

---

**SITE CLOSEOUT REPORT REV 2**  
**– APPENDIX C PHOTOGRAPHS**

**U.S. DEPARTMENT OF ENERGY**

**HIGH FLUX BEAM REACTOR STACK (BLDG 705)**  
**DECOMMISSIONING AND DEMOLITION (D&D)**  
**BROOKHAVEN NATIONAL LABORATORY**  
**UPTON, NY**  
**CERCLIS NUMBER NY 789008975**



---



## **APPENDIX C**



### **PHOTOGRAPHS**

<b>Photo No. 01</b>	<b>Date:</b> 08/13/20	
<b>Photo No. 02</b>	<b>Date:</b> 08/13/20	<div data-bbox="115 201 373 953"> <p><b>Description:</b></p> <p>Vacuum pump set up for coating abatement, with secondary containment.</p> </div> <div data-bbox="115 1041 373 1793"> <p><b>Description:</b></p> <p>Offloading gravel for site access roads.</p> </div> 



<b>Photo No. 03</b>	<b>Date:</b> 08/13/20	
<b>Description:</b> Prepared gravel access road to stack site.		
<b>Photo No. 04</b>	<b>Date:</b> 08/14/20	
<b>Description:</b> Preparations at stack base work area.		



<b>Photo No. 05</b>	<b>Date:</b> 08/17/20	
<b>Description:</b> Stack pre-abatement.		
<b>Photo No. 06</b>	<b>Date:</b> 8/22/20	
<b>Description:</b> Railroad tracks at BNL rail yard area, prior to repairs and load area set up.		



<b>Photo No. 07</b>	<b>Date:</b> 09/08/20	
<b>Description:</b> Stack pre-abatement, during set up.		



<b>Photo No. 09</b>	<b>Date:</b> 08/27/20	
<b>Description:</b> Inspecting stack drain tank		
<b>Photo No. 10</b>	<b>Date:</b> 08/27/20	
<b>Description:</b> Site control boundary fence at right, and exclusion zone boundary fence at left.		

<b>Photo No. 11</b>	<b>Date:</b> 08/27/20	
<b>Description:</b> Abatement set up, vacuum pump in foreground.		
<b>Photo No. 12</b>	<b>Date:</b> 09/09/20	
<b>Description:</b> Abatement progress above stack base.		



<b>Photo No. 13</b>	<b>Date:</b> 10/13/20	
<b>Description:</b> Abatement progress. First platform (101 ft above grade, elev. 225.5 ft) visible at top of photo.		
<b>Photo No. 14</b>	<b>Date:</b> 10/13/20	
<b>Description:</b> Abatement progress to first platform (101 ft above grade).		



<b>Photo No. 15</b>	<b>Date:</b> 10/15/20	
<b>Photo No. 16</b>	<b>Date:</b> 10/16/20	



<b>Photo No. 17</b>	<b>Date:</b> 10/17/20	
<b>Photo No. 18</b>	<b>Date:</b> 10/17/20	



<b>Photo No. 19</b>	<b>Date:</b> 10/20/20	
<b>Description:</b> Abatement approaching second platform (209 ft above grade).		
<b>Photo No. 20</b>	<b>Date:</b> 11/05/20	
<b>Description:</b> Abatement completed to stack top cap.		



<b>Photo No. 21</b>	<b>Date:</b> 11/10/20	
<b>Photo No. 22</b>	<b>Date:</b> 11/13/20	

<b>Photo No. 23</b>	<b>Date:</b> 11/14/20	
<b>Photo No. 24</b>	<b>Date:</b> 11/16/20	



<b>Photo No. 25</b>	<b>Date: 11/16/20</b>	
<b>Photo No. 26</b>	<b>Date: 11/18/20</b>	



<b>Photo No. 27</b>	<b>Date:</b> 11/18/20	
<b>Description:</b> Mantis lift by crane.		
<b>Photo No. 28</b>	<b>Date:</b> 11/18/20	
<b>Description:</b> Mantis lift by crane.		

<b>Photo No. 29</b>	<b>Date:</b> 11/19/20	
<b>Description:</b> Work platform (K-bracket) preparation.		



<b>Photo No. 31</b>	<b>Date: 1/4/21</b>	
<b>Photo No. 32</b>	<b>Date: 1/4/21</b>	



<b>Photo No. 33</b>	<b>Date:</b> <b>1/11/21</b>	<div data-bbox="636 193 1232 1001" data-label="Image"> </div>
<b>Photo No. 34</b>	<b>Date:</b> <b>1/15/21</b>	<div data-bbox="118 1213 350 1409" data-label="Text"> <p><b>Description:</b>  Stack demolished to approx..110 ft above grade (demolition approx. 65% complete).</p> </div> <div data-bbox="469 1180 1401 1881" data-label="Image"> </div>

<b>Photo No. 35</b>	<b>Date:</b> 1/22/21	
<b>Photo No. 36</b>	<b>Date:</b> 1/22/21	

<b>Photo No. 37</b>	<b>Date: 2/1/21</b>	
<b>Photo No. 38</b>	<b>Date: 2/1/21</b>	

<b>Photo No. 39</b>	<b>Date: 2/8/21</b>	
<b>Description:</b> Mantis removed from top of stack		
<b>Photo No. 40</b>	<b>Date: 2/8/21</b>	
<b>Description:</b> Mantis removed from top of stack		

<b>Photo No. 41</b>	<b>Date:</b> 2/15/21	
<b>Description:</b> Demolition of stack base.		
<b>Photo No. 42</b>	<b>Date:</b> 2/16/21	
<b>Description:</b> I beam and rebar reenforces concrete over stack breach door.		



<b>Photo No. 43</b>	<b>Date:</b> 2/16/21	
<b>Photo No. 44</b>	<b>Date:</b> 2/16/21	

<b>Photo No. 45</b>	<b>Date: 2/20/21</b>	
<b>Photo No. 46</b>	<b>Date: 2/20/21</b>	

<b>Photo No. 47</b>	<b>Date: 2/20/21</b>	<div data-bbox="116 214 269 247" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 252 354 348" data-label="Text"> <p>Loading debris-filled IMCs on to rail cars at rail yard.</p> </div> <div data-bbox="529 117 1334 945" data-label="Image">  A yellow crane is lifting a blue debris-filled IMC (Intermodal Medium Container) onto a rail car. The scene is set in a snowy rail yard with several workers in orange safety gear visible. The ground is covered in snow, and the sky is overcast. </div>
<b>Photo No. 48</b>	<b>Date: 2/20/21</b>	<div data-bbox="116 1050 269 1083" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 1087 354 1184" data-label="Text"> <p>Loading debris-filled IMCs on to rail cars at rail yard.</p> </div> <div data-bbox="522 1037 1341 1848" data-label="Image">  A red crane is lifting a blue debris-filled IMC onto a rail car. The scene is set in a snowy rail yard with several workers in orange safety gear visible. The ground is covered in snow, and the sky is overcast. </div>

<b>Photo No. 49</b>	<b>Date:</b> 2/20/21	 <p><b>Description:</b> Rail cars loaded with debris-filled IMCs ready for departure.</p>
<b>Photo No. 50</b>	<b>Date:</b> 3/15/21	 <p><b>Description:</b> Removing soil from inside the silencer.</p>

<b>Photo No. 51</b>	<b>Date:</b> 3/15/21	
<b>Description:</b> Loading super sacks.		
<b>Photo No. 52</b>	<b>Date:</b> 3/16/21	
<b>Description:</b> Filled super sacks staged.		

<b>Photo No. 53</b>	<b>Date:</b> 3/5/21	
<b>Description:</b> Stack drain tank being removed		
<b>Photo No. 54</b>	<b>Date:</b> 3/23/21	
<b>Description:</b> Looking south at the three stack drain pipes entering the pedestal		

<b>Photo No. 55</b>	<b>Date: 4/1/21</b>	<div data-bbox="662 216 1208 953" data-label="Image"> </div>
<b>Description:</b> View of the stack drain tank excavation looking east.		<div data-bbox="631 1092 1240 1913" data-label="Image"> </div>

<b>Photo No. 57</b>	<b>Date: 4/6/21</b>	
<b>Photo No. 58</b>	<b>Date: 4/6/21</b>	

**Description:**

Loading super sacks  
to transport from site  
to rail yard.

**Photo  
No. 58**
**Date:  
4/6/21**
**Description:**

Loading super sacks  
to transport from site  
to rail yard.

<b>Photo No. 59</b>	<b>Date: 04/06/21</b>	<div data-bbox="118 210 269 245" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="118 247 316 315" data-label="Text"> <p>Staging of Pactec soil bags on site</p> </div> <div data-bbox="376 268 1502 753" data-label="Image"> </div>
<b>Photo No. 60</b>	<b>Date: 04/07/21</b>	<div data-bbox="118 1003 269 1039" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="118 1041 332 1199" data-label="Text"> <p>View of IMCs and soil sack staging in the railyard area in preparation for transport</p> </div> <div data-bbox="634 1010 1234 1797" data-label="Image"> </div>

<b>Photo No. 61</b>	<b>Date:</b> 4/7/21	<div data-bbox="609 210 1205 1012" data-label="Image"> </div>
<b>Description:</b> Silencer removal.		
<b>Photo No. 62</b>	<b>Date:</b> 4/7/21	<div data-bbox="378 1144 1489 1650" data-label="Image"> </div>
<b>Description:</b> Silencer removal.		

<b>Photo No. 63</b>	<b>Date:</b> 4/7/21	<div data-bbox="527 210 880 976" data-label="Image"> </div>
<b>Description:</b> Silencer removal.		
<b>Photo No. 64</b>	<b>Date:</b> 04/16/21	<div data-bbox="563 1117 1435 1827" data-label="Image"> </div>
<b>Description:</b> Pedestal scabbling with a secondary enclosure around the machine and connected to a dual-filter HEPA filtration system. The tented room is used to bag removed concrete and to service machines.		

<b>Photo No. 65</b>	<b>Date:</b> 04/12/21	<div data-bbox="116 207 267 239" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 245 341 399" data-label="Text"> <p>Silencer excavation looking towards southwest, showing dark gray outline of silencer footer.</p> </div> <div data-bbox="376 207 1190 1140" data-label="Image"> <p>A photograph of a large, deep excavation pit. The pit is filled with brown soil and has a dark gray footer visible at the bottom. A yellow arrow points to the footer. In the background, there are construction vehicles and a clear blue sky.</p> </div>
<b>Photo No. 66</b>	<b>Date:</b> 4/20/21	<div data-bbox="116 1253 267 1285" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 1291 337 1444" data-label="Text"> <p>Silencer excavation looking north showing the hammering of footer.</p> </div> <div data-bbox="376 1253 1369 1913" data-label="Image"> <p>A photograph of a yellow excavator with a hammer attachment, positioned at the edge of an excavation pit. The excavator is hammering a footer into the ground. The pit is filled with brown soil and has a dark gray footer visible at the bottom. In the background, there are construction vehicles and a clear blue sky.</p> </div>

<b>Photo No. 67</b>	<b>Date:</b> 4/23/21	<div data-bbox="378 210 974 949" data-label="Image"> </div>
<b>Photo No. 68</b>	<b>Date:</b> 4/28/21	<div data-bbox="378 1054 1331 1827" data-label="Image"> </div>

<b>Photo No. 69</b>	<b>Date:</b> 5/18/21	<div data-bbox="116 210 269 245" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 247 347 497" data-label="Text"> <p>Surface condition of pedestal surface. Rutted area from former stack base, rebar, core sample locations in blue paint, and scabblor machine are shown.</p> </div> <div data-bbox="376 212 1081 959" data-label="Image"> </div>
<b>Photo No. 70</b>	<b>Date:</b> 5/18/21	<div data-bbox="116 1062 269 1098" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 1100 347 1255" data-label="Text"> <p>Looking W from the pedestal at the silencer excavation while impacted soil is removed.</p> </div> <div data-bbox="393 1071 1289 1743" data-label="Image"> </div>

<b>Photo No. 71</b>	<b>Date: 5/18/21</b>	<div data-bbox="120 210 347 407" data-label="Text"> <p><b>Description:</b> Looking NW at the silencer excavation and removal of impacted soil within the shoring box</p> </div> <div data-bbox="396 218 1360 882" data-label="Image"> </div>
<b>Photo No. 72</b>	<b>Date: 6/8/21</b>	<div data-bbox="120 995 347 1192" data-label="Text"> <p><b>Description:</b> Looking north at the installation of lower shoring box over Footer A within the silencer excavation.</p> </div> <div data-bbox="380 995 961 1772" data-label="Image"> </div>

<b>Photo No. 73</b>	<b>Date: 6/15/21</b>	<div data-bbox="120 210 267 239" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 245 332 403" data-label="Text"> <p>Looking southwest at the pedestal during the start of the vertical saw cutting process.</p> </div> <div data-bbox="376 207 1218 840" data-label="Image"> </div>
<b>Photo No. 74</b>	<b>Date: 6/15/21</b>	<div data-bbox="116 949 267 980" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 987 347 1203" data-label="Text"> <p>Looking north at the silencer excavation during a manlift evaluation to determine the extent of possible rad screening coverage.</p> </div> <div data-bbox="376 947 1490 1787" data-label="Image"> </div>

<b>Photo No. 75</b>	<b>Date: 6/18/21</b>	<div data-bbox="118 210 269 245" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="118 247 347 436" data-label="Text"> <p>Looking north at pedestal while the northwest quadrant is being horizontally cut to a 12-inch depth.</p> </div> <div data-bbox="376 210 1292 894" data-label="Image"> </div>
<b>Photo No. 76</b>	<b>Date: 6/21/21</b>	<div data-bbox="118 999 269 1035" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="118 1037 337 1226" data-label="Text"> <p>Looking southwest at pedestal showing replacement of a gutter drain system to tank with a 4" PVC drain pipe.</p> </div> <div data-bbox="376 999 1497 1877" data-label="Image"> </div>

<b>Photo No. 77</b>	<b>Date: 7/13/21</b>	<div data-bbox="116 210 269 245" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 247 345 405" data-label="Text"> <p>Looking south, concrete saw setting up on crack area to be sawed for removal.</p> </div> <div data-bbox="376 210 1380 852" data-label="Image"> </div>
<b>Photo No. 78</b>	<b>Date: 7/13/21</b>	<div data-bbox="116 951 269 987" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 989 347 1180" data-label="Text"> <p>Yellow marks areas where vertical cracks were observed at one foot below original pedestal surface.</p> </div> <div data-bbox="376 951 1266 1923" data-label="Image"> </div>

<b>Photo No. 79</b>	<b>Date:</b> 7/14/21	
<b>Photo No. 80</b>	<b>Date:</b> 7/20/21	



<b>Photo No. 81</b>	<b>Date:</b> <b>7/28/21</b>	<div data-bbox="120 210 269 245" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 247 332 407" data-label="Text"> <p>Looking southeast, drain lines being scrubbed and cleaned prior to flushing.</p> </div> <div data-bbox="378 212 1258 877" data-label="Image"> </div>
<b>Photo No. 82</b>	<b>Date:</b> <b>7/30/21</b>	<div data-bbox="116 978 269 1014" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 1016 354 1234" data-label="Text"> <p>Radiation screening activity at the southeast corner of the silencer excavation. Pedestal steps have been cut off at left.</p> </div> <div data-bbox="378 980 1495 1814" data-label="Image"> </div>

<b>Photo No. 83</b>	<b>Date: 7/30/21</b>	<div data-bbox="120 212 267 243" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="120 249 345 407" data-label="Text"> <p>Looking south, completing cleanout of final silencer excavation to prepare for FSS.</p> </div> <div data-bbox="378 212 1284 873" data-label="Image"> </div>
<b>Photo No. 84</b>	<b>Date: 8/2/21</b>	<div data-bbox="120 989 267 1020" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="120 1026 341 1148" data-label="Text"> <p>Decontamination of heavy equipment within the radiation zone.</p> </div> <div data-bbox="378 989 1495 1829" data-label="Image"> </div>

<b>Photo No. 85</b>	<b>Date: 8/3/21</b>	<div data-bbox="120 210 269 245" data-label="Section-Header"> <b>Description:</b> </div> <div data-bbox="116 247 339 378" data-label="Text"> <p>Looking northwest, soil removal activities completed east of the pedestal,</p> </div> <div data-bbox="378 212 1284 886" data-label="Image"> </div>
<b>Photo No. 86</b>	<b>Date: 8/10/21</b>	<div data-bbox="116 987 337 1142" data-label="Text"> <p><b>Description:</b> Manlift basket for conducting FSS/ORISE Verification</p> </div> <div data-bbox="378 989 1495 1791" data-label="Image"> </div>



<b>Photo No. 87</b>	<b>Date: 8/10/21</b>	 <p><b>Description:</b> FSS: radiological screening of the north wall of the excavation. Stockpiled soil under blue tarp has been screened and analyzed for re-use as backfill.</p>
<b>Photo No. 88</b>	<b>Date: 8/10/21</b>	 <p><b>Description:</b> Shoring box at bottom of excavation.</p>



<b>Photo No. 89</b>	<b>Date: 8/17/21</b>	<div data-bbox="115 243 341 371" data-label="Text"> <p><b>Description:</b> FSS soil sampling being performed at the foot of the pedestal</p> </div> <div data-bbox="378 245 1201 877" data-label="Image">  A photograph showing two workers in safety vests (one yellow, one red) and hard hats performing soil sampling. They are kneeling in a dirt area next to a large, grey concrete structure. A black tarp is partially visible in the foreground. </div>
<b>Photo No. 90</b>	<b>Date: 8/17/21</b>	<div data-bbox="115 984 341 1081" data-label="Text"> <p><b>Description:</b> Crane at railyard being set up to load IMCs</p> </div> <div data-bbox="378 987 1291 1665" data-label="Image">  A photograph of a construction or industrial site. A yellow crane is positioned on the left, and a yellow forklift is in the center. To the right, there are several large white bags (IMCs) stacked. The ground is dirt with tire tracks. A sign on the crane says "OVERSIZE LOAD". </div>

<b>Photo No. 91</b>	<b>Date:</b> 8/17/21	
<b>Description:</b> Loading IMCs on a rail car		
<b>Photo No. 92</b>	<b>Date:</b> 8/24/21	
<b>Description:</b> FSS scanning.		

<b>Photo No. 93</b>	<b>Date:</b> 8/24/21	
<b>Photo No. 94</b>	<b>Date:</b> 8/24/21	

<b>Photo No. 95</b>	<b>Date: 8/26/21</b>	<div data-bbox="115 210 347 367" data-label="Text"> <p><b>Description:</b> Alpha/Beta static measurements being performed at pedestal.</p> </div> <div data-bbox="378 210 953 888" data-label="Image"> <p>A photograph showing two men at a construction site. One man in an orange shirt and khaki pants is operating a small, wheeled device on a concrete surface. The other man, wearing a white shirt, khaki pants, and a hat, is holding a clipboard and observing. The concrete surface has several green spray-painted markings. In the background, there are yellow excavators and a folding chair.</p> </div>
<b>Photo No. 96</b>	<b>Date: 8/28/21</b>	<div data-bbox="115 991 326 1144" data-label="Text"> <p><b>Description:</b> Core drill for collecting concrete samples from pedestal for FSS</p> </div> <div data-bbox="378 991 1497 1822" data-label="Image"> <p>A close-up photograph of a red and silver core drill machine positioned on a concrete surface. The machine is connected to a blue container in the background by a yellow hose. A red hose is also visible on the ground. The machine is currently drilling into the concrete, with a hole visible.</p> </div>

<b>Photo No. 97</b>	<b>Date: 8/29/21</b>	
<b>Description:</b> Final rail shipment leaving site.		

<b>Photo No. 99</b>	<b>Date: 9/7/21</b>	
<b>Photo No. 100</b>	<b>Date: 9/7/21</b>	

<b>Photo No. 101</b>	<b>Date: 9/8/21</b>	
<b>Description:</b> Start of backfill in the silencer excavation area		
<b>Photo No. 102</b>	<b>Date: 9/13/21</b>	
<b>Description:</b> Grouting the pedestal drain pipes.		

<b>Photo No. 103</b>	<b>Date:</b> 9/13/21	<div data-bbox="118 210 334 336"> <b>Description:</b>            Closeup of grouted            pipe on pedestal            surface.         </div> <div data-bbox="376 210 883 882" data-label="Image"> <p>A close-up photograph of a dark, textured, irregularly shaped mass of grout or sealant applied to a light-colored, speckled concrete pedestal surface. The grout has a rough, uneven texture with some ridges and valleys. Several small, bright yellow paint marks or markers are visible along the perimeter of the grout application, particularly on the right and top edges.</p> </div>
<b>Photo No. 104</b>	<b>Date:</b> 9/13/21	<div data-bbox="118 987 334 1113"> <b>Description:</b>            Closeup of grouted            pipe on pedestal            surface.         </div> <div data-bbox="376 987 889 1667" data-label="Image"> <p>A close-up photograph of a dark, textured, irregularly shaped mass of grout or sealant applied to a light-colored, speckled concrete pedestal surface. The grout has a rough, uneven texture with some ridges and valleys. Several small, bright green paint marks or markers are visible along the perimeter of the grout application, particularly on the right side.</p> </div>

<b>Photo No. 105</b>	<b>Date:</b> 9/13/21	<div data-bbox="115 243 347 428" data-label="Text"> <p><b>Description:</b> Backfill and compaction using gas-powered tamper in the former stack drain tank area.</p> </div> <div data-bbox="378 245 1224 888" data-label="Image"> </div>
<b>Photo No. 106</b>	<b>Date:</b> 9/21/21	<div data-bbox="115 993 347 1146" data-label="Text"> <p><b>Description:</b> Looking north, backfill and compaction complete.</p> </div> <div data-bbox="378 993 1502 1755" data-label="Image"> </div>

<b>Photo No. 107</b>	<b>Date: 9/21/21</b>	<div data-bbox="378 247 1237 882" data-label="Image"> </div>
<b>Description:</b> Looking south, backfill and compaction complete.		
<b>Photo No. 108</b>	<b>Date: 9/21/21</b>	<div data-bbox="378 987 1404 1749" data-label="Image"> </div>
<b>Description:</b> Looking southeast, landscape rake used to prepare site for Hydroseed.		

<b>Photo No. 109</b>	<b>Date: 9/27/21</b>	
<b>Photo No. 110</b>	<b>Date: 9/27/21</b>	

<b>Photo No. 111</b>	<b>Date: 9/27/21</b>	<div data-bbox="115 239 363 900"> <p><b>Description:</b> Looking east, former trailer area prepared for Hydroseed.</p> </div> <div data-bbox="378 247 1250 894">  </div>
<b>Photo No. 112</b>	<b>Date: 9/27/21</b>	<div data-bbox="115 987 363 1944"> <p><b>Description:</b> Landscape rake has prepared site for Hydroseed.</p> </div> <div data-bbox="378 995 1495 1797">  </div>

<b>Photo No. 113</b>	<b>Date:</b> 10/4/21	<div data-bbox="386 247 1312 890" data-label="Image"> </div>
<b>Photo No. 114</b>	<b>Date:</b> 10/4/21	<div data-bbox="386 991 1442 1780" data-label="Image"> </div>