

## IR Site Inspections – 3<sup>rd</sup> Quarter 2005

### St. Juliens Creek Annex, Chesapeake, Virginia

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**INSPECTIONS CONDUCTED BY:** Janna Staszak/CH2M HILL - VBO  
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Agnes Sullivan/NAVFAC Mid-Atlantic

**DATE:** September 21, 2005

#### Introduction

This technical memorandum summarizes the results of the inspections conducted at the active Installation Restoration (IR) sites at St. Juliens Creek Annex (SJCA) on September 6, 2005. The active sites include:

Site 2 – Waste Disposal Area B

Site 3 – Waste Disposal Area C

Site 4 – Landfill D

Site 5 – Burning Grounds

Site 19 – Building 190

Site 21 – Building 187

The following sections summarize the results of the inspections, identify the potential concerns observed, and provide recommendations for remedy by site. The site-specific inspection checklists are included as an attachment.

#### Site 2 – Waste Disposal Area B

- There are tire ruts in the vicinity of the wooded area at Site 2. However, vegetation re-growth in this area is evident. This area should be assessed during the next quarterly site inspection to ensure the continuation of vegetative re-growth.
- The monitoring wells were in good condition overall. The following potential concerns were observed:
  - Protective casing will not close completely: SJS02-MW02S
  - One bollard down: SJS02-MW05S

CH2M HILL has conducted a facility-wide monitoring well survey and will replace the protective casing lid at SJS02-MW02S and repair the downed bollard at SJS02-MW05S in

October/November 2005. The condition of the monitoring wells should be assessed during subsequent inspections.

### Site 3 – Waste Disposal Area C

- Ponded surface water was observed in three locations paralleling the cut-through road at Site 3. At the southern end of the Site 3 eastern drainage ditch the culvert appears to be clogged and not draining. It is recommended that the culvert be unclogged or replaced to promote Site 3 drainage and prevent potential impacts to the soil cover currently being installed at Site 4, located just south of Site 3.
- Various tire ruts were observed throughout the site. In some areas vegetation re-growth is evident. The area should be assessed during the next quarterly site inspection to ensure the continuation of vegetative re-growth.
- The monitoring wells were in good condition overall. The following potential concerns were observed:
  - Two bollards are bent: SJS03-MW02D
  - Cap does not close: SJS03-MW03S
  - One bollard is bent, hinge on protective casing lid is rusted away and the lid no longer attaches to protective casing: SJS03-MW04S
  - One bollard is down: SJS03-MW05S

CH2M HILL plans to abandon the monitoring wells in October/November 2005 as no further action has been determined for Site 3. The upgradient monitoring wells, SJS03-MW01S and SJS03-MW01D, will remain in-place as part of the facility-wide background monitoring well network.

### Site 4 – Landfill D

The remedial action (soil cover) for Site 4 is currently being implemented. This area will be inspected following the completion of the soil cover (October 2005).

- Damage to the perimeter road in the vicinity of SJS04-MW04S and south of SJS4-MW03D was observed. It is recommended that the road be repaired when activities at Site 4 have concluded.
- Three drums of Investigation Derived Waste (IDW) were observed near the entrance to the Site 4 soil cover. The drums contain soil cuttings and water from monitoring well installation activities at Site 4. The IDW is scheduled to be removed by the end of September.
- The monitoring wells were in good condition overall. The following potential concerns were observed:
  - Only three bollards: SJS04-MW01D
  - Only three bollards, one is down: SJS04-MW01S
  - Three bollards down: SJS04-MW02S
  - Hinge rusted off of protective casing lid: SJS04-MW03S

The condition of the monitoring wells will be assessed upon remedial action completion. At this time, it is recommended that the downed bollards and the rusted protective casing hinge be considered for replacement based on site conditions. The condition of the wells should be monitored during subsequent inspections.

### **Site 5 – Burning Grounds**

- The monitoring wells were in good condition. The following potential concerns were observed:
  - Protective casing lid will not close securely: SJS05-MW02S and SJS05-MW02D
  - Wood base separated from pad and one bollard down at: SJS05-MW05S

CH2M HILL has conducted a facility-wide monitoring well survey and will replace the protective casing lids at SJS05-MW02S and SJS05-MW02D, repair the bollard at SJS05-MW05S, and remove the wood base from SJS05-MW05S, as it does not affect the monitoring well integrity, in October/November 2005. The condition of the monitoring wells should be assessed during subsequent inspections.

### **Site 19 – Building 190**

No concerns were observed at this site.

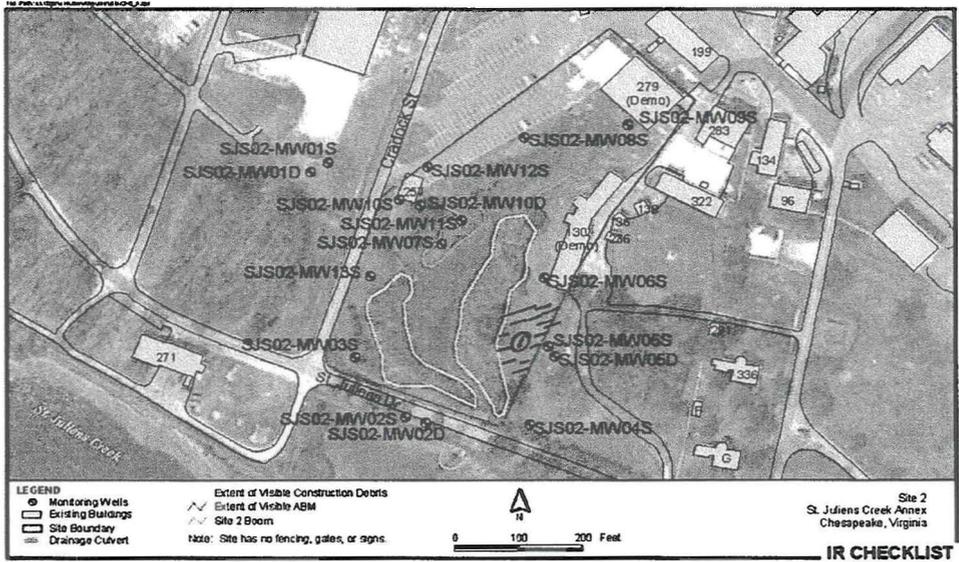
### **Site 21 – Building 187**

Construction equipment and two open excavations (approximately 15' x 5' x 5' and 12' x 8' x 5') were observed east of monitoring well SJS21-MW09S. According to the workers on site, a storm water line repair is underway. The excavation is located in an area of potential groundwater contamination. The existing groundwater and storm water analytical data, and a comparison of the groundwater data to non-hazardous disposal criteria were provided to the Navy on September 6, 2005.

**Site 2 - Waste Disposal Area B**  
**St. Juliens Creek Annex, Chesapeake, Virginia**

Description: Site 2 is an unlined waste disposal area, covering approximately 4.4 acres, located at the corner of St. Juliens Drive and Cradock Street in the southwestern portion of the Annex. The waste disposal area began operating in 1921. Initially, refuse was burned onsite and was used to fill an adjacent swampy area. In 1942, an incinerator was installed and replaced the open burning practices. The waste disposal area was closed sometime after 1947. Garbage, acids, and waste ordnance were reportedly disposed at Site 2. Site 2 also contains abrasive blast media (ABM) from ship overhaul and repair operations. In 1989, the site was used for storage of heavy equipment and machinery, including storage of tools, tires, and machinery in sheds and trailers. Site 2 encompasses the former Site 17, that consisted of a concrete storage pad located just outside Building 279. The building was used as a fork lift maintenance shop. The site is bounded on the south by Site 2. Building 278/279 were demolished in 2003 and the concrete slab remains in-place.

Site 2 is currently a swampy area covered with brush, trees, and grass. A water body directly connected to St. Juliens Creek is located in the center of Site 2. This inlet from the creek is tidally influenced and drains surface water from adjoining land, including Site 2, into the creek. Construction debris (concrete and brick), as well as ABM, are visible at the site. There is currently no fencing or signs posted.



Comments: (Provide related question number for each comment)

-All Environmental signs in good condition

① general rutting in field

Monitoring well issues:

MW02S - protective casing will not close completely  
 MW05S - one ballard down

**General Questionnaire**

- 1 Is the area free of any indication of recent and/or current intrusive activities within the site boundary, as depicted on the figure, or in the immediate vicinity of the site? If no, mark location of intrusive activities on figure, note extent and purpose.
- 2 Is the area free of storage of any investigative derived waste (IDW) on site? If no, mark location of IDW on figure, note its condition in the comment section below, and notify activity coordinator. Indicate if IDW is properly labeled, per example below:  
 Investigative Derived Waste  
 Purge water from Site 2  
 January 28, 2003  
 Do not handle, analysis pending  
 Contact Jeff Weisman, NAVFAC MID LANT, 322-4342
- 3 Is the area free of identifiable concerns, such as, signs of dumping of chemicals or debris, with regards to this site? If no, annotate these concerns in the comments section above, mark location of concern on map, and notify activity coordinator.

Yes	No
X	

X	
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X	
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**Site Specific Questionnaire**

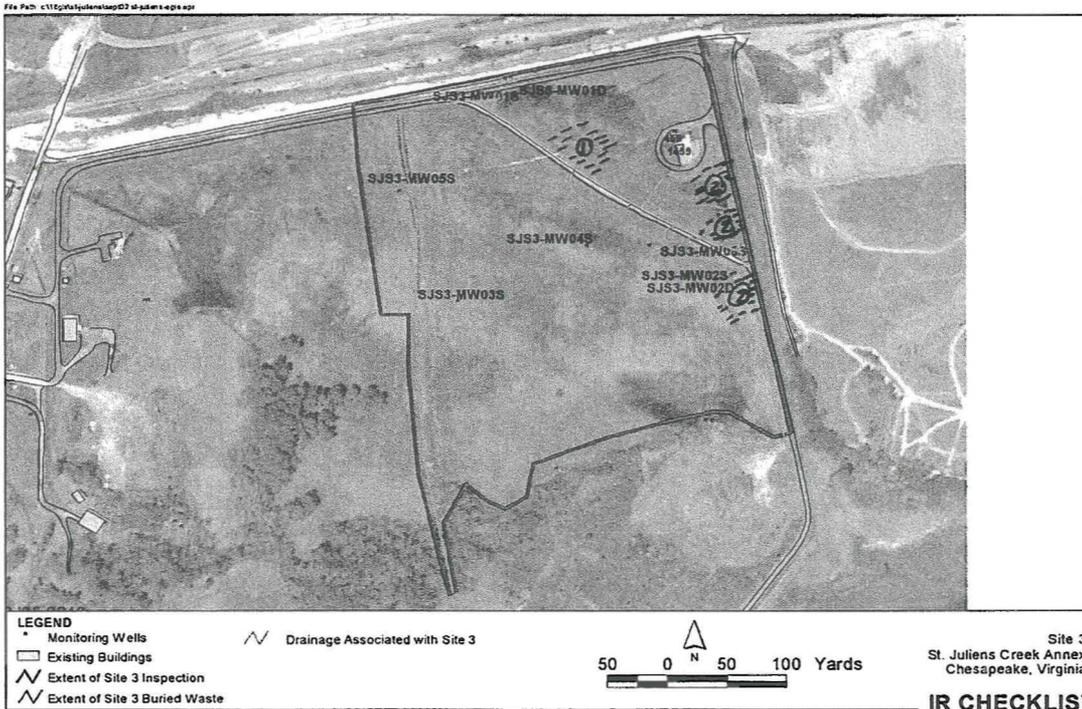
- 4 Are site monitoring wells, as depicted on the figure, in good condition and appear to be locked? (i.e. damaged protective posts and/or well head/casing) If no, describe condition of the deficient monitoring well(s), mark location of deficient monitoring well(s).

	X
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Inspection performed by: (Print and sign) *Rebekah Ives* *Rebekah Ives*  
 Date: *9/06/05*

**Site 3 - Waste Disposal Area C**  
**St. Juliens Creek Annex, Chesapeake, Virginia**

Description: Site 3 is a former 2.1-acre unlined waste disposal area located in the northeastern corner of the Annex. The site is located on fill material which reportedly originated from the Southern Branch of the Elizabeth River. Site 3 was originally a mudflat where refuse was allowed to burn; the ash was then used to fill the area. Refuse disposal operations took place from 1940 through 1970. Refuse dumped at Site 3 reportedly included solvents, acids, bases, and mixed municipal waste. The total volume of waste disposed of was estimated to be approximately 750,000 cubic feet (27,800 cubic yards) before burning. Two pits at Site 3 were reportedly used for the disposal of oil and oily sludge and for periodic burning. The disposal pits were located along the north side of the access road that diagonally crosses the site. After 1970, the area was graded level and covered with grass. A removal of contaminated soil and waste was completed in 2004 and the site has been returned to its previous condition. There is currently no fencing or signs posted.



Comments: (Provide related question number for each comment)

① - general rutting from tires

② - Ponding on-site due to poor site drainage. Southern end of Site 3 Eastern drainage ditch... the culvert appears to be clogged + is not draining.

Monitoring wells: MW027, MW045, MW055 - bollards down or bent, MW035 - cap does not close

**General Questionnaire**

- |  | Yes                                 | No                       |
|--|-------------------------------------|--------------------------|
| 1 Is the area free of any indication of recent and/or current intrusive activities within the site boundary, as depicted on the figure, or in the immediate vicinity of the site? If no, mark location of intrusive activities on figure, note extent and purpose.   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2 Is the area free of storage of any investigative derived waste (IDW) on site? If no, mark location of IDW on figure, note its condition in the comment section below, and notify activity coordinator. Indicate if IDW is properly labeled, per example below:<br>Investigative Derived Waste<br>Purge water from Site 3<br>January 28, 2003<br>Do not handle, analysis pending<br>Contact Jeff Weisman, NAVFAC MID LANT, 322-4342 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3 Is the area free of identifiable concerns, such as, signs of dumping of chemicals or debris, with regards to this site? If no, annotate these concerns in the comments section above, mark location of concern on map, and notify activity coordinator.  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Site Specific Questionnaire**

- |  |                          |                                     |
|--|--------------------------|-------------------------------------|
| 4 Are the drainage ditches, as depicted on the figure, in good condition (free of sediment buildup and debris)? If no, describe condition of the drainage ditch, mark deficient location(s) on map, and notify activity coordinator.                                     | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5 Are site monitoring wells, as depicted on the figure, in good condition and appear to be locked? (i.e. damaged protective posts and/or well head/casing) If no, describe condition of the deficient monitoring well(s), mark location of deficient monitoring well(s). | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Inspection performed by: (Print and sign) Rebekah Ives Rebekah Ives

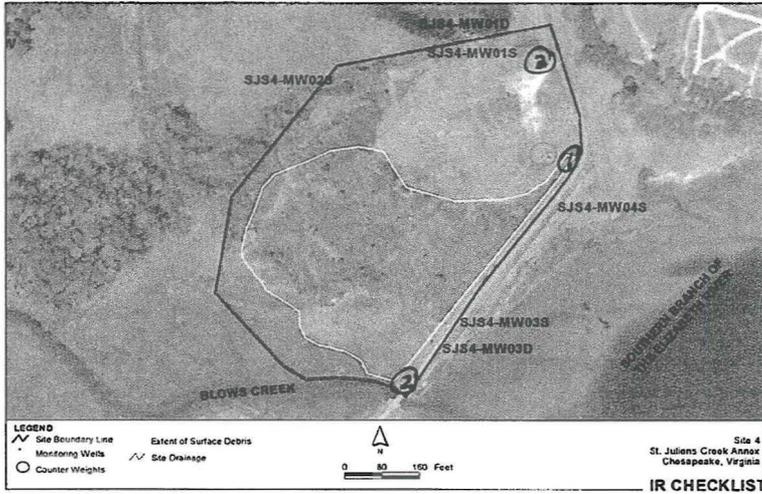
Date: 9/16/05

**Site 4 - Landfill D**

**St. Juliens Creek Annex, Chesapeake, Virginia**

Description: Site 4 (Landfill D) covers an estimated 10.1 acres in the northeastern portion of the Annex just north of the confluence of Blows Creek and the Southern Branch of the Elizabeth River. The site is located on fill material which reportedly originated from the Southern Branch of the Elizabeth River. The first indication of activity at Site 4 is a trench identified on a historical aerial photograph from 1961. The original trench and others were filled with trash, wet garbage, and soil from subsequent trenches. It is not known how many trenches were eventually dug, but based on a review of historical aerial photographs, there appear to be only two. Around 1970, sanitary landfill operations began at Site 4 in the marshes of Blows Creek. Disposal included primarily trash and wet garbage. Sanitary landfill operations continued until 1976, at which time trash and garbage were hauled to an off-site facility and inert construction material was then disposed of at the landfill. The wastes managed were primarily trash, wet garbage, construction material, and out-dated civil defense materials. Some solvents, acids, bases, and polychlorinated biphenyls (PCBs) were reportedly disposed. Wastes disposed of at Site 4 were estimated at 1,500,000 cubic ft.

The Selected Remedy for Site 4; soil cover, surface and wetland debris removal, and eastern drainage ditch removal; is currently being conducted and is expected for completion by October 2005. Signs and fencing will be installed.



Comments: (Provide related question number for each comment)

① - Dirt on road at bend, needs cleanup. Road needs repair.  
 ② - Right before bridge, severe wear + tear of road.  
 ③ - Three IDW drums from Site 4 Activities; 2 H<sub>2</sub>O + 1 soil  
 Note: construction is on-going at Site 4. site still needs to be seeded  
 - Bollard down @ mw01s/02s/01D; pipe noted off of MW03S

IR CHECKLIST

**General Questionnaire**

- Is the area free of any indication of recent and/or current intrusive activities within the site boundary, as depicted on the figure, or in the immediate vicinity of the site? If no, mark location of intrusive activities on figure, note extent and purpose.
- Is the area free of storage of any investigative derived waste (IDW) on site? If no, mark location of IDW on figure, note its condition in the comment section below, and notify activity coordinator. Indicate if IDW is properly labeled, per example below:  
 Investigative Derived Waste  
 Purge water from Site 4  
 January 28, 2003  
 Do not handle, analysis pending  
 Contact Jeff Weisman, NAVFAC MID LANT, 322-4342
- Is the area free of identifiable concerns, such as, signs of dumping of chemicals or debris, with regards to this site? If no, annotate these concerns in the comments section above, mark location of concern on map, and notify activity coordinator.

Yes	No
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

**Site Specific Questionnaire**

- Are the drainage ditches, as depicted on the figure, in good condition (free of sediment buildup and debris)? If no, describe condition of the drainage ditch, mark deficient location(s) on map, and notify activity coordinator.
- Are site monitoring wells, as depicted on the figure, in good condition and appear to be locked? (i.e. damaged protective posts and/or well head/casing) If no, describe condition of the deficient monitoring well(s), mark location of deficient monitoring well(s).

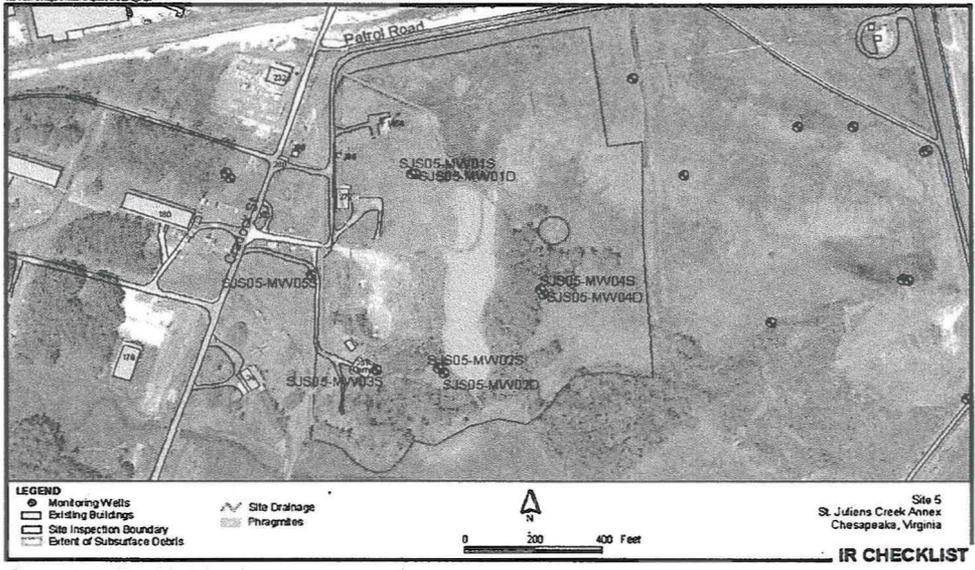
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>

Inspection performed by: (Print and sign) Rebekah Ives Rebekah Ives  
 Date: 9/10/05

**Site 5 - Burning Grounds**  
**St. Juliens Creek Annex, Chesapeake, Virginia**

Description: Site 5 is the former Burning Grounds consisting of approximately 21 acres adjacent to Cradock Street in the northern portion of the Annex. The site is located on fill material which reportedly originated from the Southern Branch of the Elizabeth River. The exact start and closure dates of the Burning Grounds are unknown, although it reportedly operated between the 1930s and 1970s where waste ordnance materials were disposed by open burning. In 1977, the ground surface at Site 5 was burned with straw, diced, and burned again in an effort to remediate the soil. Wastes disposed include ordnance materials such as black powder (mixture of charcoal, nitrate, and sulfur), smokeless powder (nitrocellulose), Explosive D (ammonium picrate), Composition A-3 (contains RDX and wax), tetryl, trinitrotoluene (TNT), and fuzes. Other wastes consisted of carbon tetrachloride, trichloroethene, paint sludge, pesticides, and various types of refuse. The amount of ordnance disposed of varied from year to year and there is insufficient information to calculate waste volume.

The site currently consists of an open field with the southwestern portion overgrown with phragmites. A significant portion of the south-central area of the site is covered with a layer of gravel. Surface water at Site 5 drains either naturally or through unlined shallow man-made drainage ditches to tidally influenced Blows Creek, which eventually meets with the Southern Branch of the Elizabeth River. There is currently no fencing or signs posted.



Comments: (Provide related question number for each comment)

One bollard down at MW055.  
 Protective casing will not close seemingly @ MW025 / MW020

**General Questionnaire**

- 1 Is the area free of any indication of recent and/or current intrusive activities within the site boundary, as depicted on the figure, or in the immediate vicinity of the site? If no, mark location of intrusive activities on figure, note extent and purpose.
- 2 Is the area free of storage of any investigative derived waste (IDW) on site? If no, mark location of IDW on figure, note its condition in the comment section below, and notify activity coordinator. Indicate if IDW is properly labeled, per example below:  
 Investigative Derived Waste  
 Purge water from Site 5  
 January 28, 2003  
 Do not handle, analysis pending  
 Contact Jeff Weisman, NAVFAC MID LANT, 322-4342
- 3 Is the area free of identifiable concerns, such as, signs of dumping of chemicals or debris, with regards to this site? If no, annotate these concerns in the comments section above, mark location of concern on map, and notify activity coordinator.

Yes	No
X	
X	
X	

**Site Specific Questionnaire**

- 4 Are site monitoring wells, as depicted on the figure, in good condition and appear to be locked? (i.e. damaged protective posts and/or well head/casing) If no, describe condition of the deficient monitoring well(s), mark location of deficient monitoring well(s).

Yes	No
	X

Inspection performed by: (Print and sign) Rebekah Ives Rebekah Ives  
 Date: 9/6/08

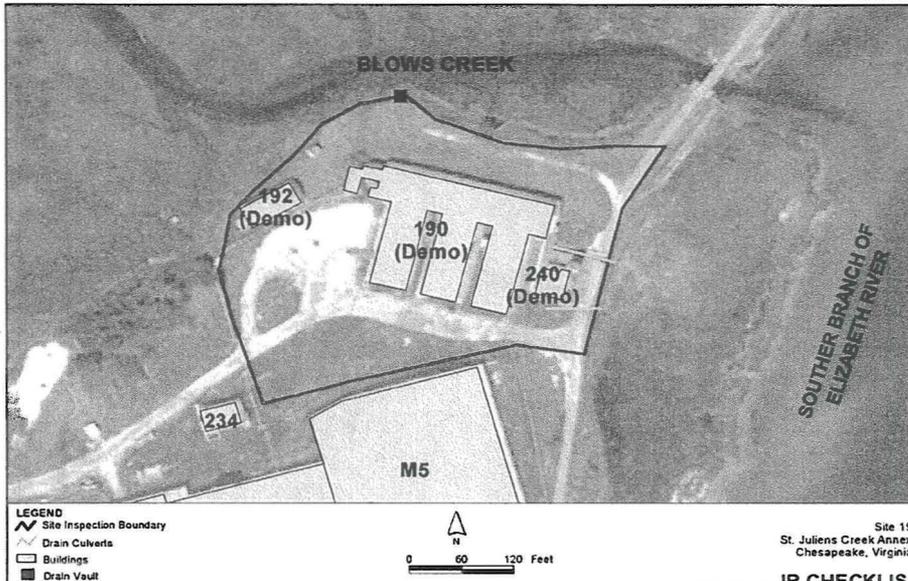
IR CHECKLIST

**Site 19 - Building 190**

**St. Juliens Creek Annex, Chesapeake, Virginia**

Description: Former Building 190 is located just south of the confluence of Blows Creek and the Southern Branch of the Elizabeth River. Building 190 was constructed in 1942 as the Integrated Logistics Overhaul and Outfitting building and was connected to a rail line. The building was reportedly used for loading explosives into ammunition; including Explosive D and Composition A-3; until the 1970s. Building 190 was demolished in 2000. There are two concrete drainage channels, originating from the former Building 190 location, leading to the Southern Branch of the Elizabeth River and a drainage to Blows Creek.

The site currently consists of an open field. Some potential surface soil metals contamination and subsurface soil polycyclic aromatic



Site 19  
St. Juliens Creek Annex  
Chesapeake, Virginia

**IR CHECKLIST**

Comments: (Provide related question number for each comment)

*No comments*

**General Questionnaire**

- 1 Is the area free of any indication of recent and/or current intrusive activities within the site boundary, as depicted on the figure, or in the immediate vicinity of the site? If no, mark location of intrusive activities on figure, note extent and purpose.
- 2 Is the area free of storage of any investigative derived waste (IDW) on site? If no, mark location of IDW on figure, note its condition in the comment section below, and notify activity coordinator. Indicate if IDW is properly labeled, per example below:  
Investigative Derived Waste  
Soil cuttings from Site 19  
January 28, 2003  
Do not handle, analysis pending  
Contact Jeff Weisman, NAVFAC MID LANT, 322-4342
- 3 Is the area free of identifiable concerns, such as, signs of dumping of chemicals or debris, with regards to this site? If no, annotate these concerns in the comments section above, mark location of concern on map, and notify activity coordinator.

Yes	No
X	

X	
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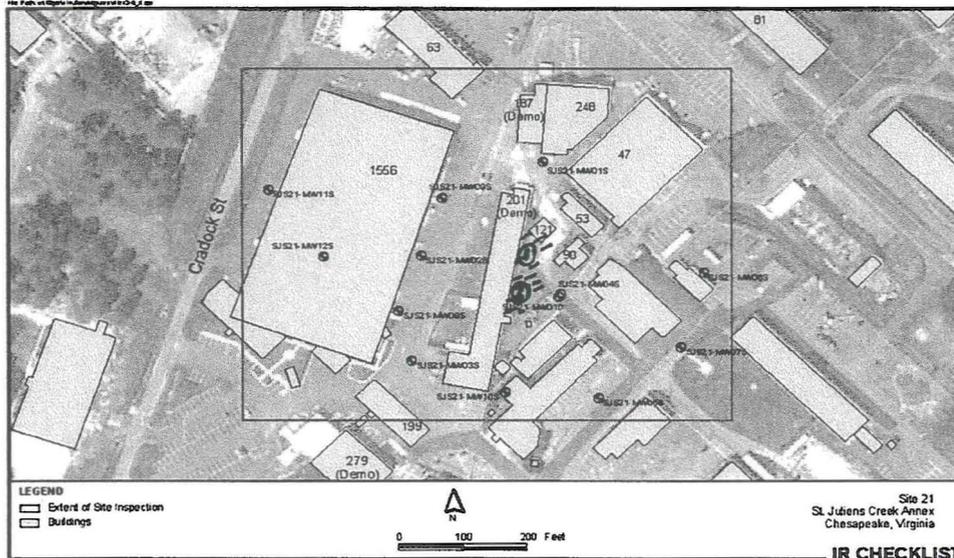
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Inspection performed by: (Print and sign)	<i>Rebekah Ives</i>	<i>Rebekah Ives</i>
Date:	<i>9/16/05</i>	

**Site 21 - Building 187**  
**St. Juliens Creek Annex, Chesapeake, Virginia**

Description: Site 21 (former Building 187 Soil Staining) is located in the southwestern portion of the Annex. This building was a locomotive shed used for maintenance. In 1981, the area around Building 187 was reportedly saturated with oil. Rail lines entered the building and a concrete maintenance pit was present for servicing rail cars. Investigations conducted at Site 21 also encompass former Site 11 (Building 53), an electrical shop where trichloroethene (TCE) and other solvents were reportedly disposed of on the railroad track bed. Building 187 was demolished in 2003 and the pit was fractured and backfilled.

The site currently consists of an industrial area, primarily asphalt-paved. Elevated concentrations of TCE are present in shallow groundwater and storm water in the Site 21 vicinity. There is currently no fencing or signs posted.



IR CHECKLIST

Comments: (Provide related question number for each comment)

①/2 - Construction still ongoing between Bldg. 54 + 155G. Two holes have been dug for stormwater line repair. First hole approximately 15' x 5' + 8' x 12'. ② has possible groundwater in it.

**General Questionnaire**

- 1 Is the area free of any indication of recent and/or current intrusive activities within the site boundary, as depicted on the figure, or in the immediate vicinity of the site? If no, mark location of intrusive activities on figure, note extent and purpose.
- 2 Is the area free of storage of any investigative derived waste (IDW) on site? If no, mark location of IDW on figure, note its condition in the comment section below, and notify activity coordinator. Indicate if IDW is properly labeled, per example below:  
 Investigative Derived Waste  
 Purge water from Site 21  
 January 28, 2003  
 Do not handle, analysis pending  
 Contact Jeff Weisman, NAVFAC MID LANT, 322-4342
- 3 Is the area free of identifiable concerns, such as, signs of dumping of chemicals or debris, with regards to this site? If no, annotate these concerns in the comments section above, mark location of concern on map, and notify activity coordinator.

Yes	No
	X

X	
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X	
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**Site Specific Questionnaire**

- 4 Are site monitoring wells, as depicted on the figure, in good condition and appear to be locked? (i.e. damaged protective posts and/or well head/casing) If no, describe condition of the deficient monitoring well(s), mark location of deficient monitoring well(s).

X	
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Inspection performed by: (Print and sign) Rebekah Ives Rebekah Ives  
 Date: 9/16/05