



## ECOLOGY SERVICES, INC. STATEMENT OF QUALIFICATIONS

### INTRODUCTION

Ecology Services, Inc. (ESI) was founded in 1989 to provide high quality radiological support services to companies and institutions in the Northeastern United States that utilize radioactive materials.

Between 1992 and 2005, ESI was contracted to manage all of the radioactive and mixed waste generated at the National Institute of Health (NIH) in Bethesda, Maryland. The NIH is one of the largest research institutions in the world and ESI provided full-time support that included scheduling and performing waste pickups at individual laboratories; sample, analysis, and characterization of wastes; packaging for disposal, operation of the mixed waste treatment system; sanitary disposal of qualifying liquids; emergency response; and the overall operation of the waste management facility.

In 2011, ESI launched an aggressive plan to expand its radiological services capabilities to encompass the United States resulting in the January 2012 opening of an office in Knoxville, Tennessee. In March 2012, ESI received a radioactive materials license authorizing waste storage and processing at ESI's warehouse in Baltimore, Maryland.

Recognizing the need for environmentally friendly solutions for non-radioactive refuse, Ecology Services Refuse and Recycling, LLC (ESRR) was formed in 1996 to focus on residential and municipal waste collection and recycling. ESSR is a conscientiously managed organization centered on courteous customer-oriented personalized refuse removal needs.

Ecology Services Municipal Operations, LLC (ESMO) was instituted to provide solid waste collection services to Montgomery County, Maryland. Utilizing over fifty trucks, ESMO provides solid waste collection and recycling services to five service areas awarded in 2002 and 2003.

The remainder of this Statement of Qualifications (SOQ) will detail ESI's capabilities and qualifications for supporting the needs of our customers that use radioactive materials.

### RADIOACTIVE AND MIXED WASTE DISPOSAL SERVICES

ESI's Radioactive Waste Brokerage division is staffed with personnel who have many years of experience with low-level radioactive and mixed waste transportation, processing, and disposal. This experience ensures that our customers' wastes will be handled in full compliance with all regulations and in the most cost-effective manner available.

- **Michele Patterson, Manager of Brokerage Services** – Responsible for day to day operations and overall customer support. Available to answer specific waste questions, offer advice on processing options, assist with DOT, NRC, & EPA compliance issues, schedule and coordinate waste pickups, and prepare quotations.
- **Paul Hickman, Mixed Waste Manager** – Provides customers with mixed waste processing options and quotations. Assists customers with completion and approval of mixed waste profiles. Advises customers on packaging of mixed waste to ensure most cost-effective option for processing.



## ECOLOGY SERVICES, INC. STATEMENT OF QUALIFICATIONS

- **David DeLaCruz, Logistics Manager** – Responsible for properly manifesting and tracking all LLRW and mixed waste shipped by ESI’s brokerage group. Schedules and arranges for delivery of waste to the appropriate waste processing facility. Maintains an inventory of all waste stored in our facility to ensure that no license requirements are exceeded.
- **Tyler Reynolds, Customer Service Manager** – Assists with scheduling waste pickups and preparing quotations and invoices.
- **Greg Keck, Waste Operations Manager/Broker** – Responsible for the compliant operation of ESI’s licensed warehouse in Baltimore, Maryland. Assists with pickup and delivery of radioactive and mixed waste from customer locations throughout the eastern United States.
- **Alfonso Spells, Broker/Driver** – Assists our Waste Operations Manager with the pickup and delivery of radioactive and mixed waste from various customer locations across the US.
- **Timothy Osborne, Radiation Safety Officer/Certified Health Physicist (CHP)** – Tim has over 35 years’ experience as a radiation safety officer and health physicist. He has over 15 years’ experience providing radiation safety training and related R&D activities for the Federal Government

### Waste Processing & Disposal Options

ESI strives to maintain contractual relationships with all properly licensed viable waste processing/disposal providers in the United States. When we are contacted to assist a customer with disposal, we evaluate each waste stream and determine the options available. We then present the choices, their costs and benefits, and allow the customer to determine which option is best suited to them. Some decisions may be made solely on cost while others may choose an option that they perceive to present a lower long term risk, i.e. thermal treatment.

Disposal and processing options that may be offered by ESI are provided in the table below:

<b>Disposal/Processing Facility</b>	<b>Location</b>	<b>Service Provided</b>
EnergySolutions	Clive, UT	Disposal of Class A LLRW and Mixed Waste
EnergySolutions	Barnwell, SC	Disposal of Class A, B, and C LLRW for the Atlantic Compact
US Ecology	Richland, WA	Disposal of Class A, B, and C LLRW for the Northwest and Rocky Mountain Compacts Disposal of NORM/NARM
WCS	Andrews, TX	Disposal of Class A, B, and C LLRW for TX Compact Disposal of Class B & C LLRW for out of compact generators with import authorization Disposal of NORM, NRC unimportant quantities, and smoke detectors



## ECOLOGY SERVICES, INC. STATEMENT OF QUALIFICATIONS

US Ecology	Grand View, ID	Disposal of NORM/NARM, NRC unimportant quantities, exempt smoke detectors, high volume low activity remediation waste
EnergySolutions	Oak Ridge, TN	Supercompaction; incineration of DAW, aqueous liquids, oil, animal/biological waste, and non-RCRA scintillation vials; and metal processing
Toxco	Oak Ridge, TN	Supercompaction, small sealed source processing, aqueous liquid processing, lead recycling, metal processing, BSFR
Perma-Fix Northwest	Richland, WA	Supercompaction; thermal treatment of DAW, aqueous liquids, oil, animal & biological waste
Perma-Fix	Gainesville, FL	Scintillation vials, mixed waste
Perma-Fix DSSI	Kingston, TN	Mixed waste
NSSI	Houston, TX	Scintillation vials, mixed waste
Alaron Nuclear Services	Wampum, PA	Sealed source & NORM disposal

Each of the disposal/processing options shown in the table has its own specific acceptance criteria. No one processor can handle every waste type. ESI personnel have worked closely with each of the listed facilities and fully understand what each can and cannot do. We use this knowledge to offer our customers the best possible solutions for their low-level and mixed radioactive wastes.

### **Rigid Training Standards**

All ESI brokerage personnel participate in an extensive training program to ensure they are knowledgeable of all pertinent regulatory requirements as well as waste disposal/processor capabilities and waste acceptance criteria. ESI training exceeds the standards established by the Department of Transportation (DOT) in 49CFR 172 Subpart H. Training is conducted on an annual basis or anytime there is a significant change to the regulations applicable to transportation or disposal.

All ESI brokerage personnel are trained and demonstrate a thorough understanding of the following:

- DOT incident reporting
- The use of the hazardous materials table
- Reportable quantities
- Shipping paper requirements
- Package marking
- Labeling
- Vehicle placarding
- Security plan and shipment security
- Emergency response information



## **ECOLOGY SERVICES, INC. STATEMENT OF QUALIFICATIONS**

- DOT hazardous material classification
- Radioactive material excepted packages
- Radioactive Type A shipment requirements
- Low specific activity shipments
- Surface contaminated object shipments
- Vehicle and package radiation limits
- Vehicle and package contamination limits
- NRC uniform radioactive waste manifest requirements
- NRC 10 CFR 61 waste classification
- Radioactive material package types
- EPA hazardous waste determination and coding
- EPA manifesting requirements
- EPA hazardous waste transporter requirements
- Waste disposal/processor acceptance criteria

### **Superior Customer Service**

ESI's brokerage division provides superior customer service. When you call our Tennessee office you will be connected to experienced knowledgeable people who will respond to your questions and requests in a timely manner.

Our standard waste pickup services include the preparation of all NRC 540, 541, and 542 Uniform Low-Level Radioactive Waste Manifest forms. If your shipment contains mixed waste, our staff will complete all required waste profiles and the EPA Uniform Hazardous Waste Manifest and accompanying Landfill Disposal Restriction (LDR) forms. We will schedule the delivery of your waste to the chosen waste processors and complete the shipment pre-notification forms.

When we pick up your waste, one of our trained shippers will be present and will complete a thorough inspection to ensure that the package is in proper condition for shipment. We will apply all required marking and labels. Our shippers will perform radiological surveys to ensure that no DOT radiation or contamination limits are exceeded. The shipment will then be secured in the vehicle to prevent shifting during transport. If placards are required, we will apply them to the vehicle.

ESI utilizes eMWaste™ software to ensure that all shipping documents are accurate. eMWaste™ converts traditional radiological units to SI units as required by DOT and performs all calculations required to verify if the shipment is regulated by DOT as radioactive material, if any container has a DOT Reportable Quantity, and confirms that the activity and radionuclides are correct for the chosen shipping name.



## ECOLOGY SERVICES, INC. STATEMENT OF QUALIFICATIONS

If needed, ESI can perform additional services including on-site waste characterization and waste packaging. These services can be done utilizing ESI's radioactive materials license through reciprocity with the NRC or agreement state where the waste is located.

### Assured Compliance

To ensure that all waste pickups are conducted in full compliance with regulatory requirements, ESI has developed standard operating procedures. All waste pickups are made in strict compliance with these procedures. The following table lists each procedure and what it encompasses:

Procedure	Description
ESI-01 Conduct of Brokerage Operations	Details manifesting, package inspection, marking, labeling, placarding, radiological surveys, loading, bracing, and shipment checklists.
ESI-02 Emergency Response	Specifies immediate reporting requirements for incidents, emergency response telephone number requirements, and emergency response information provided with shipping papers.
ESI-03 Security Plan	Complies with 49 CFR 171 Subpart I requirements. Details when the ESI Security Plan must be engaged. Details specific actions taken by ESI to ensure the security of hazardous materials in transport and at ESI facilities.
ESI-04 Training	Complies with 49 CFR 171 Subpart H requirements. Specifies the minimum training ESI brokers will receive, its frequency, and minimum acceptable knowledge levels.
ESI-05 Waste Acceptance Criteria	Establishes acceptance criteria for standard pricing for LLRW.
ESI-06 Spill Response Plan	Details the actions to be implemented in the event of a spill or release of hazardous materials.
ESI-07 Waste Classification for WCS Disposal	Steps to determine waste classification (Class A, B, and C) for WCS disposal facility.
ESI-08 Waste Characterization	Addresses the steps taken to properly characterize and manage waste.
ESI-09 Quality Assurance/Quality Control	Lists specific criteria that affect quality and how it relates to brokerage activities.
ESI-10 Conduct of Radioactive Material Relocation Operations	Ensures all waste relocation activities performed are fully compliant with DOT, NRC, EPA, and state and local agencies.



## **ECOLOGY SERVICES, INC. STATEMENT OF QUALIFICATIONS**

### **Customer Friendly Pickup Schedules**

To better serve our customers, ESI has established waste pickup schedules within specific geographic regions. At a minimum, our pickups are scheduled to occur at a less than a 90 day frequency to ensure that customers who generate mixed waste can ship the material before they exceed EPA mandated storage limits. Regional scheduling allows ESI to perform multiple customer pickups maximizing transportation efficiency while minimizing costs.

Scheduled regional pickups are conducted in the Northeast, Southeast, Midwest, and West Coast regions of the United States. All customers in these regions are provided an annual calendar with pickup dates for planning purposes. Before a scheduled waste pickup, ESI will e-mail our customers a reminder that we will be in their area so they can begin preparations.

If a customer requires waste removal outside of a scheduled pickup, ESI will work to make the best most cost-effective arrangements possible.

### **ESI Vehicles**

- Sized for congested urban waste pickups
- Lift gate equipped
- Refrigerated for biological pickups
- Equipped with E-track for easy load securement
- Equipped with spill kits and radiological survey instruments
- Properly permitted to transport radioactive and hazardous waste

### **LICENSED SECURE STORAGE FACILITY**

ESI maintains a licensed secure warehouse facility in Baltimore, Maryland. The facility is strategically situated near I-95 and provides ready access to the eastern United States. Our radioactive materials license authorizes storage of low-level radioactive waste for periods of up to one year and allows waste consolidation, repackaging, sealed source encapsulation, compaction, absorption/solidification of liquids, collection and consolidation of tritium exit signs, and the collection and consolidation of smoke detectors. Storage for decay is authorized for radionuclides with half-lives of 88 days or less with storage for up to 2.5 years. The warehouse is surrounded by a security fence and is equipped with a sprinkler fire suppression system, video surveillance, and monitored intruder and fire alarms.

Proper utilization of the warehouse allows ESI to accumulate waste for brief periods of time so we can assemble efficient cost effective shipments of customer waste materials to designated processing/disposal facilities.



## ECOLOGY SERVICES, INC. STATEMENT OF QUALIFICATIONS

### SUPPLEMENTAL INFORMATION

#### Corporate Office

9135 Guilford Road  
Suite 200  
Columbia, MD 21046  
301-362-6700 phone  
301-490-0172 fax

#### Tennessee Office

10427 Hickory Path Way  
Knoxville, TN 37922  
865-766-5873 phone  
865-766-5908

#### Website

<http://www.ecologyservices.com>

#### Administrative Information

Federal Tax ID	52-1633980
DUNS	608010419
Cage Code	06ZQ6