



# **Chlorine Gas Cylinders – Highway 278 Information**

**SRNS-MS-2020-00127**

**Rev. 1**

**July 20, 2020**

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## **Background**

On Wednesday, July 8, 2020, Aiken County Sheriff Department notified the Savannah River Site (SRS) Emergency Operations of a reported smell of chlorine and an off-gassing chlorine container. At 10:51 the SRS's Fire Department was sent to the scene to respond. Two (2) 68.0-kilogram (kg [150-pound {lb}]) cylinders were discovered 60.9 meters (m [200 feet {ft}]) from Highway 278 in a wooded area approximately (~) 1.5-m (5-ft) off Boggy Gut Road (see map). The area where the cylinders were located had ~15.2 centimeters (cm [6 inches {in.}]) of non-flowing water due to recent heavy rainfall. One of the two cylinders, which had degraded, was observed to be off-gassing with the contents released into the air and the rainwater surrounding the cylinders. The other cylinder appeared to be intact (SRS assumed it contains the full 68 kg [150 lbs] of chlorine gas). The area in which the cylinders were discovered was confirmed to be owned by the United States Department of Energy (USDOE). The assumption that the two cylinders were believed to contain or may have contained chlorine gas was based on the markings that could be seen on one of the cylinders and observations by South Carolina Department of Health and Environmental Control (SCDHEC) and the SRS's Fire Department. It is unknown as to who owned these cylinders or how these cylinders came to be located on federal property. An investigation is currently being conducted by Centerra to obtain this information. Based on the chlorine monitoring results performed by SCDHEC and along with visual observations, the cylinder stopped off-gassing and the area was determined to be in a safe configuration by 16:30 on July 8, 2020.

SRS coordinated removal and disposition of the cylinders.

The following actions were taken:

- 1) On July 8, 2020, SRS notified the National Response Center of a chlorine gas spill/release exceeding the 4.5-kg (10-lb) reportable quantity; notifications were also made to SCDHEC-Aiken and Columbia (South Carolina [SC]), United States Environmental Protection Agency (USEPA) and Local Emergency Planning Committee.
  - 2) SRS's Fire Department, Aiken County Sheriff, and SCDHEC-Aiken and Columbia, SC, were on the scene until the cylinder stopped off-gassing. Highway 278 was closed to all traffic until it was confirmed there were no additional releases.
  - 3) The area was barricaded, and a portion of Boggy Gut Road was closed to traffic.
  - 4) Centerra performed hourly rounds from July 8<sup>th</sup>-10<sup>th</sup>, 2020.
  - 5) On July 10, 2020, tarps were placed over the cylinders and standing water was no longer present. Stressed vegetation was observed next to the cylinders.
  - 6) To ensure the safety and security of the area, observation was performed by the SRS's Fire Department personnel every four hours and Centerra sent personnel twice every 12-hour shift.
  - 7) SRS contracted with Clean Harbors to perform the cylinder overpacking, shipping and treatment. Cylinder retrieval, overpacking and shipping was scheduled to take place on or before Thursday, July 16, 2020.
  - 8) SCDHEC-Aiken had been contacted by two local public citizens, and a news story was reported in the Aiken Standard local news media on July 10, 2020.
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- 9) On July 15, 2020, Clean Harbors arrived, recovered the cylinders, overpacked, and transported them to Texas for final disposition. Centerra photographed each cylinder to determine their origin.
  - a. The cylinders did not contain pressure relief valves, was determined to be empty by Clean Harbors, and were shipped as empty cylinders
  - b. Cylinders were surveyed with no radiological contamination detected
- 10) The stamp on one of the cylinders noted last hydrostatic test was 2002. On July 15, 2020, the Site Environmental Protection Coordinator informed the responding SCDHEC-Aiken ERT member via phone that both cylinders were deemed empty, had been removed from Boggy Gut Road and were being transported for disposition
- 11) On July 16, 2020, conducted telecon briefing with the USDOE, USEPA and SCDHEC Federal Facility Personnel. It was determined that no additional action was required after barricade removal.
- 12) SRS is sending this report and waste disposition paperwork from Clean Harbors to USEPA and SCDHEC to formally close out this event. No further action is warranted.

Noted below is a map of the cylinder location as well as pictures from the scene and recovery.

**Map**  
**Close up of Boggy Gut Road and Highway 278 Intersection**



**7/9/2020 Picture of Discovery Location**



**7/9/2020 Picture of Off-Gassing Completed**



**7/10/2020 Boggy Gut Road Barricade**



**7/10/2020 Tarp Placed Over Cylinders**



7/15/20 Cylinder Recovery



7/15/20 Cylinder Overpacks

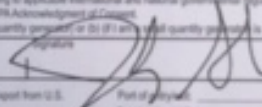
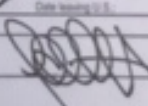


7/15/20 Clean Harbors Manifest for Two Empty Cylinders

50# 2003649700

Form Approved OMB No. 2050-0020

Please print or type. (Form designed for use on site. (12 print) typewriter)

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number <b>SC1890009969</b>	2. Page 1 of 1	3. Emergency Response Phone <b>800.493.3718</b>	4. Manifest Tracking Number <b>011636021 FLE</b>
5. Generator's Name and Mailing Address <b>Savannah River Nuclear Solutions US DoE Bldg 704-348, RM 8 Aiken, SC 29808</b>			6. Generator's Site Address (if different than mailing address) <b>US DoE Bldg 645-N Aiken, SC 29808</b>		
7. Transporter 1 Company Name <b>Clean Harbors Env. Services Inc.</b>			8. U.S. EPA ID Number <b>MA0039322250</b>		
9. Designated Facility Name and Site Address <b>Clean Harbors LnPerts LLC 900 Independence Parkway South Lufkin, TX 77571</b>			10. U.S. EPA ID Number <b>TX0992290140</b>		
11. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) <b>Non Hazardous Non DOT Regulated Material (Empty Cylinders)</b>			12. Containers No. Type <b>002 Cy</b>	13. Total Quantity <b>125</b>	14. Waste Codes <b>P 00157011</b>
15. Special Handling Instructions and Additional Information <b>1. LC45 "Empty Cylinder" CyXLX2</b>					
16. GENERATOR/SUPPORTER'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/packaged, 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 the consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste identification statement identified in 40 CFR 261.27(a) (1) is a large quantity generator or (2) (P) and that all quantity generated is true.					
17. Transporter Signature (for receipt only) <b>Johnny Sanders</b>			Signature 		Month Day Year <b>7/15/20</b>
18. Transporter Acknowledgment of Receipt of Materials <b>HOPEYON FODDIS</b>			Signature 		Month Day Year <b>7/15/20</b>
19. Discrepancy 19a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection 19b. Alternate Facility (or Generator) <input type="checkbox"/> Manifest Reference Number _____ U.S. EPA ID Number _____ Facility's Phone _____ 19c. Signature of Alternate Facility (or Generator) _____ Month Day Year _____					
20. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, storage, and recycling systems) <b>H141</b>					
21. Designated Facility (Owner or Operator) Certification of receipt of hazardous materials covered by the manifest except as noted in item 19a Signature _____ Month Day Year _____					

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)