if:
i. The area of concern contains contaminants above the numerical remediation standard applicable at the time of comparison; however, no further remediation is required because:

(1) The contaminant concentrations remaining in the area of concern or the site are less than an order of magnitude greater than the numerical remediation standard applicable at the time of comparison;

(2) The area of concern was remediated using engineering and/or institutional controls and these controls are still protective of public health, safety and the environment; or

(3) The area of concern was remediated to a alternative remediation standard and all of the factors and assumptions which are the basis for deriving the alternative remediation standard remain valid for the site;

ii. The area of concern contains contaminants above the numerical remediation standards applicable at the time of comparison and further remediation may be required because:

(1) The contaminant concentrations remaining in the area of concern or the site are more than an order of magnitude greater than the numerical remediation standard applicable at the time of comparison;

(2) The area of concern was remediated using engineering and/or institutional controls and these controls are no longer protective of public health, safety and the environment; or

(3) The area of concern or the site were remediated to an approved alternative remediation standard and some or all of the factors and assumptions which were the basis for deriving the alternative remediation standard are no longer valid;

iii. The area of concern or site does not contain contaminants above the numerical remediation standard applicable at the time of comparison and no further remediation is required.

If no areas of concern have been identified at the site for which a final remediation document was filed or issued, check the appropriate box on the Preliminary Assessment Data Gathering Checklist.

2.19 Potential Areas of Concern (AOC)

2.19.1 Data Gathering

Throughout the preliminary assessment data gathering activities the emphasis should be to identify all current and historical potential areas of concern. Base the identification of the areas of concern on a review of Sanborn Maps, aerial photographs, a site visit and all other research conducted regarding the current and former history of the subject site.

The narrative discussion for each area of concern must be separate and distinct from the discussion for other areas of concern.

Refer to N.J.A.C. 7:26E-1.8 for the definition of area of concern. The areas to be identified and evaluated may include, but are not limited to:

A) Bulk Storage Tanks and Appurtenances

- Aboveground storage tanks and associated piping
- Underground storage tanks and associated piping
- Silos
- Rail cars
- Loading and unloading areas
- Piping, above ground and below ground pumping stations, sumps and pits.

B) Storage and Staging Areas

- Storage pads including drum and/or waste storage
- Surface impoundments and lagoons
- Dumpsters
- Loading docks

C) Drainage Systems and Areas

- Floor drains, trenches and piping and sumps
- Process area sinks and piping which receive process waste
- Roof leaders when process operations vent to the roof
- Drainage swales and culverts
- Storm sewer collection systems
- Storm water detention ponds and fire ponds
- Surface water bodies
- Septic systems leach-fields or seepage pits
- Drywells and sumps

D) Discharge and Disposal Areas

- Areas of discharge per N.J.A.C. 7:1E
- Waste piles as defined by N.J.A.C 7:26
- Waste water collection systems including septic systems, seepage pits, and dry wells.
- Landfills or land-farms
- Spray-fields
- Historic fill or any other fill material
- Open Pipe discharges
- Burn pits
- Incinerators

E) Building Interior Areas with a Potential for Discharge to the Environment

- Loading or transfer areas
- Waste treatment areas

- Boiler rooms
- Air vents and ducts
- Chemical storage cabinets or closets.
- Hazardous material storage or handling areas

F) Other Potential Areas of Concern

- Electrical transformers and capacitors
- Hazardous material storage or handling areas
- Waste treatment areas
- Discolored areas
- Spill areas
- Open areas away from production areas
- Areas of stressed vegetation
- Underground piping including industrial process sewers
- Compressor vent discharges
- Non-contact cooling water discharges
- Areas which receive flood or storm water from potentially contaminated areas
- Active or Inactive production wells
- Rail lines, spurs or sidings
- Other general process and production areas that use hazardous materials

G) Any other site-specific area of concern

It is understood that the above-listed potential areas of concern may overlap and may not be unique to the heading under which they are listed.

2.19.2 Information for the Report

A narrative should be provided in the preliminary assessment report that includes the following information, as applicable, for each potential area of concern identified during the preliminary assessment data gathering activities:

- type, age, and dimensions of each container/area
- chemical content
- volume
- construction materials
- location
- integrity (i.e., tank test reports, description of drum storage pad)
- inventory control records for tanks only, unless a Department-approved leak detection system, pursuant to N.J.A.C. 7:1E or 7:14B, has always been in place and there is no discharge history.

One of the following findings should be made and presented in the preliminary assessment report for each potential area of concern identified at the subject site:

- Additional remediation is necessary because:
    - The area is potentially contaminated, or
    - There is an order of magnitude change in an applicable remediation standard and the prior remediation is no longer protective of the public health and safety and the environment because it is not in compliance with the standard applicable at the time of the comparison; or

- the area of concern is not suspected to contain contaminants above the applicable remediation standards and no further investigation or remediation is required.

If sampling is not proposed for any identified area of environmental concern explain in the preliminary assessment report why contaminants above the applicable remediation standards are not potentially present.

Each area of concern must be assigned a unique alpha or numeric identification that will remain consistent throughout each phase of the remediation. Each area of concern must be clearly identified on a Site Plan. Analytical data tables and other supporting documentation should be

provided, as needed, to fully present the information obtained during the preliminary assessment data gathering activities and to support any recommendation for no further investigation.

If no potential Areas of Concern were identified at the subject site that require SI sampling, check the appropriate box on the Preliminary Assessment Data Gathering Checklist.

2.20 Plans, Figures and Drawings

2.20.1 Data Gathering

The Investigator should evaluate historical documentation, site maps, figures, and photographs to determine the location of former and current structures and potential areas of concern.

.

2.19.2 Information for the Report

Historical maps and figures should be presented as part of the preliminary assessment report to depict the location of the site, specific locations of the areas of concern and current and historical site operations including sub-grade features.

2.21 Preliminary Assessment Site Inspection

A key component of the preliminary assessment data gathering is the completion of at least one site inspection to verify observable and current site conditions. The preliminary assessment site inspection should be conducted by either the Investigator or their delegate to confirm the findings of the data gathering/due diligence activities and to inspect the site for potential areas of concern. Based on site complexity, several site inspections may be required to adequately complete the preliminary assessment due diligence data gathering activities. A site inspection report may be included as an Appendix to the preliminary assessment report.

During the site inspection(s) the investigator or delegate should inspect each identified potential area of concern to evaluate for visible signs of a discharge or the potential for a discharge to have historically occurred.

Note: The Site Remediation Reform Act (Section 16f) says the following regarding the code of conduct of a LSRP and site visits.

> f. A licensed site remediation professional may complete any phase of remediation based on remediation work performed under the supervision of another licensed site remediation professional, provided that the licensed site remediation professional: (1) reviews all available documentation on which he relies; (2) conducts a site visit to observe current conditions and to verify the status of as much of the work as is reasonably observable; and (3) concludes, in the exercise of independent professional judgment, that there is sufficient information upon which to complete any additional phase of remediation and prepare workplans and reports related thereto.

3.0 THE PRELIMINARY ASSESSMENT REPORT

The following section includes a description of general preliminary assessment report requirements, as stipulated in **N.J.A.C. 7:26E-3.2** as well as guidance and recommendations for the completion of the preliminary assessment report.

3.1 Preliminary Assessment Report Requirements

In accordance with N.J.A.C. 7:26E-3.2, the person responsible for conducting the remediation must prepare a preliminary assessment report that presents all of the information identified, evaluated or collected during the preliminary assessment data gathering activities. The preliminary assessment report must include the following:

- Scaled site plans detailing lot and block numbers, property and leasehold boundaries, current and historical structures, areas where fill has been brought onsite, vegetated, paved and unpaved areas, all areas of concern and active and inactive wells;

- Scaled historical site plans and facility as-built construction drawings, if available;

- A summary of the data and information evaluated and all phases of work previously conducted for each area of concern identified;

- A recommendation for each area of concern identified at the site, that either:

    - the area of concern is potentially contaminated and additional investigation or remediation is required; or

    - the area of concern is not suspected to contain contaminants above the applicable remediation standards and no further investigation or remediation is required and the rationale behind that determination.

- an order of magnitude evaluation, an evaluation of the protectiveness of existing engineering and/or institutional controls, and an evaluation of any alternative remediation standards utilized for each area of concern identified at the site, for which a final remediation document was filed or issued including a recommendation that either no further remediation is required or future remediation is necessary.

The preliminary assessment report must include a completed and certified Preliminary Assessment/Site Investigation Report Form, found at **http://www.state.nj.us/dep/srp/srra/forms**;

3.2 Preliminary Assessment Report General Guidance

Although the person completing the preliminary assessment report can determine the appropriate level of detail required and the format necessary to present the data obtained during the preliminary assessment data gathering activities, the two general suggestion provided below may be helpful in streamlining the report preparation and review process by creating a standard format that can be followed for most sites.

- The Preliminary Assessment Data Gathering Checklist **(Appendix B)** is a useful tool to determine that all the appropriate information has been gathered prior to preparation of the preliminary assessment report. It is strongly recommended that all Preliminary Assessment Reports follow a format similar to the Preliminary Assessment Data Gathering Checklist to ensure that all required information is included.

- Attachments to a preliminary report should be provided when appropriate. If an attachment includes an entire report done by others, specifically reference the section and or page in the report the information can be found. For example if the historical report contains a detailed site history the reference should be similar to "*For the site history please see section 1 pages 4-5 of the attached report dated January 14, 2005 located in Appendix 5 of this document."* Do not generically write 'See the attached report in Appendix 5."

NOTE: Inclusion of a complete radius search typically provided with commercial database inquiries is not required for a Preliminary Assessment Report. It is recommended that only information pertinent to identification of potential on-site areas of concern or discharges potentially emanating from the site be included from a radius search.

Appendix A

Additional Guidance and References

Additional Guidance and References

This Appendix is intended to provide the user with insight to common errors and omissions the Department historically encountered with preliminary assessment data gathering and reports. It provides more detailed guidance regarding specific requirements to help avoid the common errors of the past. It is intended to make this Appendix a "working draft" evolving as the LSRP program develops.

A.1 Guidance

A.1.1 Area of Concern:

Refer to N.J.A.C. 7:26E-1.8 for the definition of area of concern. Investigators must use their best professional judgment to determine what comprises an area of concern and the level of investigation required. The focus of the preliminary assessment should be targeted towards making a fact-based decision that the area of concern does or does not warrant further investigation. For each area where hazardous materials were treated, stored, used or disposed on site, the inspector should provide a narrative that describes:

- The type of area; (e.g., drum storage area or a chemical storage cabinet);
- The age and dates of use of the area; (e.g., has the area been in use for 30 years or 3 years);
- The dimensions of each container/area;
- The chemical content of the material stored in the area (current and historical);
- The volume of material stored in the area,
- The construction materials of the area; (e.g., steel drums stored in an area with no containment, concrete floors, degraded asphalt);
- The Location of the area; (e.g., inside in the basement or outside the northeast corner of the building);
- The integrity of the area (e.g., tank test reports, description of drum storage pad, description of the floor); and
- Inventory control records for underground storage tanks, unless a Department-approved

leak detection system, pursuant to N.J.A.C. 7:1E or 7:14B has always been in place and there is no discharge history.

If sampling is not proposed for any identified area of concern, the inspector should present a factual explanation why the area of concern does not pose as a potential source of impact to soil, ground water, surface water or sediments above the applicable remediation standards. For example, floor drains that only receive waste water from a process that does not involve hazardous materials and have been in use for less than 10 years potentially poses less of a concern than a floor drain that has received spent acid solution for decades. The drains and pipes that receive the acid solution would require investigation (video inspection and/or sampling, as warranted) beyond the scope of a preliminary assessment.

Identify and confirm use of pipes protruding from exterior walls. Inspect interior floors, pits and drains for signs of an integrity breach. Pits and trenches should be free of liquids and sediments before making any assessment regarding the integrity (this can be done as part of the Site Investigation (SI) if access to the features is not available during the PA). Ask site owners and operators about areas that show signs of repair to determine if an environmental investigation is required.

A.1.2 Diligent Inquiry: Preliminary Assessment as defined in the Site Remediation Reform Act, N.J.SA.58:10C-1 et seq. means:

> "Preliminary assessment" means the first phase in the process of identifying areas of concern and determining whether contaminants are or were present at a site or have migrated or are migrating from a site, and shall include the initial search for and evaluation of, existing site specific operational and environmental information, both current and historic, to determine if further investigation concerning the documented, alleged, suspected or latent discharge of any contaminant is required. The evaluation of historic information shall be conducted from 1932 to the present, except that the department may require the search for and evaluation of additional information relating to ownership and use of the site prior to 1932 if such information is available through diligent inquiry of the public records.

The Technical Requirements for Site remediation require the person responsible for conducting the remediation to conduct a preliminary assessment based on the following:

1. A diligent search from 1932 or before the site was developed and naturally vegetated to the present, including an investigation of all documents that are reasonably likely to contain environmental information related to the site, which documents are in the person's possession, custody or control, or in the possession, custody or control of any other person from whom the person conducting the search has a legal right to obtain such documents;

2. Inquiries of current and former employees and agent whose duties include or included any responsibility for hazardous substances, hazardous wastes, or pollutants, and any other current and former employees or agents who may have knowledge or documents relevant to the inquiry:

3. An evaluation of site specific operational and environmental information, both current and historical collected pursuant to 1and 2 above; and

4. A site inspection to verify the above findings.

Thus a preliminary assessment must include the identification and evaluation of all resources available for a given site to form any decision to further investigate a site or area of concern or to conclude no further investigation is necessary. Relying on one resource for historical information regarding a site may be sufficient in some instances when a site was only recently developed but when a site has a long history multiple sources of information should be utilized.

In addition, the preliminary assessment must include an evaluation and description of site operations and areas of concern from 1932 or before the site was developed and naturally vegetated which ever is later. Many sites have undergone past environmental assessments under Department oversight pursuant to ISRA, the Underground Storage Tank laws, a Memorandum of Agreement or pursuant to a Spill Act Administrative Consent Order. When conducting a Preliminary Assessment, any documents generated as part of former Site Remediation cases must be reviewed for completeness and to determine if the final remedy remains protective of human health and the environment. The investigator should not simply rely on an old NFA or RAO and move forward on an assumption all was done correctly or substantially in accordance with the standards of investigation in place during the current assessment. For instance, can the

investigator rely on the results of only 3 historical samples if the current regulations or guidance requires or recommends 6 samples? If the sample results were all non-detect but the current practical quantitation limits were not met, would the samples be considered protective? The investigator will need to rely on professional judgment to determine if additional evaluation/sampling is warranted for a historical area of concern. However, if the same 3 samples from a TCE tank were analyzed for TPH it should be concluded that additional sampling for the proper parameters would be warranted as chlorinated volatile organic compounds were not previously analyzed. Aerial photographs or Sanborn Maps which may not have been reviewed during the earlier investigation may identify entire areas that were historically missed. If the investigator concludes items were missed (either entire areas of concern or an area of concern was not adequately evaluated), the investigator should propose additional actions to further evaluate the area of concern.

If the investigator concludes, following a comprehensive records review, the information used to support a prior final remediation document is in substantial compliance with current standards of investigation and remediation, no further evaluation may be warranted for the area of concern.

Interviews are another key item frequently overlooked. Long time residents living near a site, employees of former operators, town/county officials and town/county historical societies can be sources of historical site information.

Unlike the ASTM Phase I that, by law, is NOT an acceptable replacement for a preliminary assessment in New Jersey, there is no “Reasonably Ascertainable” provision of the Technical Regulations that allow the investigator to abandon a search for information based solely on time constraints. All efforts to contact a source of information or obtain documents/records should be fully pursued before the inspector completes the data gathering portion of the preliminary assessment.

Site history is frequently an item where preliminary assessments are incomplete. Common statements encountered have included: "Unknown", or "We are only a tenant on the site and have

no knowledge of prior site history". Neither of these answers satisfies the requirement for a diligent inquiry.

To avoid having a preliminary assessment found incomplete due to insufficient information, the site history must be researched. The following are ways of obtaining information regarding site history: title searches; contacting the local and county health officials and municipal agencies (for example, local fire and police departments, and local planning, zoning, adjustment boards) requesting any information these public agencies may have on the specific location; and interviewing long time neighbors of the site. Pursuant to the Industrial Site Recovery Act (ISRA), both the site owner and the site operator are liable to ensure the preliminary assessment evaluates and describes site operations and areas of concern back to 1932 or before the site was developed and naturally vegetated so tenants should always request information from the property owner. The applicant should always document any attempts to locate this information to support a claim that a diligent inquiry has been conducted. The preliminary assessment data gathering should not be considered complete until all parties contacted for information have responded to the request for information and the information obtained has been reviewed.

A.1.3 Fill Material and Historic Fill: Refer to N.J.A.C. 7:26E for the definitions of these types of areas of concern. Use related waste, debris or by products dumped or buried on site by a current or past owner or operator is not historic fill regardless of how old the waste may be. Sites containing fill material associated with past or recent on-site operations would be evaluated and managed differently than sites constructed on “historic fill” from an off- site source that was placed there before the site was developed for commercial or industrial use. The inspector must ensure any conclusions regarding known or suspected fill material are substantiated in accordance with the Historic Fill Technical Guidance. It should be understood that many areas of historic fill mapped by the Department in its Geographical Information System are based on interpretation of historical topographic maps and a review of aerial photography. The mapped areas may be inaccurate and the presence of “historic fill” should always be confirmed in accordance with the Historic Fill Technical Guidance.

A.1.4 Underground Storage Tank: The definition of underground storage tank makes NO reference to a size or the need to meet the regulatory requirements of the Underground Storage Tank rules at N.J.A.C. 7:14B. A heating oil tank, regardless of its size, is an area of concern that requires investigation if the goal and intent of conducting a preliminary assessment is to eventually issue an entire site Response Action Outcome or an area specific Response Action Outcome for the heating oil tank. Any underground storage tank that contained or contains a hazardous substance is an area of concern that requires investigation. A permit sign-off by a local inspector does not replace the requirement to sample an UST area for potential contaminants. Tanks of unknown contents must have a finger print analysis of the contents conducted to target for the correct parameters for a required site investigation. If a finger print of the contents is not conducted then a full Target Compound List analysis of all soil samples should be conducted.

A.1.5 Electrical Transformers: Another commonly missed area of concern is electrical transformers. Consider all on site transformers as potential areas of concern and conduct SI sampling, if warranted. If a current transformer does not contain oil, the investigator should determine if oil-containing transformers were ever present at the site. It should be understood that an oil-containing transformer labeled "non-PCB transformer" means the transformer oil does not have PCBs at concentrations above 50 parts per million. It does not mean there are no PCBs and does not eliminate the need to conduct further inquiry and possibly sampling.

Regardless of whether the local electrical provider has an agreement that the electric company will remediate any discharge from a transformer on the site, until the discharge is remediated a full-site RAO cannot be issued.

Regarding ISRA multi-tenant leasehold properties and transformers as areas of concern, the following guidance should be considered. If the transformer specifically services the leasehold it is an area of concern and requires assessment for discharges. If the transformer services multiple leasehold spaces the investigation of the transformer is not required, but the transformer should be referenced in an exclusion statement in any final remediation document issued for the leasehold. Report observed spills to Department's Hot Line at 1-877-927-6337 and the property

owner will be required to address the discharge separately from the ISRA case triggered by the tenant.

For single tenant leased properties or owned properties, assessment of transformers is required unless the transformers that service the site are on an easement and the same transformers also service other properties not under the control of the site owner. In this case, the transformers should be referenced in an exclusion statement in any final remediation document issued for the site.

A.1.6 Rail Road Lines/Spurs/Sidings

A.1.6.1 Rail Line, Mainline or **Main line**
The principal artery of a railway system.

A.1.6.2 Rail Spur:
A stretch of rail that branches off the main line. Different from a siding or stub, spurs can be miles in length, and usually have only one destination at the end.

A.1.6.3 Rail Siding:
A section of track off the main line often used for storing rolling stock or freight. A siding is also used as a form of rail access for warehouses and other businesses, where the siding will often meet up with loading docks at rail car height in the building. The term may also refer to a passing track which runs parallel to a railway line typically used to allow one train to pass another.

A.1.6.4 Rail Lines, Spurs and Sidings: Loading and unloading areas aside, it is generally understood that rail lines most likely will be contaminated, at a minimum, with polynuclear aromatic hydrocarbons (PAHs) and metals due to the nature of rail operations. Ties historically were treated with creosote and Target Analyte List Metals including arsenic. Hydraulic drippings from train breaking systems or onboard transformers may contain PCBs, and PAHs. The fill material used as ballast under the rail

lines may also contain contaminants. Active or inactive rail lines, spurs and sidings that will not remain in service or historical rail lines that are no longer present at the site should be identified as areas of concern and investigated in accordance with the Site Investigation Guidance if the preliminary assessment data gathering identifies these types of operations as existing or formerly existing on the target site.

A.1.7 ISRA Industrial Establishments

The definition of "Industrial Establishment" as defined pursuant to the Industrial Site Recovery Act (ISRA) rules at N.J.A.C. 7:26B needs to be understood as is relates to the preliminary assessment requirements of the Technical Regulations. When a property consists of one building and a single tenant leases the entire building the preliminary assessment requirements are no different than a site where the site owner and operator are the same. The preliminary assessment must evaluate and describe site operations and areas of concern back to 1932 or before the site was developed and naturally vegetated for the entire site.

The leasehold provision of ISRA only applies to multi-tenant properties where a site is leased to many different tenants. When an ISRA trigger occurs that causes the requirement for a preliminary assessment to be conducted in a multi-tenant situation, the preliminary assessment can be limited to the tenant's space only and any areas of concern that service the tenant's leasehold space. For example, if a tenant has a drum storage pad that for fire safety reasons is located off the paved parking area 50 feet from the building, that drum storage pad and the route taken by the tenant to transfer smaller quantities of the flammable materials into the building is an area of concern for that leasehold space. The preliminary assessment is still required to fully evaluate the history of the leased space back to 1932 or before the site was developed and naturally vegetated. Areas of concern off of the leasehold do not require investigation. The investigator must understand in that situation the resulting RAO is leasehold specific, not for the entire site. Note that a site plan of the ENTIRE site (all leaseholds within the tax parcel) should be provided in the preliminary assessment with the leasehold clearly identified.

A.1.8 Pesticides

When conducting the preliminary assessment, past agricultural use should be considered. Pesticide mixing areas identified as being located historically on site should be targeted. The mixing areas generally will contain higher concentrations of pesticides and spilled materials are a discharge that requires investigation and remediation. The report: *Findings and Recommendations for the Remediation of Historic Pesticide Contamination* on the Department's web site at **http://www.state.nj.us/dep/special/hpctf/** should be consulted for more information on this topic if agricultural use is identified as a concern.

A.1.9 Radioactive Materials

The U.S. EPA web site http://www.epa.gov/radiation/tenorm/ provides information regarding the most common types of operations that may generate radioactive material from a process not normally thought to be associated with this type of concern.

Technologically Enhanced Naturally-Occurring Radioactive Material (TENORM) is produced when radionuclides that occur naturally in ores, soils, water, or other natural materials are concentrated or exposed to the environment by activities, such as uranium mining or sewage treatment.

Radioactive materials can be classified under two broad headings: man-made and naturally occurring radioactive materials (NORM).

Man-made radionuclides are produced by splitting atoms in nuclear reactors or by bombarding atoms with subatomic particles in accelerators, nuclear reactors, and other devices. Examples of man-made radionuclides include cobalt-60, strontium-90, and cesium-137. Radionuclides in Naturally-Occurring Radioactive Material (NORM) include primordial radionuclides that are naturally present in the rocks and minerals of the earth's crust and cosmogenic radionuclides produced by interactions of cosmic nucleons with target atoms in the atmosphere and in the earth. Examples of cosmogenic radionuclides include carbon-14 and tritium (hydrogen-3). Materials containing cosmogenic radionuclides also fall under the definition of NORM, but

natural concentrations of nuclides generated by cosmic nucleons are small and present minimal risks.

TENORM wastes are the radioactive residues from the extraction, treatment and purification of minerals, petroleum products, or other substances obtained from parent materials that may contain elevated concentrations of primordial radionuclides. They also include any radioactive material made more accessible by the actions of man. Each year, hundreds of millions of metric tons of TENORM waste are generated from a wide variety of processes, ranging from uranium and phosphate mining to municipal drinking water treatment. Processes that produce TENORM wastes analyzed in this study include uranium mining, phosphate and elemental phosphorus production, phosphate fertilizer production, coal ash generation, oil and gas production, drinking water treatment, metal mining and processing, and geothermal energy production. Primordial radionuclides present in the parent materials can become concentrated in the wastes during mining and beneficiation, mineral processing, oil and gas extraction, or various other processes. This results in radionuclide concentrations in TENORM wastes that are often orders of magnitude higher than in the parent materials.

A.2 References:

A.2.1 Sanborn Maps

Sanborn Maps may be purchased through many commercial services. Use the internet to locate sources on line. Maps are also available on line at the New Jersey State Library located as 185 West state St, Trenton NJ. You will need to obtain a New Jersey State library card to access the maps on line. Full color maps of portions of New Jersey are also available on line through Princeton University at: http://libweb.princeton.edu/libraries/firestone/rbsc/aids/sanborn/sanborn-web.xls

A.2.2 Industrial Directories

Industrial Directories such as MacRae's Industrial Directory, New Jersey Industrial Directory and New Jersey Manufacturers Directory are available in most County Libraries and in the New Jersey State Library located at 185 West State St in Trenton, NJ. The State library has the directories dating back to the early 1900's.

A.2.3 Aerial Photographs.

Aerial photographic coverage is available for review at the New Jersey Department of Environmental Protection, Tidelands Management Program, Aerial Photo Library, Trenton, New Jersey and from other commercial services. Historical maps are available on line at the Rutgers Environmental Map collection. Aerial photos can also be reviewed or purchased on line at www.historicaerials.com

Appendix B

Preliminary Assessment Data Gathering Checklist

Preliminary Assessment Data Gathering Checklist

Data Gathering Complete		Data Gathering Tasks	Current Operations	Historical Operations	N/A
	1	**General Information**			
		Facility Name and Address			
		Blocks and Lots of the Industrial Establishment			
		Municipal and County Name			
		NJDEP Program Interest Number			
		USEPA ID			
	2	**Ownership and Operational History**			
	3	**Historical Site Operations**			
	4	**Current Site Operations**			
	5	**Historical Aerial Photograph Review**			
	6	**Historical Sanborn Fire Insurance Map Review**			
	7	**Hazardous Material and Substance Use**			
	8	**Wastewater Discharge History**			
	9	**Process Waste Streams**			
	10	**Radioactive Materials**			
	11	**Discharge History**			
	12	**Environmental Permits**			
		Air Pollution Control Permits			
		Underground Storage Tank Permits			
		NJDPES Permits			
		NJ Solid Waste Permits			
		RCRA Permits			
		Other Permits			
	13	**Summary of Enforcement Actions**			
	14	**Fill Material**			
		Historic Fill			
		Alternate Fill			
		Clean Fill			
	15	**Waste Disposal Areas (dumps, landfills, etc.)**			
	16	**Previously Conducted or Ongoing Remediation that has not received NFA/RAO**			
	17	**Protectiveness Evaluation of Approved Remedies/ Order of Magnitude**			
	18	**Potential Areas of Concern**			
	A	**Bulk Storage Tanks and Appurtenances**			
		Aboveground Storage Tanks and Associated Piping			
		Underground Storage tanks and Associated Piping			
		Silos			
		Rail Cars			
		Loading and Unloading Areas			
		Piping, Above Ground and Below Ground Pumping Stations, Sumps and Pits			

	B Storage and Staging Areas			
	Storage Pads Including Drum and/or Waste Storage			
	Surface Impoundments and Lagoons			
	Dumpsters			
	Chemical Storage Cabinets or Closets			
	C Drainage Systems and Areas			
	Floor Drains, Trenches and Piping and Sumps			
	Process Area Sinks and Piping which Receive Process Waste			
	Roof Leaders when Process Operations Vent to the Roof			
	Drainage Swales and Culverts			
	Storm Sewer Collection Systems			
	Storm Water Detention Ponds and Fire Ponds			
	Surface Water Bodies			
	Septic Systems Leach-Fields or Seepage Pits			
	Drywells and Sumps			
	D Discharge and Disposal Areas			
	Areas of Discharge per N.J.A.C. 7:1E			
	Waste Piles as Defined by N.J.A.C 7:26			
	Waste Water Collection Systems Including Septic Systems, Seepage Pits, and Dry Wells.			
	Landfills or Land-Farms			
	Spray-Fields			
	Historic Fill or any Other Fill Material			
	Open Pipe Discharges			
	E Building Interior Areas with a Potential for Discharge to the Environment			
	Loading or Transfer Areas			
	Waste Treatment Areas			
	Boiler Rooms			
	Air Vents and Ducts			
	Hazardous Material Storage or Handling Areas			
	F Other Areas of Concern			
	Electrical Transformers and Capacitors			
	Hazardous Material Storage or Handling Areas			
	Waste Treatment Areas			
	Discolored or Spill Areas			
	Open Areas Away From Production Areas			
	Areas of Stressed Vegetation			
	Underground Piping Including Industrial Process Sewers			
	Compressor Vent Discharges			
	Non-Contact Cooling Water Discharges			
	Areas which Receive Flood or Storm Water From Potentially Contaminated Areas			
	Active or Inactive Production Wells			
	Active or Inactive Rail Lines, Spurs or Sidings			
	G Any Other Site-Specific Areas of Concern			

	19	**Plans Figures and Drawings**			
		Site Location Map			
		Site Plan Showing Tax Lots and Blocks			
		Site Plan Showing Site Features and Potential Areas of Concern			
	20	**Preliminary Assessment Site Inspection**			

Appendix C

Acronyms

ACRONYMS

GIS	Geographic Information Systems
ISRA	Industrial Site Recovery Act
LSRP	Licensed Site Remediation Professional
NFA	No Further Action
N.J.A.C.	New Jersey Administrative Code
NJDEP	New Jersey Department of Environmental Protection
NJPDES	New Jersey Pollutant Discharge Elimination System
N.J.S.A.	New Jersey Statutes Annotated
NORM	naturally occurring radioactive materials
PAH	polynuclear aromatic hydrocarbons
PCB	polychlorinated biphenyl
RAO	Response Action Outcome
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
SI	Site Investigation
TAL	Target Analyte List
U.S. EPA	United States Environmental Protection Agency
UST	underground storage tank