

IR Site Inspections - 2nd Quarter 2005

St. Juliens Creek Annex, Chesapeake, Virginia

PREPARED FOR: Bob Schirmer/NAVFAC Mid-Atlantic

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DATE: June 27, 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 June 7, 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 identify the potential issues observed during the inspections and provide recommendations for remedy. The site-specific inspection checklists are included as Attachment A.

Site 2 - Waste Disposal Area B

- One drum containing investigation-derived purge water and eighteen wood pallets from previous investigation-derived waste (IDW) staging was observed at Site 2. CH2M HILL will coordinate IDW disposal and removal of the pallets.
- 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.
- Several areas of debris were observed:
 - A pile of wood debris was observed in the wooded area west of the inlet.
 - Concrete debris was observed in the proximity of SJS02-MW05D.

- Corrugated metal debris was observed in the inlet area south of SJS02-MW09S.
- Large wooden beams (1.5' diameter and 15' long) were observed in the area of SJS02-MW11S.
- Metal rods were observed in the vicinity of SJS02-MW10S.

This debris appears to be part of the historical waste disposal activities at Site 2. The site should be assessed during the next quarterly site inspection to ensure that no additional waste disposal is occurring.

- The monitoring wells were in good condition overall. The following potential issues were observed:
 - Protective casing and will not close completely: SJS02-MW02S
 - One bollard down: SJS02-MW05S

CH2M HILL is conducting a facility-wide monitoring well survey and will replace the protective casing lid at SJS02-MW02S and repair the downed bollard at SJS02-MW05S. 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. It is recommended that these areas are assessed during subsequent inspections to evaluate if there is a need to fill the depressions or provide drainage from these areas to 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 issues 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 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 (September 2005).

- Damage to the perimeter road in the vicinity of SJS04-MW04S was observed. It is recommended that the road be repaired when activities at Site 4 have concluded.
- Debris was observed between the facility fence and silt fence in the area of SJS04-MW03D. It is recommended that the debris be removed and properly disposed of off-site.
- The monitoring wells were in good condition overall. The following potential issues 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 replaced. The condition of the wells should be monitored during subsequent inspections.

Site 5 – Burning Grounds

- Uncovered concrete vaults (3' x 3') containing trash were observed south of Building 272. It is recommended that the trash be removed from these vaults and properly disposed of off-site. Furthermore, a cover should be placed over these vaults to prevent the further dumping of trash and to prevent any health and safety incidents from occurring.
- Tire ruts were observed paralleling the Patrol Road. 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.
- Several areas of debris were observed:
 - Metal debris, columns, and tires were observed in the clearing east of SJS05-MW05S.
 - Wood, concrete, and metal debris were observed in a depression west of SJS05-MW03S and metal debris was observed east of SJS05-MW03S.
 - A dirt pile with metal debris was observed near the intersection of Cradock Street and the Patrol Road.

This debris appears to be part of the historical waste disposal activities at Site 5. The site should be assessed during the next quarterly site inspection to ensure that no additional waste disposal is occurring.

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

CH2M HILL is conducting a facility-wide monitoring well survey and will replace the protective casing lids at SJS05-MW02S and SJS05-MW02D and remove the wood base from SJS05-MW05S as it does not affect the monitoring well integrity. The condition of the monitoring wells should be assessed during subsequent inspections.

Site 19 – Building 190

- Tire ruts were observed in the grass field and 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 road is in poor condition. The area is no longer active and the road is not often utilized; therefore, it is recommended that the road condition be assessed during subsequent inspections.

Site 21 – Building 187

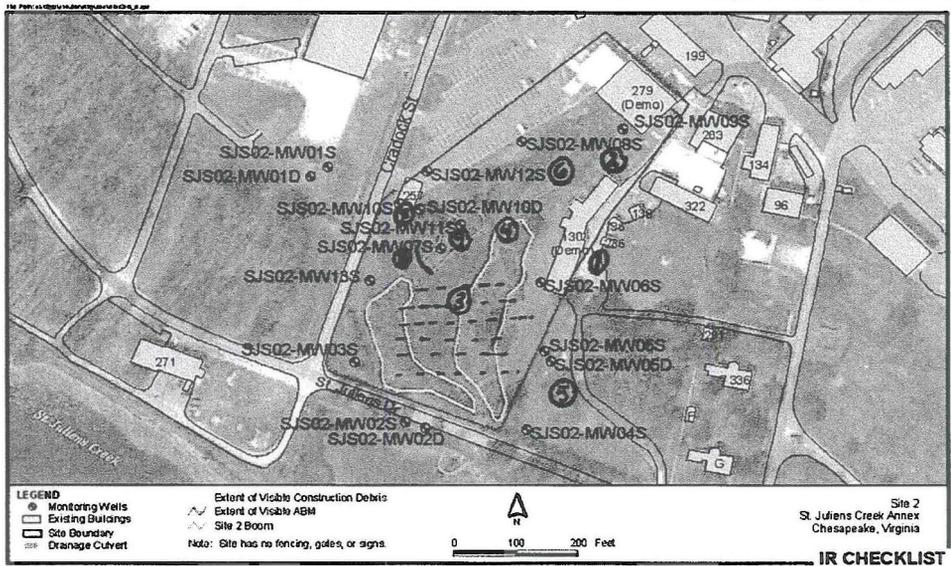
- Construction equipment and an excavation (approximately 10' x 4' x 4') was observed east of monitoring well SJS21-MW09S. It appears that a sewer line repair is underway. The excavation is located in an area of potential groundwater contamination. No one was present at the time of the inspections. The groundwater data was provided to the Navy on June 8, 2005 and the data indicated that no risks have been identified in the immediate area of the excavation. As a health and safety precaution, air monitoring for VOCs was recommended. Additionally, an updated IR site map was created to encompass the entire Site 21 area and provided to the Navy on June 8, 2005.
- As the Site 21 area is active, there were several areas of storage and debris observed:
 - A roll-off dumpster, downed trees, and an old military truck were observed in the vicinity of SJS21-MW05S.
 - A pile of sand was observed west of Building 1556.
 - Miscellaneous debris was observed in the southeast corner of the site.
 - Miscellaneous objects such as wire spools, telephone poles, and wood pallets were observed around Building 47.

The area should be assessed during subsequent inspections to ensure there are no potential impacts to Site 21.

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.



IR CHECKLIST

Comments: (Provide related question number for each comment)

- ① Drum - purge water (2)
- ② 10 Total wood pallets + two railroad ties (3)
- ③ General rutting
- ④ Pile of wood debris in woods (3)
- ⑤ Concrete debris (3)
- ⑥ Corrugated metal debris (3)
- ⑦ Metal Rod debris (3)
- ⑧ Old silt fence
- ⑨ Wooden beams by MW1S

Wells (4)

SJS02-MW02D: No bollards, located near roadway
 SJS02-MW02S: No bollards, located near roadway, hinge rusted - will not close all the way
 SJS02-MW05S: One bollard 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.

Yes	No
X	

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.

	X
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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.

	X
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Site Specific Questionnaire

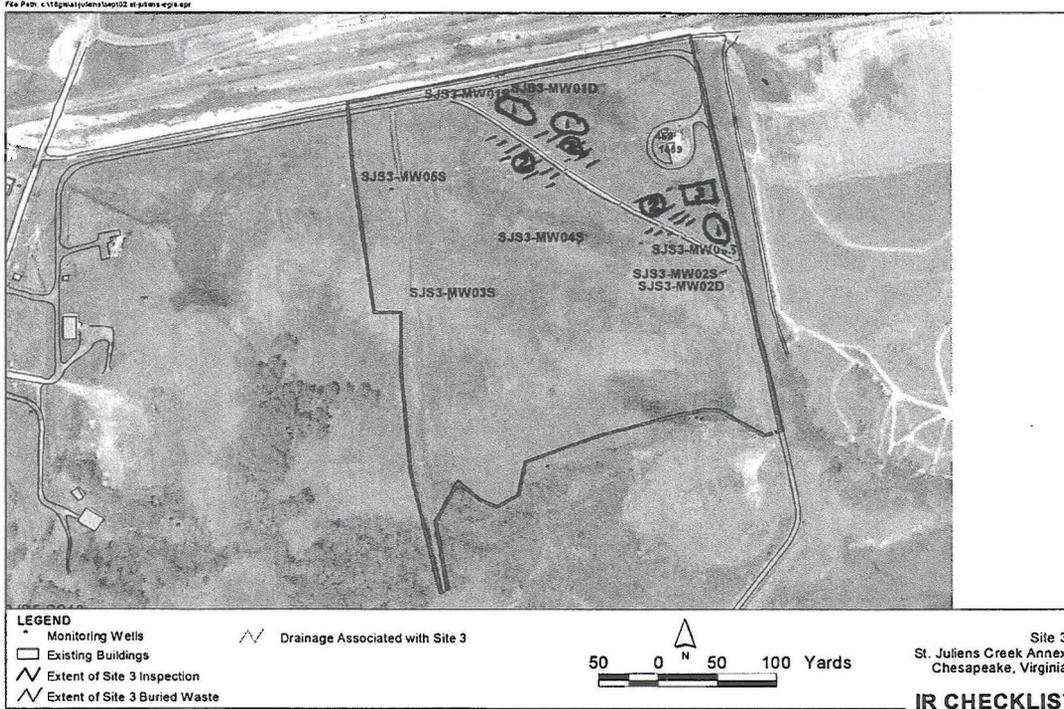
4 Are site monitoring wells, as depicted on the figure, in good condition and appear to be locked? (i.e. damaged protective posts and/or well head/casing) If no, describe condition of the deficient monitoring well(s), mark location of deficient monitoring well(s).

	X
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Inspection performed by: (Print and sign) Rebekah Ives / Rebekah Ives
 Date: 6/7/05

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 Ponded surface water (4)
 ② General rutting throughout site, some major
 ③ Construction trailer/staging area for Site 4 Remedial Action

Wells (5)
 SJS3-MW02P: 2 bent bollards, only 3 bollards
 -MW02S: only 3 bollards
 -MW03S: only 3 bollards, cap does not close
 -MW04S: only 3 bollards, one bent. Hinge rusted away, no longer attached
 -MW05S: one bollard down
 -MW06S: no bollards

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. | X | |
| 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 3
January 28, 2003
Do not handle, analysis pending
Contact Jeff Weisman, NAVFAC MID LANT, 322-4342 | X | |
| 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. | X | |

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. | | X |
| 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). | | X |

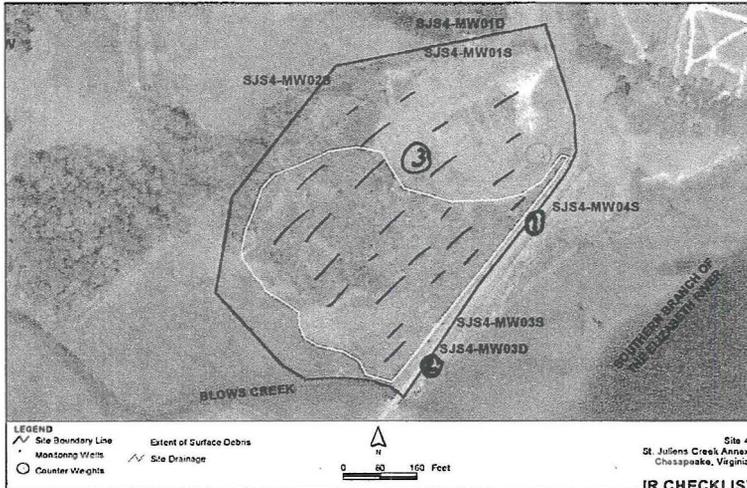
Inspection performed by: (Print and sign) Rebekah Ives / Rebekah Ives
 Date: 6/7/05

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 Damage to road from heavy equipment (1)
 ② Debris between metal + silt fence (3)
 ③ Ongoing Remedial Action Construction - soil cover construction (1)
 Wells (5)

SJS04 - MW01D: only 3 bollards
 - MW01S: only 3 bollards + down
 - MW02S: 3 bollards down
 - MW03S: hinge rusted off

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.

Yes	No
	X

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:

X	
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Investigative Derived Waste
 Purge water from Site 4
 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.

	X
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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.

X	
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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).

X	
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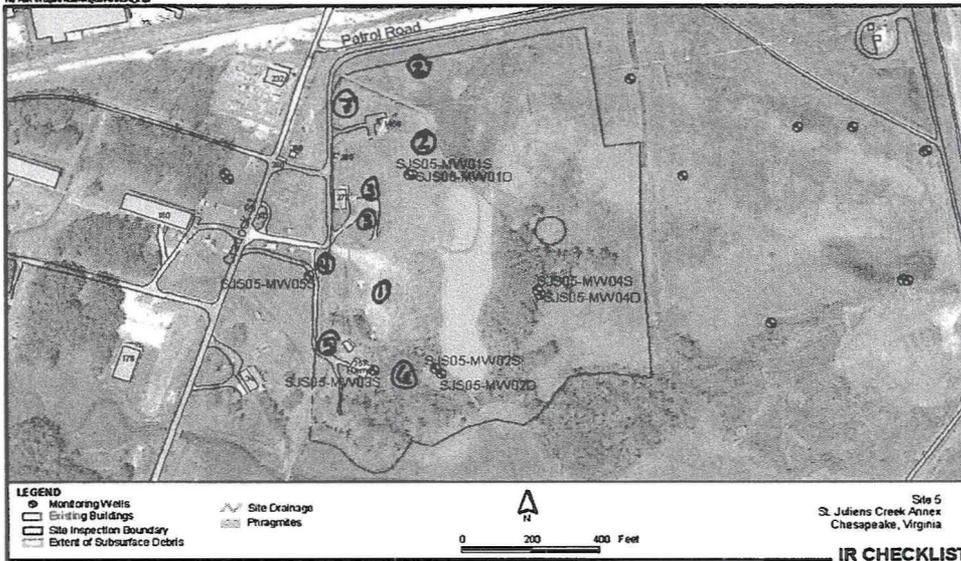
Inspection performed by: (Print and sign) Rebekah Ives / Rebekah Ives
 Date: 6/7/05

IR CHECKLIST

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)

- ① Metal debris, columns, + tires in clearing (3)
- ② tire ruts (3)
- ③ Uncovered concrete vaults south of building 272, contains trash + presents safety concern (3)
- ④ Construction cone in ditch (3)
- ⑤ Wood debris in hole, some concrete + metal debris (3)
- ⑥ Metal debris (3)
- ⑦ Dirt Pile + Metal debris on top (3)

Wells (4)

SJ505-MW010: no bollards
 - MW015: no bollards
 - MW070: no bollards, cap will not close

- MW075: No bollards, cap will not close
 - MW035: wood base separated from pad

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. Yes No
- 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: Yes No
- 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

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

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

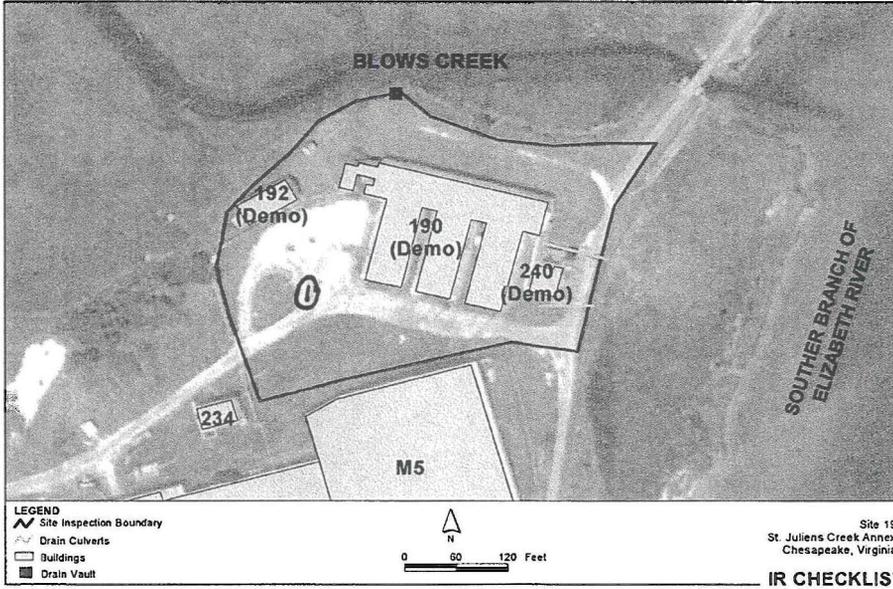
Date: 6/7/05

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



IR CHECKLIST

Comments: (Provide related question number for each comment)

- ① Some tire ruts
- ② Roads in poor condition

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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X	
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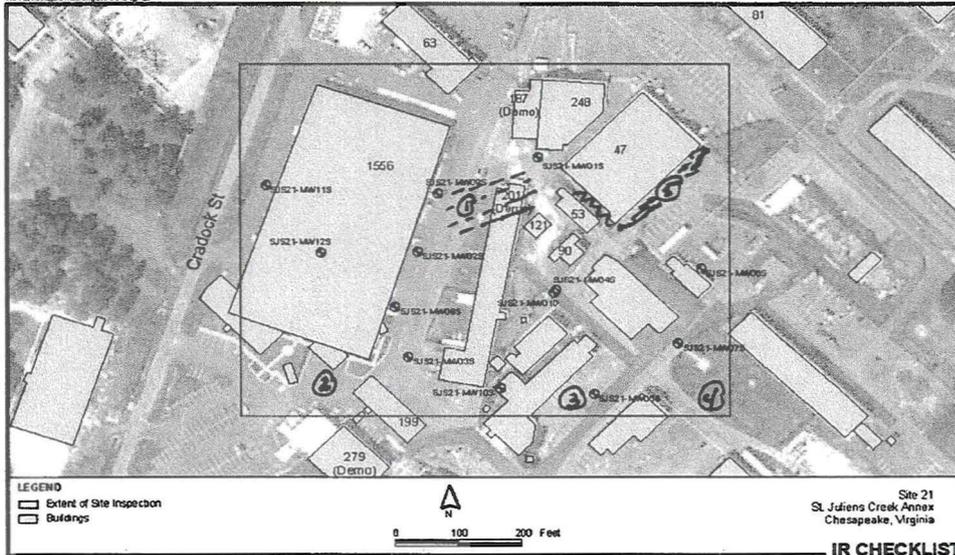
Inspection performed by: (Print and sign) Rebekah Ives / Rebekah Ives
 Date: 6/7/05

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.



Comments: (Provide related question number for each comment)

- ① Construction equipment + hole dug. Appears to be sewer line repair (1)
- ② Pile of sand
- ③ Roll-off dumpster, downed trees, + old military truck (1)
- ④ Miscellaneous debris (1)
- ⑤ Building 47 appears active + has lots of miscellaneous objects around: wire spools, telephone poles, + wood pallets, etc. (1)

IR CHECKLIST

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: 11/7/05