EHS&L Document

Waste Analysis Plan

Nature of Changes

Item	Paragraph	Description	Justification
1.	Attachment C	Component Center etching process has been discontinued, lead contaminated with Pu removed, and laboratory metal standards added.	Reflect changes in waste management operations.
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
List Below any Documents, including Forms & Operator Aids which must be issued concurrently with this document revision:			

This Document contains a total of 33 pages excluding the signature page generated by Documentum, the document control application software.

DOCUMENT REVIEW/APPROVAL/DELETION CHECKLIST

All new and/or revised procedures shall be approved by the change author, cognizant manager(s) of areas affected by the changes, and by applicable manager(s) of any function that approved the previous revision of the document unless responsibility for such approval has been transferred to another organization. Also, the procedure shall be approved by manager(s) of functional organizations that provide technical reviews with the exception of the Training Department. Finally, Document Control shall verify that the required approvals have been properly obtained and that any documents that must be issued concurrently are ready to be issued.

Minor Changes: If the proposed changes are limited to editorial and/or administrative changes check the box at the right. The document will be routed directly for review by EHS&L without technical review. All applicable approvals must still be obtained.	☐

Document Reviews			Document Approvals	
Purpose/Function of Review	Specify Reviewer(s) (Optional except for change author)	(Check all that apply)	Title of Approver	(Check all that Apply)
Document Control (Automatic)		☒	Document Control (Automatic)	☒
Change Author	JB Perryman	☒	Author	☒
Independent Technical Review	LJ Maas	☒		
Operability Review(s)			Mgr, Richland Operations[1]	☐
Conversion		☐	Mgr, Uranium Conversion & Recovery Operations[1]	☐
Recovery		☐		
Ceramics		☐	Mgr, Ceramic Operations[1]	☐
Rods		☐	Mgr, Rods & Bundles[1]	☐
Bundles		☐		
Transportation		☐		
Components		☐	Mgr, Component Fabrication[1]	☐
Maintenance Review		☐	Mgr, Maintenance[1]	☐
Lab Review		☐	Mgr, Analytical Services[1]	☐
EHS&L Review(s)			Mgr, EHS&L[2]	☐
Criticality		☐	Mgr, Criticality Safety[2]	☐
Radiation Protection		☐	Mgr, Safety, Security & Emergency Preparedness[2]	☐
Safety/Security		☐		
Emergency Preparedness		☐		
MC&A		☐	Mgr, Licensing & Compliance[2]	☒
Transportation		☐		
Environmental	JB Perryman	☒		
BWR Product Eng. Review		☐	Mgr, BWR Product Engineering	☐
BWR Core Engineering Review		☐	Mgr, BWR Core Engineering	☐
Codes and Methods Review		☐	Mgr, Codes and Methods	☐
Proj. Eng. & Design Support Review		☐	Mgr, Proj. Eng. & Design Support	☐
Quality Review		☐	Mgr, Quality	☐
Project & Plant Eng. Review		☐	Mgr, Project & Plant Eng.	☐
Purchasing Review		☐	Mgr, Purchasing	☐
Others:		☐	Mgr, Richland Site/Other	☐
Training & Employee Dev.:[3]		☐	Training & Employee Dev.	☐

[1]Note: If approvals include 2 or more product center managers, the Operations manager can be substituted for the applicable product center managers.

[2]Note: If approvals include 2 or more EHS&L functional managers, the EHS&L manager can be substituted for the applicable EHS&L functional managers.

[3]Note: Training department review is required for all procedures that require or affect a Learning Plan and if additional training materials or curriculum must be revised before issuing procedure.

EHS&L Change Impact Evaluation Form		
Document / ECN No*.: E06-04-006		Change Evaluator: LJ Maas
Does the change potentially impact Criticality Alarm System (CAS) coverage?	☐ Yes ☒ No	If yes, explain:
NRC Pre-Approval Evaluation:		
Is NRC Pre-approval (License Amendment) Needed? (Based on "Yes" answer to any of five questions below). (Based on "No" answer to all five questions below).	☐ Yes ☒ No	
1. Does the change create new types of accident sequences that, unless mitigated or prevented, would exceed the performance requirements of 10 CFR 70.61 (create high or intermediate consequence events) and that have not previously been described in AREVA NP Inc's ISA Summary?	☐ Yes ☒ No	If yes, explain:
2. Does the change use new processes, technologies, or control systems for which AREVA NP Inc. has no prior experience?	☐ Yes ☒ No	If yes, explain:
3. Does the change remove, without at least an equivalent replacement of the safety function, an item relied on for safety that is listed in the ISA Summary?	☐ Yes ☒ No	If yes, explain:
4. Does the change alter any item relied on for safety, listed in the ISA Summary, that is the sole item preventing or mitigating an accident sequence of high or intermediate consequences?	☐ Yes ☒ No	If yes, explain:
5. Does the change qualify as a change specifically prohibited by NRC regulation, order or license condition?	☐ Yes ☒ No	If yes, explain:
Actions Required Prior to or Concurrent with Change Implementation Evaluation:		
Action		**Explanation**
6. Modification / Addition to CAS system or system coverage documentation	☐ Yes ☒ No	If yes, explain:
7. Acquire NRC pre-approval (license amendment)	☐ Yes ☒ No	If yes, explain:
8. Conduct/modify ISA	☐ Yes ☒ No	If yes, explain:
9. ISA Database Modification	☐ Yes ☒ No	If yes, explain:
10. Modification of other safety program information / underlying analyses (PHA, RHA, FHA, NCSA, etc.)	☐ Yes ☒ No	If yes, explain:
Actions required subsequent to Change Implementation Evaluation:		
11. Update safety program information (PHA,RHA,FHA,NCSA, P&ID)	☐ Yes ☒ No	If yes, explain:

* **If this form exists as a part of a document, the document number is not required.**

1.0 Introduction

This Waste Analysis Plan (WAP) provides guidelines and direction for the sampling, analysis, characterization, and designation of potentially dangerous waste generated at the AREVA NP Inc. (AREVA) facility in accordance with Washington Department of Ecology Dangerous Waste Regulations (WAC 173-303) and U.S. Environmental Protection Agency (USEPA) regulations found in 40 CFR Parts 260 through 270. The WAP is implemented for all wastes that may be dangerous, including those from:

- Waste Generating Sources
  - Production operations
  - Maintenance activities
  - Laboratories
- Waste Management Activities
  - Satellite accumulation areas
  - Container storage areas

The following sections discuss the evaluation of waste analysis data, sampling and analysis methods, quality assurance, and land disposal restriction (LDR) treatment standards. The Facility Description, which describes AREVA's waste generating and waste management units in detail, may be found Section B of AREVA's Dangerous Waste Part B Permit Application.

2.0 Evaluation of Waste Analysis Data

Selected waste parameters are monitored as necessary to ensure that each dangerous waste is sufficiently characterized for safe and proper management. Because all dangerous wastes managed at the AREVA facility are generated on-site, knowledge of the generating process or activity provides a foundation for characterization and designation information of each waste stream and ensures that compatibility issues due to unknown waste characteristics are essentially eliminated. The waste characterization and designation are based on either direct analytical data or application of process or material knowledge. Characterization includes the identification of dangerous constituents, characteristics, and criteria likely to be associated with a dangerous waste and may include applicable references from published scientific, engineering, or product literature. This complete characterization allows for the designation of a waste as either non-regulated (non-dangerous) solid waste, dangerous waste (DW), mixed waste or extremely hazardous waste (EHW).

2.1 WAP Objective

The objective of using the WAP for waste characterization and designation is to ensure proper handling and disposition of waste material. Dangerous wastes are discharged to the City of Richland's wastewater treatment facility in accordance with an industrial wastewater discharge permit; stored in drums at the container storage area; stored in the Component Chemical Waste Tank, or recycled in special units on-site. In addition, AREVA sends both dangerous waste and mixed waste to commercial treatment, storage, and disposal (TSD) facilities. Requirements for disposal at commercial TSD facilities are described in Section 2.3.

2.2 Waste Characterization and Designation

Wastes are identified and segregated at the AREVA facility according to AREVA standard procedures. After a waste is determined to be solid waste, it must be determined if the waste is

a low-level radioactive-contaminated waste and furthermore whether it designates as a chemically dangerous waste. For wastes determined to be either dangerous/low-level radioactive mixed wastes or dangerous wastes, or extremely hazardous wastes, this WAP will be used to determine their ultimate disposition.

The waste designation process (described in WAC 173-303-070 [3]) requires the generator to test the waste in accordance with approved sampling and testing methods (WAC 173-303-110) or apply knowledge of the waste in light of the materials or the process used when such knowledge can be demonstrated to be sufficient for determining whether or not it is designated properly (i.e. process knowledge). Process knowledge can be used to significantly reduce or eliminate the analytical requirements for waste characterization and designation. If a waste is determined to be dangerous, mixed, extremely hazardous, or non-dangerous through the application of process knowledge, no sampling will be required. The procedure for formal waste designation is included as Attachment A.

2.3 Performance Evaluation

AREVA conducts a number of internal audits at frequencies that range from monthly to annually. Audit subject areas include dangerous waste management units, plant effluent monitoring, environmental monitoring, etc. If findings are identified during these audits, AREVA policy is to issue a Condition Report per the internal WebCap Corrective Action System. Condition reports entered into WebCap are assigned a significance level and an issue owner. The level of problem evaluation is keyed to significance level; evaluation results are documented within WebCap. Any identified corrective actions are assigned owners and tracked to completion within the system.

2.4 Commercial TSD Requirements

Commercial TSD facilities require information available from process knowledge (e.g., feed chemicals, reactions, by-products and intermediates, and potential sources of contamination) and a thorough characterization/designation of each waste to ensure proper handling and disposition. This characterization may include the identification of listed solvents, discarded or off-specification chemical products, other organic compounds, and radioactivity levels of the waste. Dangerous waste characteristics and criteria information including flash point, pH, reactivity, toxicity, and persistence data may also be required.

Commercial TSD facilities also require a waste-specific profile (Attachment B). This profile describes the physical properties of the waste (e.g., phase and liquid content), specifies the chemical constituents of concern, and gives a normal range for the concentration of each chemical constituent. Normal ranges in constituent concentrations are specified so that frequently generated waste streams may fluctuate within defined ranges without being classified as off-specification or non-conforming wastes. Completed profile sheets are reviewed to ensure accuracy with corresponding AREVA waste management direction files. Prior to conducting business with any TSD facility, a copy of either their RCRA Part B Permit or other applicable permits/licenses must be reviewed by Licensing & Compliance.

2.5 Waste Data Table

The Waste Data Table, Attachment C, summarizes all necessary waste analysis components as required by regulation and facility procedures, and provides sufficient information to ensure that AREVA properly manages each waste stream. Each routinely generated dangerous waste stream at the AREVA facility has been included on the table, which also includes the following information:

General Information - a general description of the waste and the process or activity generating the waste.

Basis for Hazard Classification – laboratory analysis, field analysis, process knowledge, vendor material safety data sheet (MSDS).

Waste Code – State or federal waste code numbers.

Hazardous Properties of Waste – a listing of the hazardous characteristics or criteria of the waste to ensure safe and proper handling.

Chemical Constituents – a listing of the chemical constituents in the waste.

WMD Number – corresponding Waste Management Direction (WMD) number for that specific waste stream. The WMD is AREVA's waste designation form and each file will contain pertinent waste designation information.

LDR Treatment – Land Disposal Restriction (LDR) treatment standards and final disposition of the waste.

3.0 Sampling and Analysis Methods

Numerous types of sampling equipment and techniques are used in collecting representative samples of wastes. The equipment and technique selected depend upon the physical nature of the waste, the location from which the sample is to be taken, and other constraints (e.g., health and safety precautions, required sample volume, homogeneity/stratification effects). The following sections describe recommended sampling equipment and techniques for various types of waste materials and waste locations. The information in the following section is for reference whenever a new, different, or potentially dangerous waste stream is generated.

3.1 Sampling Equipment

Possible uses of the equipment described below are identified in Attachment D for various waste types and waste locations. Special circumstances or conditions may warrant the use of alternative or modified equipment or methods. Detailed descriptions for the use of each of these sampling devices is presented in SW-846 Chapter 9, Sampling Plans, and in Samplers and Sampling Procedures for Hazardous Waste Streams (EPA-600/2-80-018).

3.1.1 Free-Flowing Liquids and Slurries

- Composite Liquid Waste Sampler (Coliwasa) - The Coliwasa is a device used to sample free-flowing liquids and slurries contained in drums, shallow tanks, pits, and similar containers. This device provides a representative sample of both layered (several immiscible phases) and homogeneous liquid materials. The Coliwasa consists of a glass, plastic, or metal tube equipped with an end closure that can be opened and closed while the tube is submerged in the material to be sampled.
- Weighted Bottle - The weighted bottle samples liquids and free-flowing slurries; however, stratification effects cannot be adequately handled with this device, so it is more useful for homogeneous materials. This sampler consists of a glass or plastic bottle, sinker, stopper, and line that is used to lower, raise, and open the bottle. The specifications for constructing a weighted bottle sampler are contained in ASTM Methods D270 and E300.

- Dipper - A dipper samples liquids and free-flowing slurries. The dipper consists of a glass, plastic, or stainless steel beaker that may or may not be clamped to the end of a pole of suitable length and material that serves as the handle.
- General sample containers - laboratory sample containers may be used to directly collect samples from process lines, proportional samplers, and sample ports. These containers (usually glass or plastic) are available from the selected contract analytical laboratory.
- Other Equipment - Additional equipment is available for a variety of sampling situations. This equipment includes bailers, suction pumps, and positive displacement pumps, all of which may be used to sample liquids in specific situations.

3.1.2 Solids

- Thief - A thief is used to sample dry granules or powdered wastes whose particle diameter is less than one-third the width of the slots. Thiefs consist of two slotted concentric tubes, usually made of stainless steel or brass. The outer tube has a conical pointed tip that permits the sampler to penetrate the material being sampled. The inner tube is rotated to open and close the sampler. Thiefs are available at most laboratory supply stores.
- Auger - An auger samples hard or packed solid wastes or soil. Augers consist of sharpened spiral blades attached to a hard metal central shaft. Augers are generally available at hardware and laboratory supply stores.
- Scoops and Shovels - Scoops and shovels are used to sample granular or powdered material in bins, shallow containers, and conveyor belts. Scoops are available at laboratory supply houses. Flat-nosed shovels are available at hardware stores.
- Other Equipment - Additional equipment may be used as required for a variety of specific sampling situations.

3.1.3 Materials of Construction

As noted in the descriptions of the various types of sampling equipment, there are numerous materials of construction available (e.g., stainless steel, glass, plastics). In most circumstances, the material of construction is dictated by the properties of the waste being sampled. In general, the materials that provide the greatest chemical compatibility are stainless steel, glass, and Teflon. Stainless steel is most suitable for sampling solids and in-situ soils, whereas glass and Teflon are highly suitable for sampling liquids.

Choice of material may be accomplished through published compatibility information (equipment catalogs or material compatibility charts), equipment vendor technical support, or analytical laboratory technical support.

3.2 Sampling Methods

In order to ensure proper management of wastes at the AREVA facility, samples that are representative of the waste material shall be collected. Representative samples should exhibit the average properties and constituents of the whole waste stream or material. Numerous or composite samples may be necessary to define the average properties and constituents for a waste material. At least two samples shall be pulled from each waste material, even if only one of the samples is intended to be submitted for analysis. Guidance for obtaining representative samples from containers, process pipe sampling ports, and other miscellaneous containers is

provided in the following discussions. Where applicable, the methods referenced in WAC 173-303-110(2)(a) will be followed.

3.2.1 Container Sampling

Container (e.g., 5-gallon cans, 55-gallon drums) sampling occurs on an infrequent basis due to the preferred method of sampling waste being at the point of generation. However, container resampling is occasionally performed at the request of waste treatment/disposal companies for the purpose of land disposal restriction (LDR) verification or other company-specific waste profile requirements.

Samples taken for the purpose of LDR verification or waste-specific profile information are generally discrete samples, i.e. one sample per container. If composite sampling is requested, the contents of selected containers are mixed in equal volumes to obtain a representative sample from the waste stream. Standard documentation procedures are followed (see Section 3.6) to ensure proper labeling and handling when transferring from the sampling location to the laboratory. See Section 6.0 for container tracking protocol.

Use of a sampling device such as the Coliwasa (glass) can help determine if a container's contents are homogenous or otherwise stratified. The results of this evaluation can be used to determine whether the contents of a container require mechanical homogenization (mixing, stirring, etc.) or specific phase partition sampling to effectively represent the entire waste volume within the container.

3.2.2 Process and Waste Line Sampling

Most process and waste lines at the AREVA facility are provided with sampling ports. These ports are generally 1/4-inch stainless steel tubing with valve arrangements that allow the material in the line to be sampled directly. Other process or waste lines are equipped with proportional samplers. To manually obtain a sample from a process or waste line, the following procedure should be followed.

- Ensure that the sample container is empty and clean prior to sample collection.
- Eliminate any visible, easily removable solids that may have accumulated or precipitated/crystallized at the discharge end of the sampling port. This will prevent possible contamination of the sample.
- If possible, purge the sampling port line for one to two sample line volumes. This may not be possible in many circumstances, since a waste will be generated and disposal may be difficult. If the sample to be taken is of sufficient volume, this small amount of waste present in the port line may be of little consequence. If there are numerous samples to be taken from the same port, take the larger volume sample first, thereby reducing the effect of the non-purged waste.
- Collect the sample directly from the sample port into the sample container. Only in cases where it is physically impractical to do this should the sample be collected into an intermediate container. This will further reduce the chance of introducing contamination.
- For lines equipped with proportional samplers, remove the collection bottle when full and transfer a portion of the material into a sample bottle.

3.2.3 Miscellaneous Materials Sampling

When sampling contaminated items such as rags, protective equipment, and other miscellaneous materials, it must be determined if the material can be homogenized into a

uniform or nearly uniform mass without affecting the integrity of the sample. If the material can be homogenized, it is done prior to sampling. Following homogenization, a grab sample is taken to retrieve the material. The actual tool utilized for sample collection will depend on the sample form (e.g., fine granular material, chips, etc.).

In situations when the materials to be sampled do not lend themselves readily to homogenization, sampling is aimed at retrieving a portion of the material that would be expected to exhibit a representative degree of contamination. Criteria used to extract a representative sample may include visual examination, operator input, process knowledge, professional experience, etc. The overall intent of the sampling is to obtain a sample that is representative of the entire waste stream. Sampling performed to meet the requirements of this plan will either be conducted or supervised by a qualified dangerous waste specialist.

3.2.4 Rinsate Sampling

To determine the effectiveness of sampling equipment decontamination procedures, it may be helpful to collect a rinsate sample. Sampling equipment is generally decontaminated by scrubbing with a biodegradable commercial detergent (e.g., Liquinox or equivalent), followed by a deionized water rinse. The rinsate sample can then be collected by rinsing the equipment again with deionized water and collecting this water into a sample container. Analytical parameters for the decontamination sample should be the same as those for the sampled material for which the device was previously used.

3.2.5 Additional Sampling/Resampling

If for any reason the samples are damaged, broken, custody is compromised, hold time exceeded, or other circumstances occur which require additional sampling to be performed, resampling shall be conducted in a manner that is consistent with the guidelines outlined in this WAP. It is preferable to take duplicate back-up samples at the time of initial sampling. The duplicate samples must be held in a secured location following chain-of-custody protocols. If it becomes necessary for the duplicate samples to be analyzed, it should be noted on the chain-of-custody form. All applicable hold times and preservation techniques must be adhered to if analysis of duplicate samples is required.

3.3 Sample Containers and Handling

In general, wide-mouth sample containers (usually plastic) will be used for solids. The analytical laboratory will also provide this information when sample containers are ordered for an upcoming sampling event. When contacting the laboratory, extra sample containers should be ordered as a contingency (e.g., broken bottles, additional samples to be taken). Guidelines for sample containers, preservatives, and holding times can be obtained from a contract analytical laboratory or from SW-846.

Prior to the actual sampling event, sample labels should be prepared and affixed to the appropriate sample container. In many cases, sample containers will arrive from the laboratory with sample labels already on the container. These labels will identify the analytical parameters and any added preservatives. If an AREVA sample label will be used, it should be completed and placed on the sample container directly over the laboratory label.

The sample container should be placed immediately in a shipping container (e.g., cooler with ice) if it is to be analyzed by an offsite laboratory (ice is not necessary for some metals and radionuclide analysis, consult with offsite laboratory). Prior to shipping, the cooler should be filled with sufficient packing material to prevent damage to the sample containers. The necessary paperwork should be completed (see Sections 3.6.2 - Sample Field Notes, and

Section 3.6.4 - Chain-of-Custody Record) and the Chain-of-Custody Record should be placed in the shipping container. The shipping container should then be sealed (i.e., custody seal - Section 3.6.5), taped, and shipped for overnight delivery to the designated analytical laboratory. Occasionally, samples may be held in on-site refrigerators if they are locked and chain-of-custody procedures are followed.

Specific guidelines apply to the handling and shipment of radioactive samples. The specific AREVA facility requirements for collecting and shipping radioactive samples are detailed in the AREVA procedures available at the facility. In general, the following requirements must be met:

- samples must be collected in a controlled area,
- samples must be surveyed by a AREVA health and safety technician (HST) before leaving the controlled area,
- Transportation and Logistics, AREVA's packaging and shipping organizations, will complete the required paperwork and properly label and mark the sample package.

3.4 Frequency of Analyses

Chemical waste analysis and/or the application of process knowledge for characterization, designation, and waste profiling will be performed whenever a new waste is generated, if a process change significantly alters the characteristics of an existing waste, for recertification of a waste for disposal at a commercial TSD facility, or for verification purposes at the request of Licensing & Compliance or other pertinent plant personnel. The recertification of dangerous waste required by a commercial TSD facility may include annual chemical waste analysis for verification of existing waste profiles.

3.5 Analytical Methods

Testing methods used will comply with the requirements as included in WAC 173-303-110. Quality control procedures specified by the testing method or an approved equivalent method must be followed in order for the analytical result to be considered valid for designation.

3.6 Documentation

Sample collection and handling are documented through the use of Dangerous Waste Sample Field Notes, Sample Labels, Chain-of-Custody Records, and Custody Seals. These documentation and record-keeping components satisfy the requirements in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, EPA Publication No. SW 846.

3.6.1 Waste Management Direction Form

The Waste Management Direction Form (Attachment E) is used by Licensing and Compliance personnel for direction on the handling of new or recently changed wastes, to specify and clarify sampling and analytical requirements, to designate the waste, and to identify management requirements (e.g., storage, transportation, disposal). This form is also used by warehousing personnel to ensure proper containers are used as well as correct marking and labeling of the container. The procedure for formal waste designation (Attachment A) shall be followed when completing this form.

3.6.2 Sample Field Notes

Field sampling notes document information pertinent to physical sample collection and field measurements. The field notes may include the following data, as appropriate.

- Sampling site description

- Waste location (e.g., container, in-situ soil)
- Waste name on label, if one is present
- Container numbers
- Sample description
- Sampling technique/method and equipment used
- Field measurements
- Observations and notes
- Sketch of sampling site
- Photographs
- Changes to field procedures
- Sampler's signature
- Date and time sampled

These notes are recorded in such a manner that sampling details can be reconstructed without relying on the sampler's memory.

3.6.3 Sample Labeling

The Environmental Sample Label, Attachment F, is affixed to the sample container prior to or at the time of sampling. It is used to prevent misidentification of samples and provides sufficient information to identify the sample. The sample label is typically supplied by the laboratory performing the analyses and includes the following information:

- Company name
- Sample identification
- Date sampled
- Time sampled
- Parameters to be analyzed
- Preservatives used

3.6.4 Chain-of-Custody Record

The Chain-of-Custody Record, Attachment G, documents the history of the sample from the time of collection through delivery to the laboratory and final disposition. Chain-of-custody elements address all aspects of sample collection, laboratory analysis, and final analytical data files. A copy of the pertinent pages of the Sample Field Notes may accompany the Chain-of-Custody Record to the laboratory. The Chain-of-Custody Record contains the following:

- Analysis requested
- Sampler's initials
- Sampler's signature
- Sample identification
- Date sampled
- Date and time of possession
- Time sampled
- Signature(s) of other custodians
- Number of Sample containers
- Custodian's organization

Samples are considered to be in a person's custody if they:

- are in your possession;
- are in your view, after being in your possession;
- are in your possession and you place them in a secured location; or
- are in a designated secure area.

The Chain-of-Custody Record is completed after the samples have been taken and are being prepared for shipment to the laboratory. The record is then placed in the sample shipping container.

3.6.5 Custody Seal

The Custody Seal, Attachment H, is used to detect tampering of the samples during shipment to an off-site laboratory. A single custody seal is placed on a sample shipping container such that opening the lid would destroy the seal. It is not necessary to put custody seals on individual sample containers within a larger shipping container provided the samples are always in the custody of the responsible personnel prior to shipment.

3.6.6 Operating Record Requirements

Licensing and Compliance staff are generally responsible for Waste Analysis Plan sampling, analysis, and record keeping. All original documents are kept on file (hard copy or electronic) as part of the Operating Record (required for dangerous waste management facilities).

4.0 Quality Assurance/Quality Control

Appropriate use of data generated under the wide range of analytical conditions encountered requires reliance on the quality control practices incorporated into the sampling and analytical methods and procedures. As such, quality control must be addressed both in the field and in the laboratory. In the field, quality control means taking a representative sample and maintaining sample integrity. A representative sample is taken by personnel proficient in the use of sampling techniques and equipment. Sample integrity is maintained through the use of proper sample-handling practices, custodial procedures, sampling activity documentation, Environmental Sample Label (Attachment F), Chain-of-Custody Record (Attachment G), and Custody Seal (Attachment H).

Another important factor in maintaining sample integrity is the use of proper sample containers and preservation techniques, as well as adherence to applicable holding times. In the laboratory, quality assurance is performed by meeting the requirements of specific procedures found in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," EPA Publication No. SW 846.

To assist in determining the validity of analytical sampling and its resulting data, established data validation protocols will be followed if required in the applicable Sampling and Analysis Plan. If necessary, validation procedures will be performed by Licensing & Compliance or an outside consultant for verification of the quality of analytical results.

4.1 Laboratory Requirements

AREVA's analytical laboratory is certified by the Washington State Department of Ecology (Ecology) to perform several analyses which are commonly used to characterize various forms of waste media. These analyses include fluoride, ammonia as nitrogen, nitrate as nitrogen, chloride, sulfate, and pH. A Quality Assessment Plan for AREVA is maintained by the analytical laboratory to ensure that sample analytical data is of appropriate quality.

Offsite laboratories that are contracted to perform waste analyses for AREVA should be certified by the Washington State Department of Ecology. If a laboratory is not certified with Ecology, the laboratory should maintain a certification within their respective state for any analysis that is performed. A listing of all certifications shall be obtained prior to using an offsite laboratory for waste analysis to ensure that these minimum requirements are met. A Quality Assessment

Plan or overview of the plan must also be obtained from the contracted laboratory prior to any performed analyses.

An analytical parameters table (Attachment I) summarizes the most common waste analyses that are performed by AREVA and contracted laboratories. Detection limits will be specified for each specific project and are subject to matrix interferences and equipment sensitivity. At a minimum, quality control measures will include one or more of the following:

- Blind duplicates are independent samples that are taken at a specified frequency from the same location at the same time but are labeled as different samples. Blind duplicates are used to measure the variation of both laboratory analyses and sample homogeneity.
- Trip Blanks are sample containers prepared with deionized water and used when sampling volatile organic compounds. Trip blank contamination typically indicates that the source of contamination is the sampling container.
- Equipment rinsate samples are prepared at the end of the sampling activity after the final decontamination of the sampling equipment has been completed. The sampling equipment is rinsed with deionized water, which is collected in a sample bottle and analyzed for the same parameters as the sampling plan requires. Contamination of the sample equipment rinsate indicates that equipment decontamination was not effective.

5.0 LDR Treatment Standards

Wastes resulting from AREVA operations that exceed applicable land disposal restriction (LDR) treatment standards will be sent off site to a commercial TSD facility for treatment prior to disposal, stored on site (in the case of dangerous mixed waste) or, where applicable, treated in tanks per either treatment-by-generator or permit-by-rule guidelines prior to discharge to the Publicly Owned Treatment Works (POTW). The following is a discussion of LDR protocols.

All containerized dangerous wastes managed at the DWSF are either dispositioned to a commercial TSD facility or stored long term on-site (certain dangerous mixed wastes) until ultimate treatment or disposal can be determined. Containerized wastes that are to be shipped offsite to a commercial TSD facility must be accompanied by a specific waste profile (section 2.3), a completed LDR verification form (Attachment J), and be included as an entry on a Hazardous Waste Manifest (Attachment K). The LDR verification form is supplied by the TSD facility and required prior to shipment of waste. Typically, one LDR verification form is required for each waste stream and the form is updated on an annual basis.

6.0 Container Tracking

All wastes managed at the Dangerous Waste Storage Facility are tracked using an extensive electronic database system based on a Microsoft Access platform. The Solid Waste and Hazardous Waste Container Database contains information specific to each individual container onsite at AREVA and is managed by a Uranium Conversion and Recovery engineer. Input for daily or other routine operations such as drum packaging, movement, and storage is typically performed by technicians from the Uranium Conversion and Recovery group. The database serves as a real-time drum tracking tool and establishes a unique manifest for each waste container which includes information such as chemical contents, total grams uranium, date packed, and storage location.

7.0 References

U.S. Environmental Protection Agency. 1980. Samplers and Sampling Procedures for Hazardous Waste Streams. EPA-600/2-80-018, Washington, D.C.

Solid and Hazardous Waste Container Management Database, AREVA NP Inc.

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. SW-846, Third Edition as Amended by Update III (August 1996), Washington, D.C.

Washington Department of Ecology. 1998. Chemical Testing Methods for Designating Dangerous Waste. WDOE 97-407, Olympia, Washington.

Attachment A

Procedure for Formal Waste Designation

1.0 Purpose and Scope

The purpose of this document is to serve as a guideline for determining if a waste is to be managed as a dangerous waste, which is a waste that is regulated by either the Washington State Department of Ecology as a dangerous waste or the Environmental Protection Agency as a hazardous waste. This document is to be used as a guide for Licensing and Compliance and is not intended to be an all inclusive duplicate of the waste designation sections included in Ecology's Dangerous Waste Regulations, WAC 173-303. If questions arise during the waste designation process, the applicable section(s) of the Dangerous Waste Regulations should be consulted.

2.0 Responsibilities

Licensing and Compliance has the overall responsibility for designating wastes generated at AREVA. Licensing & Compliance along with Uranium conversion and Recovery Operations, Technical Support has the responsibility to ensure that all radiologically contaminated waste is managed and disposed of properly. It is the responsibility of each person/organization to notify Licensing and Compliance before any new chemical is brought onsite that may result in the generation of a waste, and prior to disposal of any non-routine or uncharacterized waste.

3.0 Instructions

When designating a waste, each section listed below shall be evaluated in order to determine if in fact the waste will be designated as a dangerous waste. The corresponding waste number from each section, if applicable, shall be added to the waste which is being designated. There is no need to evaluate section 5.0 of this procedure if a waste number has been previously assigned. The Waste Management Direction (WMD) form is included as Attachment E.

4.0 Federal (RCRA) Waste

Federal (RCRA) Listed Waste
Reference: WAC 173-303-081
Corresponding List: WAC 173-303-9903

Discarded chemical products have to meet the following criteria:

- Unused
- Sole active ingredient (not mixtures)
- Specifically listed in WAC 173-303-9903 in two categories: Acutely Dangerous Chemical Products, which are designated as extremely hazardous waste (EHW); and moderately dangerous chemical products, which are designated as dangerous waste (DW).

Discarded chemical products include:

- Commercial chemical products
- Off-specification chemical products
- Spill cleanup of materials designated as a discarded chemical product
- Residue left in containers of "Acutely Dangerous Chemical Products."

If a waste qualifies as a discarded chemical product, the corresponding waste number shall be entered in the appropriate section of the waste designation form.

4.1 Dangerous Waste Sources (RCRA)

Reference: WAC 173-303-082
Corresponding List: WAC 173-303-9904

Dangerous waste sources are those wastes which consist of spent materials. Specific criteria must be met in order for a waste to be designated as a source waste, such as 100% concentration, etc. Consult section WAC 173-303-9904 for these criteria. Dangerous waste sources are divided into two categories:

- Non-specific sources which are generically listed in WAC 173-303-9904 and given waste numbers F___.
- Specific sources are processes specifically listed in WAC 173-303-9904 and given waste numbers K___.

If a waste qualifies as a dangerous waste source, the corresponding waste number shall be entered in the appropriate section of the waste designation form.

4.2 Federal (RCRA) Waste Characteristics

4.2.1 Characteristic of Ignitability

Reference WAC 173-303-090(5)

An ignitable waste must possess one of the following characteristics:

- Liquid waste with a flashpoint <140F.
- Solid waste capable of ignition through spontaneous combustion, absorption of moisture, etc. and when ignited burns so vigorously that it creates a hazard (e.g. elemental sodium).
- Compressed gases capable of ignition.
- Oxidizer waste as defined in 49 CFR 173.151 (e.g. chlorates, nitrates, permanganates, and inorganic peroxides.)

A waste which possesses one of the characteristics listed above shall be designated as ignitable waste and the D001 waste number shall be entered in the appropriate section of the waste designation form.

4.2.2 Characteristic of Corrosivity

Reference: WAC 173-090(6)

A corrosive waste must possess one of the following characteristics:

- It is aqueous and has a pH<2 or >12.5
- Solids or semi-solids, when mixed with an equal amount of water, produces a solution having an applicable pH (Ecology).
- Corrodes steel at a rate of >0.25 in/yr (6.35mm) @ 130F.

A waste which possesses one of the characteristics listed above shall be designated as corrosive waste and D002 or WSC2 shall be entered in the appropriate section of the waste designation form. The WSC2 waste code is a Washington State-only code.

4.2.3 Characteristic of Reactivity

Reference: WAC 173-303-090(7)

A reactive waste must possess one of the following characteristics:

- A cyanide or sulfide bearing waste
- Water reactive waste which reacts violently with water, forms a potentially explosive mixture with water, or generates toxic gases or fumes when mixed with water.
- Unstable waste which readily undergoes violent change without detonation, detonates or explodes under standard temperature and pressure, or detonates or explodes if subjected to heat or initiating source, or is explosive waste.

A waste which possesses one of the characteristics listed above shall be designated as reactive waste and D003 shall be entered in the appropriate section of the waste designation form.

4.2.4 Characteristic of Toxicity

Reference: WAC 173-303-090(8)

The Toxicity Characteristic Leaching Procedure (TCLP) Test Method (40 CFR 261 Appendix II) is used to determine if a chemical has the ability to leach from a compound, mixture, or solution. The leachate is then submitted for analysis to determine concentrations in the extract.

The results of a TCLP analysis are compared to the Toxicity Characteristics List found in WAC 173-303-090(7). If levels from the TCLP analysis are equal to or greater than the values listed in the table, the waste must be designated as a dangerous waste and the corresponding number from the table entered in the appropriate space on the waste designation form.

5.0 Washington State Dangerous Waste Criteria

5.1 Washington State Toxicity

Reference: WAC 173-303-100

For designation of Washington state toxicity, four test methods are used. The methods are fish LC 50, oral rat LD 50, inhalation rat LC 50, and dermal rabbit LD 50. The required reference to determine these doses can be found in the NIOSH Registry of Toxic Effects of Chemical Substances (RTECS). To determine if a chemical is classified as toxic, the toxicity data from RTECS is compared to the Toxic Category as listed in section WAC 173-303-100(5). After determining the toxicity, the Equivalent Concentration must be calculated using the calculation as it appears on the waste designation form. If the calculation is greater than 0.001%, the chemical shall be managed as WT02, dangerous waste. If the EC calculation is greater than 1.0%, the waste shall be managed as WT01 extremely hazardous waste.

5.2 Washington State Persistent Dangerous Waste

Reference WAC 173-303-100(6)

Persistent dangerous waste is divided into two sections, halogenated hydrocarbons (HH) and polycyclic aromatic hydrocarbons (PAH). The definitions for each of these may be found in the definitions section, WAC 173-303-040. Persistent waste shall be compared to the table as listed in WAC 173-303-100(6) to determine the appropriate waste number, WP01 for EHW, WP02 for DW, and WP03 for PAH. The applicable waste number shall be added to the waste designation form.

5.3 Process Knowledge

Reference WAC 173-303-300

If a detailed analysis of the waste is not needed because there is sufficient process knowledge available to designate the waste, a justification that process knowledge was used as the basis for the waste designation shall be included on the waste management designation form. Process knowledge includes Material Safety Data Sheets, engineering calculations and material balances, or other available generator's knowledge of the waste.

Attachment B

CleanHarbors ENVIRONMENTAL SERVICES

WASTE MATERIAL PROFILE SHEET

Clean Harbors Profile No. CH304338

A. GENERAL INFORMATION

GENERATOR EPA ID #/REGISTRATION # *WAD990928402* GENERATOR NAME: *Areva NP*
GENERATOR CODE (Assigned by Clean Harbors) *AR1688* CITY *Richland* STATE/PROVINCE *WA* ZIP/POSTAL CODE *99354*
ADDRESS *2101 Horn Rapids Road* PHONE:

CUSTOMER CODE (Assigned by Clean Harbors) *AR1688* CUSTOMER NAME: *Areva NP*
ADDRESS *2101 Horn Rapids Road* CITY *Richland* STATE/PROVINCE *WA* ZIP/POSTAL CODE *99354*

B. WASTE DESCRIPTION

WASTE DESCRIPTION: *AREVA Profile*

PROCESS GENERATING WASTE (Please provide detailed description of process generating waste)

C. PHYSICAL PROPERTIES (at 25C or 77F)

PHYSICAL STATE
- SOLID WITHOUT FREE LIQUID
- POWDER
- MONOLITHIC SOLID
- LIQUID WITH NO SOLIDS
- LIQUID-SOLID MIXTURE
  - % FREE LIQUID
  - % SETTLED SOLID
  - % TOTAL SUSPENDED SOLID
- SLUDGE
- GAS/AEROSOL

NUMBER OF PHASES/LAYERS: 1 2 3

% BY VOLUME (Approx.): TOP *0.00*, MIDDLE *0.00*, BOTTOM *0.00*

VISCOSITY (if liquid present)
- 1 - 100 (e.g. WATER)
- 101 - 500 (e.g. MOTOR OIL)
- 501 - 10,000 (e.g. MOLASSES)
- > 10,000

COLOR

ODOR
- NONE
- MILD
- STRONG

Describe

BOILING POINT °F (°C)
- <= 95 (<=35)
- 96 - 100 (35-38)
- 101 - 129 (38-54)
- >= 130 (>54)

MELTING POINT °F (°C)
- < 140 (<60)
- 140-200 (60-93)
- > 200 (>93)

TOTAL ORGANIC CARBON
- <= 1%
- 1-9%
- >= 10%

FLASH POINT °F (°C)
- < 73 (<23)
- 73 - 100 (23-38)
- 101 - 140 (38-60)
- 141 - 200 (60-93)
- > 200 (>93)

Actual

pH
- <= 2
- 2.1 - 6.9
- 7 (Neutral)
- 7.1 - 12.4
- >= 12.5

Actual

SPECIFIC GRAVITY
- < 0.8 (e.g. Gasoline)
- 0.8-1.0 (e.g. Ethanol)
- 1.0 (e.g. Water)
- 1.0-1.2 (e.g. Antifreeze)
- > 1.2 (e.g. Methylene Chloride)

ASH
- < 0.1
- 0.1 - 1.0
- 1.1 - 5.0
- 5.1 - 20.0
- > 20
- Unknown

Actual

BTU/LB (MJ/kg)
- < 2,000 (<4.6)
- 2,000-5,000 (4.6-11.6)
- 5,000-10,000 (11.6-23.2)
- > 10,000 (>23.2)

Actual

VAPOR PRESSURE (for liquids only) mm Hg

D. COMPOSITION (List the complete composition of the waste, include any inert components and/or debris. Ranges for individual components are acceptable. If a trade name is used, please supply an MSDS. Please do not use abbreviations.)

Chemical	MIN	--	MAX	UOM

ANY METAL OBJECTS PRESENT? YES NO

If yes include dimension:

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E. CONSTITUENTS - Are these values based on testing or knowledge? ☑ Knowledge Testing
If constituent concentrations are based on analytical testing, analysis must be provided. If based on knowledge, basis of knowledge must be provided below.

RCRA	REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL ppm
D004	ARSENIC	5.0		
D005	BARIUM	100.0		
D006	CADMIUM	1.0		
D007	CHROMIUM	5.0		
D008	LEAD	5.0		
D009	MERCURY	0.2		
D010	SELENIUM	1.0		
D011	SILVER	5.0		
	VOLATILE COMPOUNDS			
D018	BENZENE	0.5		
D019	CARBON TETRACHLORIDE	0.5		
D021	CHLOROBENZENE	100.0		
D022	CHLOROFORM	6.0		
D028	1,2-DICHLOROETHANE	0.5		
D029	1,1-DICHLOROETHYLENE	0.7		
D035	METHYL ETHYL KETONE	200.0		
D039	TETRACHLOROETHYLENE	0.7		
D040	TRICHLOROETHYLENE	0.5		
D043	VINYL CHLORIDE	0.2		
	SEMI-VOLATILE COMPOUND			
D023	o-CRESOL	200.0		
D024	m-CRESOL	200.0		
D025	p-CRESOL	200.0		
D026	CRESOL (TOTAL)	200.0		
D027	1,4-DICHLOROBENZENE	7.5		
D030	2,4-DINITROTOLUENE	0.13		
D032	HEXACHLOROBENZENE	0.13		
D033	HEXACHLOROBUTADIENE	0.5		
D034	HEXACHLOROETHANE	3.0		
D036	NITROBENZENE	2.0		
D037	PENTACHLOROPHENOL	100.0		
D038	PYRIDINE	5.0		
D041	2,4,5-TRICHLOROPHENOL	400.0		
D042	2,4,6-TRICHLOROPHENOL	2.0		
	PESTICIDES AND HERBICIDES			
D012	ENDRIN	0.02		
D013	LINDANE	0.4		
D014	METHOXYCHLOR	10.0		
D015	TOXAPHENE	0.5		
D016	2,4-D	10.0		
D017	2,4,5-TP (SILVEX)	1.0		
D020	CHLORDANE	0.03		
D031	HEPTACHLOR (AND ITS EPOXIDE)	0.008		

OTHER METALS	MIN	MAX	UOM
ALUMINUM			
ANTIMONY			
BERYLLIUM			
CALCIUM			
COPPER			
MAGNESIUM			
MOLYBDENUM			
NICKEL			
POTASSIUM			
SILICON			
SODIUM			
THALLIUM			
TIN			
VANADIUM			
ZINC			
NON METALS			
BROMINE			
CHLORINE			
FLUORINE			
IODINE			
SULFUR			
OTHER NON-METALS			
AMMONIA			
REACTIVE SULFIDE			
CYANIDE-TOTAL			
CYANIDE AMENABLE			
CYANIDE REACTIVE			
OTHER CHEMICALS			
PHENOL			
Total Petroleum Hydrocarbons			

OTHER

HOCs
NONE
< 1000 PPM
>= 1000 PPM

PCBs
NONE
< 50 PPM
>=50 PPM

IF PCBS ARE PRESENT, IS THE WASTE REGULATED BY TSCA 40 CFR 761?
YES NO

ADDITIONAL HAZARDS
DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED?
YES NO (If yes explain)

ASBESTOS	FUMING / SMOKING WASTE	RADIOACTIVE
CFA REGULATED SUBSTANCE	INFECTIOUS, PATHOGENIC OR ETIOLOGICAL AGENT	REDUCING AGENT
DIOXIN	OXIDIZER	SHOCK SENSITIVE
EXPLOSIVE	OSHA REGULATED CARCINOGENS	SPONTANEOUSLY IGNITES WITH AIR
HERBICIDE	PESTICIDE	THERMALLY SENSITIVE
NONE OF THE ABOVE	POLYMERIZABLE	WATER REACTIVE

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F. REGULATORY STATUS

YES ☑ NO USEPA HAZARDOUS WASTE?

YES ☑ NO DO ANY STATE WASTE CODES APPLY?

Texas Waste Code

YES NO IS THIS WASTE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT PER 40 CFR PART 268?

LDR CATEGORY
VARIANCE INFO

YES NO IS THIS A UNIVERSAL WASTE?

YES NO IS THIS A WASTEWATER PER 40 CFR PART 268.2?

YES NO IF ANY WASTE CODES D001, D002, D003 (OTHER THAN REACTIVE CYANIDE OR REACTIVE SULFIDE), D004-D011, D012-D017 NON-WASTEWATERS, OR D018 - D043 APPLY, ARE ANY UNDERLYING HAZARDOUS (UHCs) PRESENT ABOVE UNIVERSAL TREATMENT STANDARDS (UTS)?

YES NO DOES TREATMENT OF THIS WASTE GENERATE A F006 OR F019 SLUDGE?

YES NO IS THIS WASTE SUBJECT TO CATEGORICAL PRETREATMENT DISCHARGE STANDARDS?

IF YES, SPECIFY POINT SOURCE CATEGORY LISTED IN 40 CFR PART 401

YES NO IS THIS WASTE REGULATED UNDER THE BENZENE NESHAP RULES? (IS THIS WASTE FROM A CHEMICAL MANUFACTURING, COKE BY-PRODUCT RECOVERY, OR PETROLEUM REFINERY PROCESS?)

IF YES, IS THE GENERATOR'S TOTAL ANNUAL BENZENE >= 10 MEGAGRAMS? YES NO

YES NO DOES THIS WASTE CONTAIN VOC'S IN CONCENTRATIONS >=500 PPM?

YES NO DOES THE WASTE CONTAIN GREATER THAN 20% OF ORGANIC CONSTITUENTS WITH A VAPOR PRESSURE >= 3KPA (.044 PSIA)?

YES NO DOES THIS WASTE CONTAIN AN ORGANIC CONSTITUENT WHICH IN ITS PURE FORM HAS A VAPOR PRESSURE GREATER THAN 77 KPa (11.2PSIA)?

YES NO IS THIS CERCLA REGULATED (SUPERFUND) WASTE ?

YES NO IS THIS WASTE REGULATED UNDER THE OZONE DEPLETING SUBSTANCE ACT FOR ONTARIO?

G. DOT/TDG INFORMATION

DOT/TDG PROPER SHIPPING NAME

H. TRANSPORTATION REQUIREMENTS

ESTIMATED SHIPMENT FREQUENCY ONE TIME WEEKLY MONTHLY QUARTERLY YEARLY OTHER

IF BULK LIQUID OR BULK SOLID PLEASE INDICATE THE EXPECTED NUMBER OF LOADS PER SHIPPING FREQUENCY.

CONTAINERIZED

0-0 CONTAINERS/SHIPMENT

STORAGE CAPACITY

CONTAINER TYPE:
- CUBIC YARD BOX
- PALLET
- TOTE TANK
- OTHER

DRUM SIZE

CONTAINER MATERIAL
- STEEL
- FIBER
- PLASTIC
- OTHER

BULK LIQUID

GALLONS/SHIPMENT *0 Min -0 Max* GAL

FROM TANKS, TANK SIZE GAL

FROM DRUMS

VEHICLE TYPE:
- VAC TRUCK
- TANK TRUCK
- RAILROAD TANK CAR

CHECK COMPATIBLE STORAGE MATERIALS

STEEL | STAINLESS STEEL
RUBBER LINED | FIBERGLASS LINED
DERAKANE
OTHER

BULK SOLID *0 - 0*

SHIPMENT UOM TON YARD
PER SHIPMENT: LBS MAX
STORAGE CAPACITY TON/YD

VEHICLE TYPE
- DUMP TRAILER
- ROLL OFF BOX
- INTERMODAL ROLLOFF BOX
- CUSCO/VACTOR
- OTHER

I. SPECIAL REQUEST

SPECIFIC DISPOSAL RESTRICTIONS OR REQUESTS

SPECIAL WASTE HANDLING REQUIREMENTS

OTHER COMMENTS OR REQUESTS

J. BIENNIAL / ANNUAL REPORTING INFORMATION

SIC CODE *1629* SOURCE CODE FORM CODE

K. SAMPLE STATUS YES SAMPLED BY DATE SAMPLED WHERE SENT

REPRESENTATIVE SAMPLE HAS BEEN SUPPLIED NO

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If Clean Harbors discovers a discrepancy during the approval process, Generator grants Clean Harbors the authority to amend the profile, as Clean Harbors deems necessary, to reflect the discrepancy.

AUTHORIZED SIGNATURE NAME (PRINT) TITLE DATE

Attachment C
Waste Data Table

Wastes Generated	Process Generating Waste	Basis for Hazard Classification	Waste Code(s)	Hazardous Properties of Waste	Chemical Constituents/ Analytical Parameters	WMD Number	LDR Treatment	
							Treatment standard	Treatment Facility
Solvent Extraction Raffinate	Solvent Extraction/ Uranium purification	Laboratory Analysis	D002	Corrosive	nitric acid ammonium fluoride calcium fluoride sodium nitrate aluminum nitrate tributylphosphate	SPC 93-01	Deactivation	Ammonia Recovery Facility (ARF) POTW
Solvent Extraction Carbonate Wash	Solvent Extraction/ Uranium Purification	Laboratory Analysis	WT02	State-Toxic	ammonium fluoride sodium fluoride aluminum nitrate tributylphosphate	SPC 93-02	N/A	ARF, POTW
Solvent Extraction Acid Wash	Solvent Extraction/ Uranium Purification	Laboratory Analysis	D002	Corrosive	sodium nitrate nitric acid tributylphosphate	SPC 93-03	Deactivation	ARF, POTW
Solvent Extraction scrubber waste	Solvent Extraction/ Uranium purification	Laboratory Analysis, field analysis	D002	Corrosive	nitric acid	SPC 94-74	Deactivation	ARF, POTW
ADU Scrap Conversion	Scrap "Wet" uranium conversion	Laboratory Analysis	WT02	State-Toxic	ammonium nitrate ammonium hydroxide	SPC 93-12	N/A	ARF, POTW
X-ray fixer solution	Metallurgy Lab X-ray film developing	Laboratory Analysis	WT02	State-Toxic	ammonium thiosulfate	SPC 93-71	N/A	POTW
ARF Effluent	Ammonia Recovery Facility operation	Laboratory Analysis	WT02	State-Toxic	ammonium fluoride sodium fluoride sodium nitrate calcium nitrate aluminum nitrate	SPC 94-68	N/A	POTW
I/X Metals Removal Filter Cake	I/X metals removal cake for disposal	Laboratory Analysis	D006	Toxic	cadmium	SPC 95-70	0.11 mg/l	Offsite TSD

Wastes Generated	Process Generating Waste	Basis for Hazard Classification	Waste Code(s)	Hazardous Properties of Waste	Chemical Constituents/ Analytical Parameters	WMD Number	LDR Treatment	
							Treatment standard	Treatment Facility
I/X Regeneration	I/X Column uranium removal	Laboratory Analysis	WT02	State-Toxic	ammonium carbonate	SPC 94-70 B	N/A	POTW
DIW regeneration effluent	Plant deionized water facility	Laboratory Analysis	D002	Corrosive	sodium hydroxide sulfuric acid	SPC 94-71	Deactivation	PBR, POTW
MURS effluent	ADU Conversion wastes	Laboratory Analysis	WT02	State-toxic	ammonium fluoride ammonium nitrate ammonium hydroxide	SPC 94-84	N/A	ARF feed
Laboratory waste	Plant analytical support	Process knowledge	WT02	State-toxic	sodium fluoride	SPC 96-3	N/A	ARF, POTW
Dry Conversion Facility Effluent	Dry Conversion facility waste effluent	Laboratory Analysis	WT02	State-toxic	sodium fluoride	SPC 94-75	N/A	POTW
Solvent Rags (satellite accumulation)	Miscellaneous degreasing activities	Process knowledge, MSDS sheets	F003 F005 D035	Toxic	xylene acetone toluene MEK	SPC 93-56	30 mg/l 160 mg/l 10 mg/l 33 mg/l	Offsite TSD, DWSF if mixed waste
Solid Paint Waste (satellite accumulation)	Facility painting operations	Process knowledge, MSDS	F003, F005	Ignitable, Toxic	xylene acetone toluene MEK	SPC 94-49	30 mg/l 160 mg/l 10 mg/l 33 mg/l	Offsite TSD, DWSF if mixed waste
Liquid Paint Waste (satellite accumulation)	Facility painting operations	Process knowledge, MSDS	F003, F005, D035	Ignitable, Toxic	xylene acetone toluene MEK	SPC 94-49	30 mg/l 160 mg/l 10 mg/l 33 mg/l	Offsite TSD, DWSFif mixed waste
Freon contaminated filters/sludge	Historic dry cleaning operation	Process knowledge, laboratory analysis	F002	Toxic	Freon	SPC 93-48	30 mg/l	DWSF, mixed waste

Wastes Generated	Process Generating Waste	Basis for Hazard Classification	Waste Code(s)	Hazardous Properties of Waste	Chemical Constituents/ Analytical Parameters	WMD Number	LDR Treatment	
							Treatment standard	Treatment Facility
Nitric acid contaminated "wet" waste (satellite accumulation)	Uranium contaminated waste (mops, filters, rags, etc.) from operations	Process knowledge, field analysis, laboratory analysis	WSC2, WT02	State-only corrosive and toxic	nitric acid	SPC 94-43	N/A	DWSF, Offsite TSD
Ammonia, fluoride contaminated waste (satellite accumulation)	Uranium contaminated waste (mops, filters, rags, etc.) from operations	Laboratory analysis	WT02	State-only toxic	ammonia fluoride	SPC 94-44	N/A	DWSF, Offsite TSD
HEPA and Prefilters (satellite accumulation)	Room air filters for radionuclide control	Laboratory analysis, process knowledge	WT02	State-only toxic	ammonia fluoride nitrates	Location dependent	N/A	Offsite TSD
Lead	Lead collected in satellite containers	Process knowledge	D008	Toxic	lead	WMD 09-07	0.75 mg/l	Offsite TSD
Safety-Kleen petroleum naptha solvent	Cleaning and degreasing in Safety-Kleen supplied equipment	MSDS sheets, vendor information	D039	Toxic	tetrachloroethylene	SPC 00-27	6.0 mg/l	Safety-Kleen
Safety-Kleen immersion cleaner	Cleaning and degreasing in Safety-Kleen supplied equipment	MSDS sheets, vendor information	D006, D008, D039, D040	Toxic	cadmium lead tetrachloroethylene trichloroethylene	SPC 00-27	0.11 mg/l 0.75 mg/l 6.0 mg/l 6.0 mg/l	Safety-Kleen
Hydrofluoric acid contaminated rags (satellite accumulation)	Wiping off HF download fittings	Process knowledge	WSC2, WT02	State-only Corrosive	hydrofluoric acid	SPC 96-18	N/A	Offsite TSD

Wastes Generated	Process Generating Waste	Basis for Hazard Classification	Waste Code(s)	Hazardous Properties of Waste	Chemical Constituents/ Analytical Parameters	WMD Number	LDR Treatment	
							Treatment standard	Treatment Facility
Sodium hydroxide contaminated waste	Maintenance and cleanup of sodium hydroxide contaminated equipment	Process knowledge, field testing	WSC2	State-only Corrosive	sodium hydroxide	SPC 97-66	N/A	Offsite TSD
Calcium fluoride filter media	Scrubber on hydrofluoric acid storage tanks	Process knowledge	WT02	State-only Toxic	calcium fluoride	SPC 97-58	N/A	Offsite TSD
Isopropyl Alcohol (satellite accumulation)	Miscellaneous cleaning and degreasing	MSDS sheet	D001	Ignitable	isopropanol	SPC 93-52	CMBST	Offsite TSD
Component pickle solution	Component Shop pickling operation	Laboratory analysis, process knowledge	D002	Corrosive	nitric acid aluminum nitrate	SPC 93-08	Deactivation	Offsite TSD
Wax stripper solution (satellite accumulation)	Plant wide floor stripping	MSDS sheet, field analysis	WT02	State-only toxic	ethylene glycol monobutyl ether	SPC 93-23	N/A	Offsite TSD
Mercury Contaminated Filter	Fluorescent tube crushing	Laboratory analysis	D009	Toxic	Mercury	WMD 01-29	Meet 268.48 standards	Offsite TSD
Laboratory Metal Standards	Laboratory equipment calibration	Process knowledge	RCRA metals	Toxic, Corrosive	RCRA metals	SPC 92-24	Meet 268.48 standards	Offsite TSD

Attachment D
Suggested Sampling Equipment for Particular Waste Types and Locations

WASTE LOCATION				
Waste Type	**Drums**	**Tanks**	**Soil**	**Process Sample Ports**
Free-flowing liquids and slurries	Coliwasa	Coliwasa Dipper Weighted bottle	-------	Sample bottle
Sludges	Thief Scoop	Thief Scoop	-----	-----
Sand, Soil	Auger Scoop	-----	Auger Scoop	-----
Large grained solids	Auger	-----	Auger	-----
Powders or Granules	Thief Scoop	Thief Scoop	Thief Scoop	-----

Attachment E

Waste Management Direction

AREVA	Waste Management Direction Generator/Traffic Copy

Waste Stream: AREVA - WAP Attachment
Waste Generation: [x] Batch [ ] Routine
WMD Number: 00
Satellite Number: 00

Waste Category

Municipal Waste	[ ]
Dangerous Waste	[ ]
Low Level Radioactive Waste	[ ]
High Count Radioactive Waste	[ ]
Mixed Waste = Dangerous + Radioactive	[ ]

Disposition

Satellite Accumulation	[x]
Dangerous Waste Pad	[ ]
US Ecology	[ ]
	[x]

Disposal / Management of Waste
Attachment for Waste Analysis Plan.

Applicable Procedure:

Procedure Revision Required	[ ] Yes	[x] No
Inventory Sheet Required	[ ] Yes	[x] No

Assay Method:	N/A
Drum Assay	[ ]
Chemical Assay	[ ]
HST Survey	[ ]

Traffic and Warehousing Information

Proper Shipping Name:
UN No. Packing Group: Hazard Class: RQ:
Container Type: [ ] Plastic [ ] Steel Container Size: [ ] Drum Liner
DOT Labels Required: [ ] Flammable [ ] Corrosive [ ] Poison [ ] Oxidizer Other:

Required Labels/Markings

[ ] Toxic		WT02 (DW) [ ]	WT01 (EHW) [ ]	
[ ] Persistent		WP02 (DW) [ ]	WP01 (EHW) [ ]	WP03 (DW) [ ]
[ ] Ignitable	D001			
[ ] Corrosive	D002	[ ] WSC2 [ ]		
[ ] Reactive	D003			

[ ] Hazardous Waste
[ ] Mixed Waste
[ ] Radioactive Waste Transport Markings (Radioactive Material, LSA, n.o.s.)
[ ] TCLP Toxicity - TCLP Constituent:
[ ] Discarded Chemical -
[ ] Source Waste - [ ] Other:
[ ] QC Release [ ] Accumulation Start Date

Waste Processing Technical Support: Date

Environmental Engineer, EHSL: Date

Attachment F

Environmental Sample Label

EAGLE PICHER

ENVIRONMENTAL SCIENCE
& TECHNOLOGY DEPT.
200 B.J. TUNNELL BLVD., MIAMI, OK 74354
1-800-331-7425

Specially Cleaned Sample Container

Lot #:

DATE:	TIME:	COLLECTED BY:

SAMPLING SITE:

SAMPLE TYPE:
☐ Grab ☐ Composite ☐ Other

TESTS REQUIRED:

PRESERVATIVE

Attachment G

Chain-of-Custody Record

AREVA

AREVA NP INC.

2101 Horn Rapids Road
Richland, WA 99354

Customer contact:			Project ID	Order ID:	Requested Tests
Business name:					
Address:				Number of bottles	
Phone:		FAX:			
Regulatory Authority:	NPDES: ☐ Solid waste: ☐	Drinking water: ☐ Other: ☐			

Lab Use Only	Customer Sample ID (Unique identifier or code)	Collection Date	Collection Time	Matrix	Number of bottles											Comments

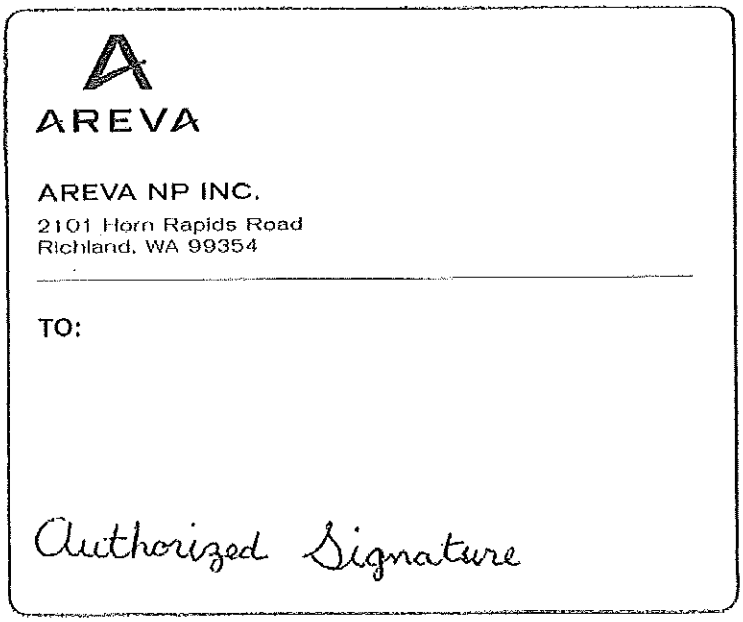
Signature	Date/Time	Signature	Sample Conditions at receipt:
Collected/ Relinquished by:		Received by:	Temperature (circle): Ambient Cold Frozen
Relinquished by:		Received by:	Containers intact/Lids tight: ☐ VOC vials without headspace: ☐ Labels match custody: ☐
Relinquished by:		Signature	Date/Time
Laboratory receipt:		Pre-log storage:	

Page ______ of ______

Rev 03-14-02

Attachment H

Custody Seal



Attachment I
Summary of Sample Preservatives, Holding Times, and Analytical Methods

Summary of Sample Preservatives, Holding Times, and Analytical Methods				
Analyte	**USEPA Method**	**Container**	**Preservative (1)**	**Holding Time**
Ammonia as Nitrogen	350.3	250 ml polyethylene or glass	H2SO4 to pH<2 (preserve liquids only) cool 4 C	28 days
Fluoride	300.0	250 ml polyethylene or glass	Cool 4 C	28 days
Nitrate as Nitrogen	300.0	250 ml polyethylene or glass	H2SO4 to pH<2 (preserve liquids only) cool 4 C	28 days
pH	NA	Plastic or Glass	NA	1 day
TCLP Metals	1311, 6000 or 7000 series	250 ml polyethylene or glass	Cool 4 C	180 days, mercury 28 days
TCLP Organics	1311, 8021C, 8260B, 8270C	Liquids 40 mm Glass VOA Vials, solids 250 ml glass	Cool 4 C	14 days to extraction + 14 days for final analysis
Semivolatile Organics	8270 C	Liquids 40 mm glass VOA vials, solids 250 ml glass	Cool 4 C	14 days
Volatile Organics	8260 B	Liquids 40 mm glass VOA vials, solids 250 ml glass	Cool 4 C	14 days

(1) "Cool 4 C" indicates that the sample must be cooled to 4 degrees centigrade
H2SO4 Sulfuric Acid
ml Milliliter
NA Not Applicable
USEPA U. S. Environmental Protection Agency

Attachment J

CleanHarbors
ENVIRONMENTAL SERVICES, INC.

Land Disposal Restriction Notification Form

Page 1 of 1

Print Date: 12/13/2007

MANIFEST INFORMATION

Generator: Areva NP
Address: 2101 Horn Rapids Road
Richland, WA 99354
EPA ID#: W A D 9 9 0 8 2 8 4 0 2

Manifest No
001846068FLE
Sales Order No: DI1713920

LINE ITEM INFORMATION

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category:
1	1	CH277916	NON- WASTEWATER	2 ; This is subject to LDR.

EPA Waste Codes: D001
EPA Waste Subcategory: Ignitables, except High TOC Liquids

Line Item:	Page No:	Profile No:	Treatability Group:	LDR Disposal Category:
2	1	CH278606	NON- WASTEWATER	2 ; This is subject to LDR.

EPA Waste Codes: D001
EPA Waste Subcategory: Ignitables, except High TOC Liquids

Certification

Applies to Manifest Line Items

Pursuant to 40 CFR 268.7(a), I hereby notify that this shipment contains waste restricted under 40 CFR Part 268 — 1 2

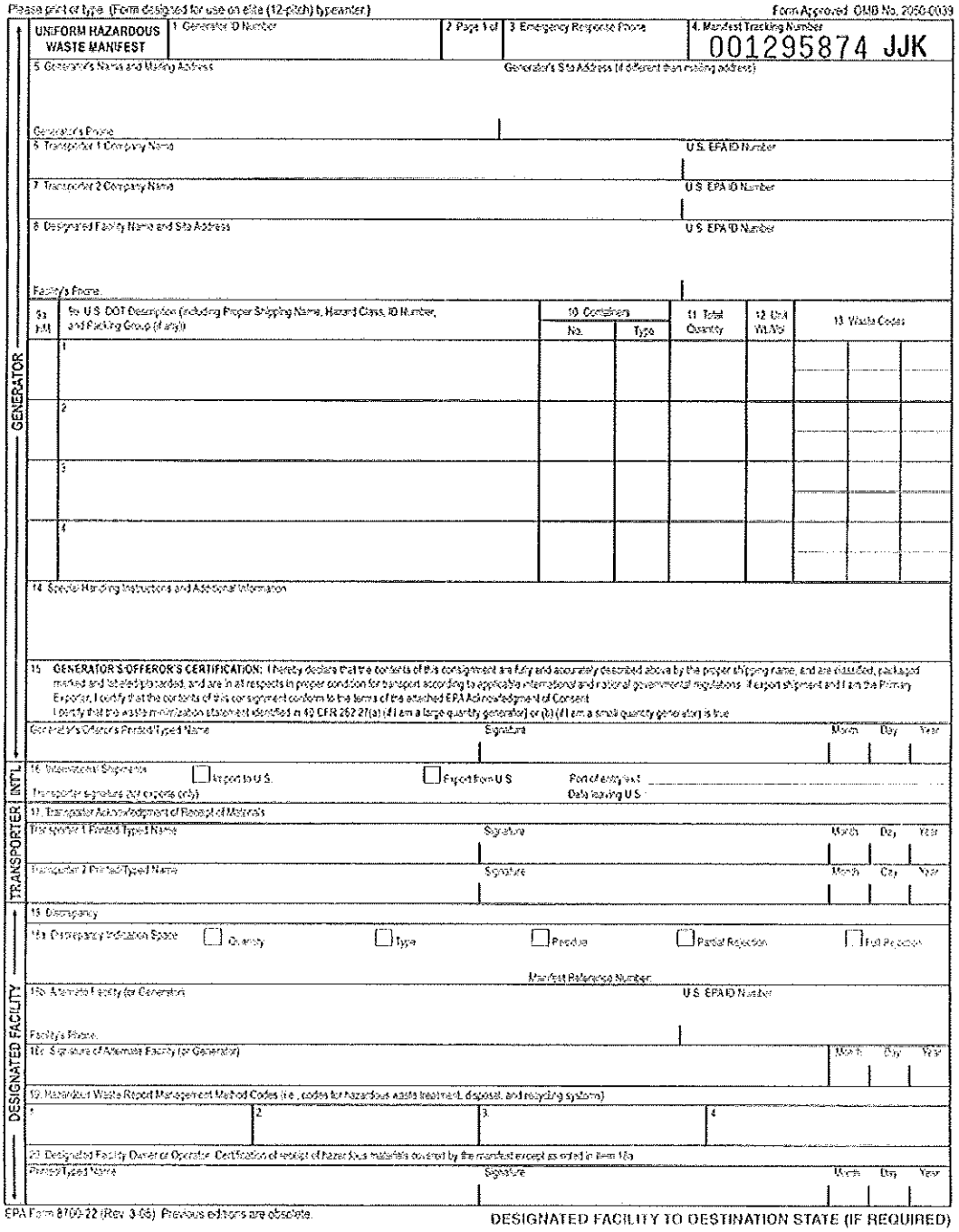
This waste is not restricted as specified in 40 CFR 268 Subpart D. — 3

Waste analysis data, where available, is attached

Signature: _____ Print Name: _____

Title: _____ Date: _____

Attachment K



Please print or type. (Form designed for use on elite (12-pitch) typewriter)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator ID Number
2. Page 1 of
3. Emergency Response Phone
4. Manifest Tracking Number: 001295874 JJK

5. Generator's Name and Mailing Address
Generator's Site Address (if different than mailing address)
Generator's Phone:

6. Transporter 1 Company Name — U.S. EPA ID Number

7. Transporter 2 Company Name — U.S. EPA ID Number

8. Designated Facility Name and Site Address — U.S. EPA ID Number
Facility's Phone:

9a HM	9b U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
	1							
	2							
	3							
	4							

14. Special Handling Instructions and Additional Information

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.
Generator's/Offeror's Printed/Typed Name — Signature — Month / Day / Year

GENERATOR

16. International Shipments — Import to U.S. — Export from U.S. — Port of entry/exit: — Date leaving U.S.:
Transporter signature (for exports only)

TRANSPORTER / INTL

17. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name — Signature — Month / Day / Year
Transporter 2 Printed/Typed Name — Signature — Month / Day / Year

18. Discrepancy
18a. Discrepancy Indication Space — Quantity — Type — Residue — Partial Rejection — Full Rejection
Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number
Facility's Phone:

18c. Signature of Alternate Facility (or Generator) — Month / Day / Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)
1 | 2 | 3 | 4

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a
Printed/Typed Name — Signature — Month / Day / Year

DESIGNATED FACILITY

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

AREVA NP Inc.

E06 Environmental Protection
E06-04 Miscellaneous Reports

E06-04-006
Version 4.0

Waste Analysis Plan

Date (GMT)	Signed by
09/10/2009 20:14:48	Perryman, James
Authorization/Title	Document Author

09/10/2009 21:28:41	Maas, Loren
Authorization/Title	Licensing & Compliance Manager

09/10/2009 21:39:56	Krzan, Kaela
Authorization/Title	Document Control Approval