

IR Site Inspections – 4th Quarter 2005

St. Juliens Creek Annex, Chesapeake, Virginia

PREPARED FOR: Agnes Sullivan/NAVFAC Mid-Atlantic

INSPECTIONS CONDUCTED BY: Rebekah Ives/CH2M HILL - VBO
Agnes Sullivan/NAVFAC Mid-Atlantic

DATE: January 5, 2006

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 December 14, 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 resolution by site. The site-specific inspection checklists are included as an attachment.

Site 2 – Waste Disposal Area B

At the time of the inspection, there were no signs of unauthorized intrusive activities within the site or in the vicinity. Soil disturbances in the form of tire ruts were noted in the field adjacent to monitoring wells SJS02-MW05S and SJS02-MW05D. However, vegetative regrowth in this area is evident. This area should be assessed during the next quarterly site inspection to ensure the continuation of vegetative re-growth. A wood pallet was also observed in the same vicinity.

Nine drums of investigation derived waste (IDW) (4 hazardous water, 3 non-hazardous water, 2 non-hazardous soil) from the Site 21 temporary and monitoring well installation activities conducted in October and November 2005 are currently being staged on pallets as indicated on the IR checklist. These drums are scheduled to be removed by an IDW subcontractor by the end of January 2006.

All of the Site 2 monitoring wells, including casings and bollards were in good condition. Furthermore, the signs indicating the site boundary were in good condition.

Site 3 – Waste Disposal Area C

At the time of the inspection, there were no signs of unauthorized intrusive activities and no IDW storage was observed within the site or in the vicinity. Various tire ruts were observed throughout the site. However, vegetative re-growth is evident. The area should be assessed during the next quarterly site inspection to ensure the continuation of vegetative re-growth.

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 at Site 4, located just south of Site 3.

The monitoring wells SJS03-MW02S, MW02D, MW03S, MW04S, and MW05S at Site 3 were abandoned in November 2005. These areas were graded with topsoil and then seeded. Re-vegetation is apparent in most areas. These areas should be assessed during the next quarterly site inspection to ensure the continuation of vegetative re-growth. SJS03-MW01S and MW01D were not abandoned and remain in-place as part of the facility-wide background monitoring well network.

Site 4 – Landfill D

At the time of the inspection, there were no signs of unauthorized intrusive activities and no IDW storage was observed within the site or in the vicinity. The soil cover at Site 4 was completed in October 2005. Damage to the perimeter road in the vicinity of SJS04-MW04S and south of SJS04-MW03D was observed. The perimeter road leads to an impassible bridge and is therefore not regularly used in this location. In addition, the condition of the road has no impact on the environmental status of the site. Therefore, repairs are not recommended at this time.

The drainage ditches were in good condition and all monitoring wells, including casings and bollards were in good condition. Furthermore, the signs indicating the site boundary and the fence enclosing the site were in good condition.

Site 5 – Burning Grounds

At the time of the inspection, there were no signs of unauthorized intrusive activities and no IDW storage was observed within the site or in the vicinity. The area was free of identifiable concerns. All of the Site 5 monitoring wells, including casings and bollards were in good condition. Furthermore, the signs indicating the site boundary were in good condition.

Site 19 – Building 190

At the time of the inspection, there were no signs of unauthorized intrusive activities and no IDW storage was observed within the site or in the vicinity. The area was free of identifiable concerns.

Site 21 – Building 187

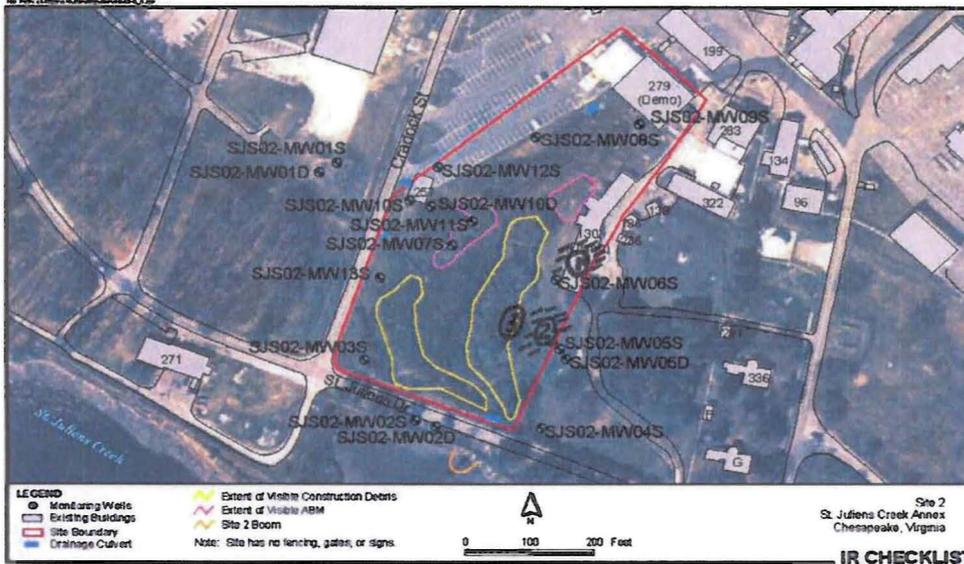
At the time of the inspection, there was evidence of intrusive activities within the site boundary. Construction equipment and one open excavation (approximately 12' x 8' x 5') was observed east of monitoring well SJS21-MW09S. Replacement of the Site 21 storm water grates is also being conducted. According 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. The most recent data, collected in October and November 2005 has also been provided to the Navy.

No IDW storage was observed within the site boundary and all of the Site 21 monitoring wells were in good condition.

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 are signs posted around the perimeter of the site.



IR CHECKLIST

Comments: (Provide related question number for each comment)

- ① IDW drums staged on pallets from site 21 well installation activities - Quest. 2
- ② General rutting in field - Quest. 3
- ③ Wood pallet - Quest. 3

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 2
 January 28, 2003
 Do not handle, analysis pending
 Contact Agnes Sullivan, NAVFAC MID LANT, (757) 444-4120
- 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

- 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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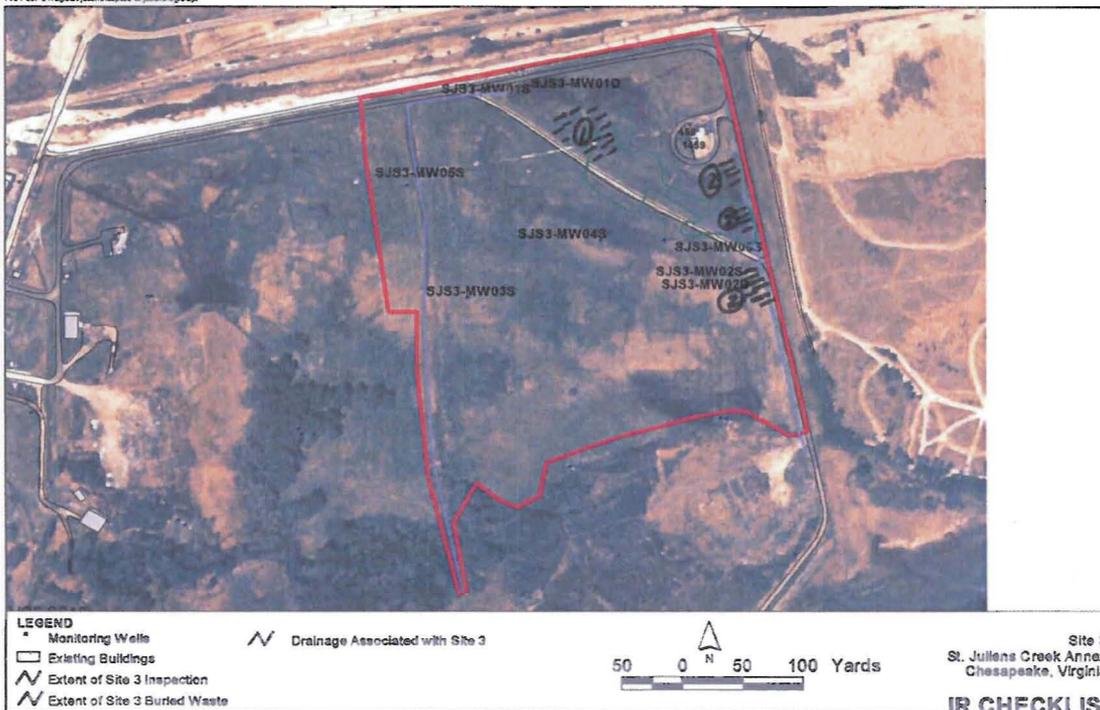
Inspection performed by: (Print and sign)

Date: 12/14/05 Rebekah Eves Rebekah Eves

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.

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Comments: (Provide related question number for each comment)

- ① General tire rutting - Quest. 3
- ② Ponding on-site due to poor drainage - Quest. 4

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 Agnes Sullivan, NAVFAC MID LANT, (757) 444-4120 | 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 |
| 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)

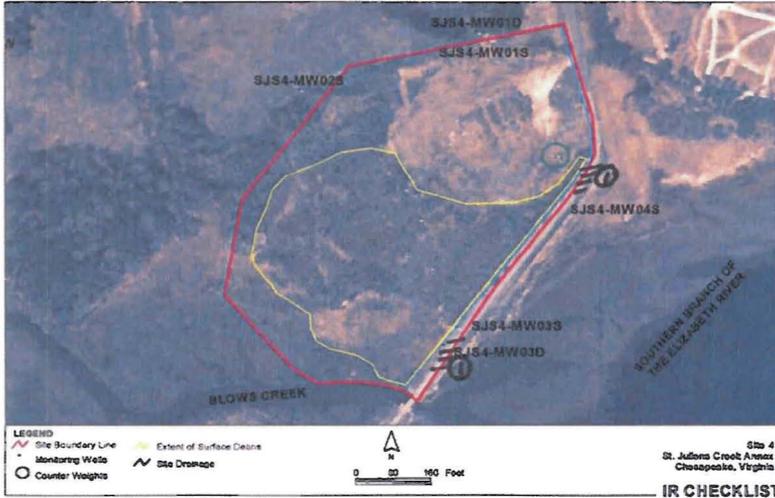
Date: 12/14/05 Rebekah Ives Rebekah Ives

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. Fencing is installed around the perimeter of the site with signs posted.



Comments: (Provide related question number for each comment)

① Road needs repair - Quest. 3

IR CHECKLIST

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 4
January 28, 2003
Do not handle, analysis pending
Contact Agnes Sullivan, NAVFAC MID LANT, (757) 444-4120 | 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 | |
| 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)

Date: 12/14/05 *Rebekah Ives* *Rebekah Ives*

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 of 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 are signs posted around the perimeter of the site.



Comments: (Provide related question number for each comment)

No comments

IR CHECKLIST

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:
Investigative Derived Waste
Purge water from Site 5
January 28, 2003
Do not handle, analysis pending
Contact Agnes Sullivan, NAVFAC MID LANT, (757) 444-4120 | <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 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"/> |
|--|-------------------------------------|--------------------------|

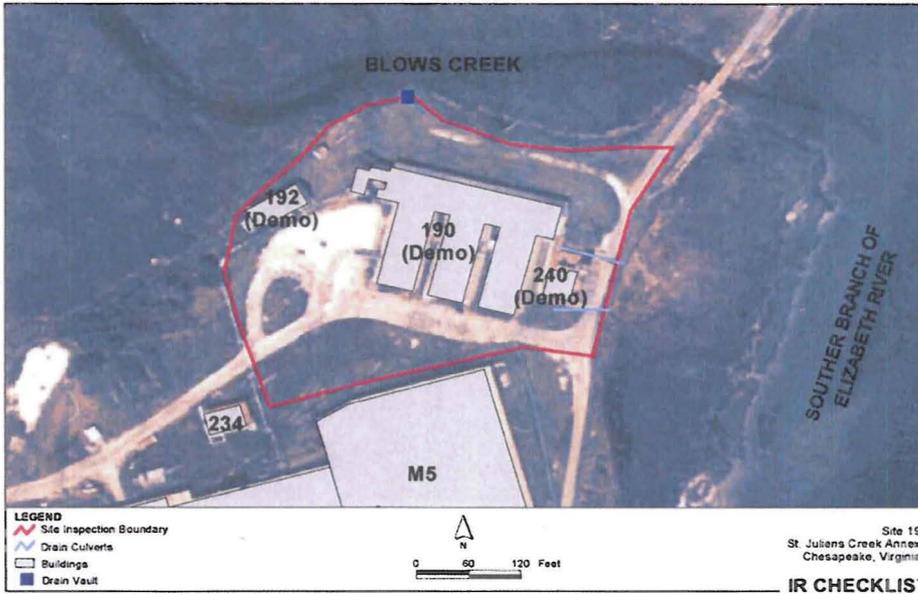
Inspection performed by: (Print and sign) Rebekah Ives Rebekah Ives
 Date: 12/14/05

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 hydrocarbon (PAH) contamination is planned for removal. There is currently no fencing or signs posted.



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:

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

<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Investigative Derived Waste
 Soil cuttings from Site 19
 January 28, 2003
 Do not handle, analysis pending
 Contact Agnes Sullivan, NAVFAC MID LANT, (757) 444-4120

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"/>
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Inspection performed by: (Print and sign)

Rebekah Ives

Rebekah Ives

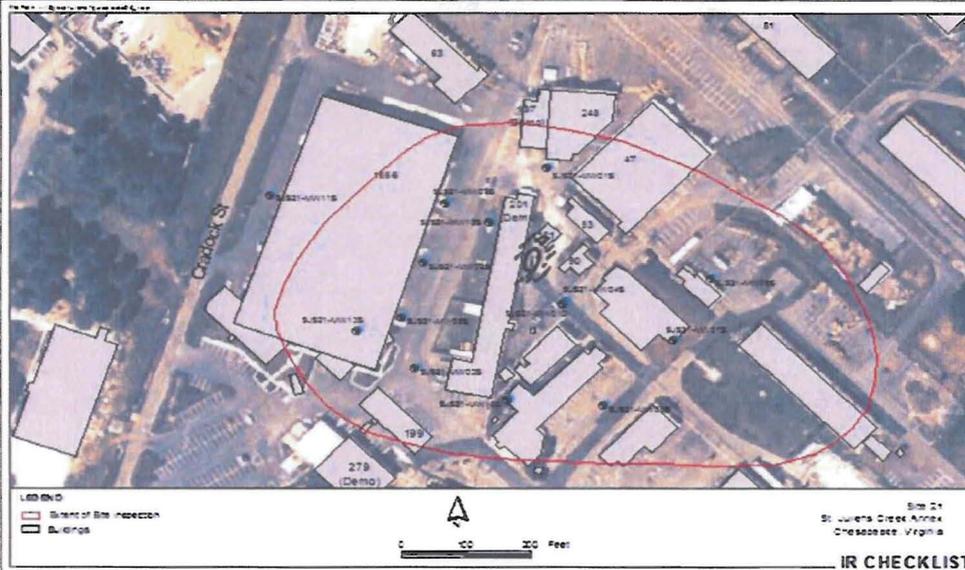
Date: *12/14/05*

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 still ongoing adjacent to building 121 for stormwater line repair. It also appears that the stormwater grates are being replaced. The excavation hole is approximately 12'x8'x5'. - Quest. 1

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 21
January 28, 2003
Do not handle, analysis pending
Contact Agnes Sullivan, NAVFAC MID LANT, (757) 444-4120 | 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 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)

Date: 12/14/05 Rebekah Ives Rebekah Ives