

IR Site Inspections – 1st Quarter 2006

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: March 31, 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 March 7, 2006. 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 still noted in the field adjacent to monitoring wells SJS02-MW05S and SJS02-MW05D, as they were in the last inspection. However, vegetative regrowth in this area continues to be 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.

Four wood pallets and two wood beams were located near the southeastern corner of previously demolished Building 130. These pallets were utilized during the Site 21 temporary and monitoring well installation activities conducted in November 2005. They will be utilized during upcoming IR site activities and taken off-site at the demobilization of the project.

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. The tire-ruts noted during previous inspections have been sufficiently covered by vegetative re-growth.

Ponded surface water was observed in two locations paralleling the cut-through road at Site 3. Additionally an area of depressed ground with wetland type vegetative growth was evident along the eastern drainage ditch. At the southern end of the Site 3 eastern drainage ditch, the culvert appeared 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.

Additionally, the monitoring wells SJS03-MW02S, MW02D, MW03S, MW04S, and MW05S at Site 3 that were abandoned in November 2005 had sufficient vegetative cover.

The no action Record of Decision (ROD) for Site 3 was signed February 6, 2006; therefore, no subsequent inspections at the site will occur.

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. 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. However, nine piles of soil, (approximately 4' x 6' x 6') were observed in the southern portion of the site and in the vicinity of the metallic slag. The Navy representative had previously been identified of the situation and contacted the individual responsible.

Site 21 – Building 187

At the time of the inspection, there was evidence of intrusive activities within the site boundary. Construction equipment and two open excavations were observed. One excavation (approximately 12' by 8' by 5') was present during the last inspection east of monitoring well SJS21-MW09S. This excavation appeared to be in the same condition as

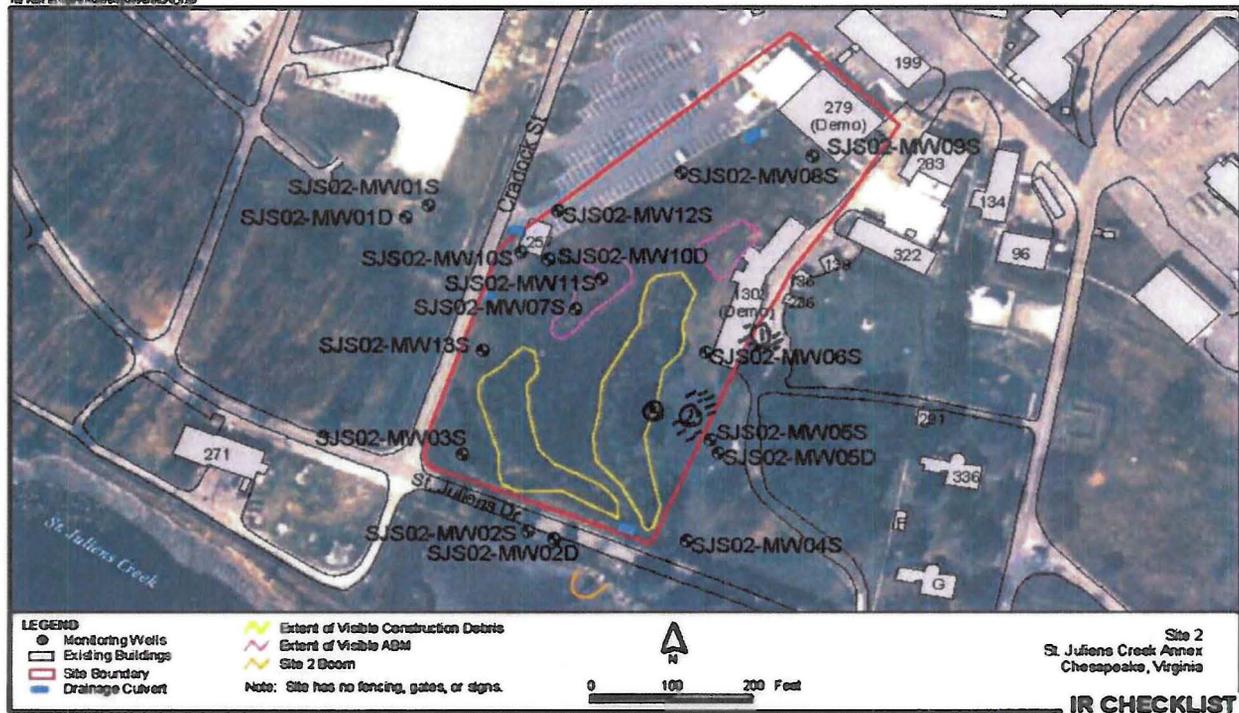
before, with the exception of some new trash. The new excavation was approximately 4' by 4' by 8' and had standing water in it. The excavation is located in an area of potential groundwater contamination. The existing groundwater and storm water analytical data, and a comparison of the groundwater data 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. The Navy will make further contact with the public works department.

Additionally, a 55-gallon Super D-3 Diesel engine oil drum is staged in the vicinity of SJS21-MS05S. The drum is properly labeled and staged on a pallet. No secondary containment was observed. The drum is approximately 30 feet from a flammable tanker truck. Between the two items is an Ingersoll-Rand generator labeled as an ignition source.

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 Craddock 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 - 4 wood pallets + 2 wood beams - Question #3
- ② - Tire ruts - Question #3
- ③ - Wood pallet - Question #3

General Questionnaire

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

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"/>
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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 Agnes Sullivan, NAVFAC MID LANT, (757) 444-4120

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

Site Specific Questionnaire

<input checked="" type="checkbox"/>	<input type="checkbox"/>
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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"/>
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5 Are the signs, in good condition (letters visible, and standing upright)? If no, describe condition of the signs, mark location(s) on map, and notify activity coordinator.

Inspection performed by: (Print and sign)	Rebekah Ives	<i>Rebekah Ives</i>
Date:	3/7/2006	

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.



IR CHECKLIST

Comments: (Provide related question number for each comment)

- ① Ponded areas on-site due to poor drainage - Question #4
- ② Depressed area w/ evidence of previous ponding - Question #4

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 3
 January 28, 2003
 Do not handle, analysis pending
 Contact Agnes Sullivan, NAVFAC MID LANT, (757) 444-4120
- 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
<input checked="" type="checkbox"/>	<input type="checkbox"/>

<input checked="" type="checkbox"/>	<input type="checkbox"/>
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<input checked="" type="checkbox"/>	<input type="checkbox"/>
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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.
- 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"/>
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<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Inspection performed by: (Print and sign) Rebekah Ives *Rebekah Ives*
 Date: 2/7/2006

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 1.5C

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.



Figure 3-1
 Site 4 Boundaries
 St. Juliens Creek Annex
 Chesapeake, Virginia

Comments: (Provide related question number for each comment)

Note: signs were in good condition - question #5

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

Yes	No
<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.

Yes	No
<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.

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>
- 5 Are the signs, depicted on the figure, in good condition (letters still visible, and standing upright)? If no, describe condition of the signs, mark location(s) on map, and notify activity coordinator.

Yes	No
<input checked="" type="checkbox"/>	<input type="checkbox"/>
- 6 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
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Inspection performed by: (Print and sign) *Rebekah Ives* *Rebekah Ives*
 Date: *3/7/2006*

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 are signs posted around the perimeter of the site.



Comments: (Provide related question number for each comment)

Note: signs in good 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.

Yes	No
<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:

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

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"/>
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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).

<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Inspection performed by: (Print and sign) Rebekah Ives Rebekah Ives
 Date: 03/07/2004

Site 19 - Building 190

St. Jullens 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.

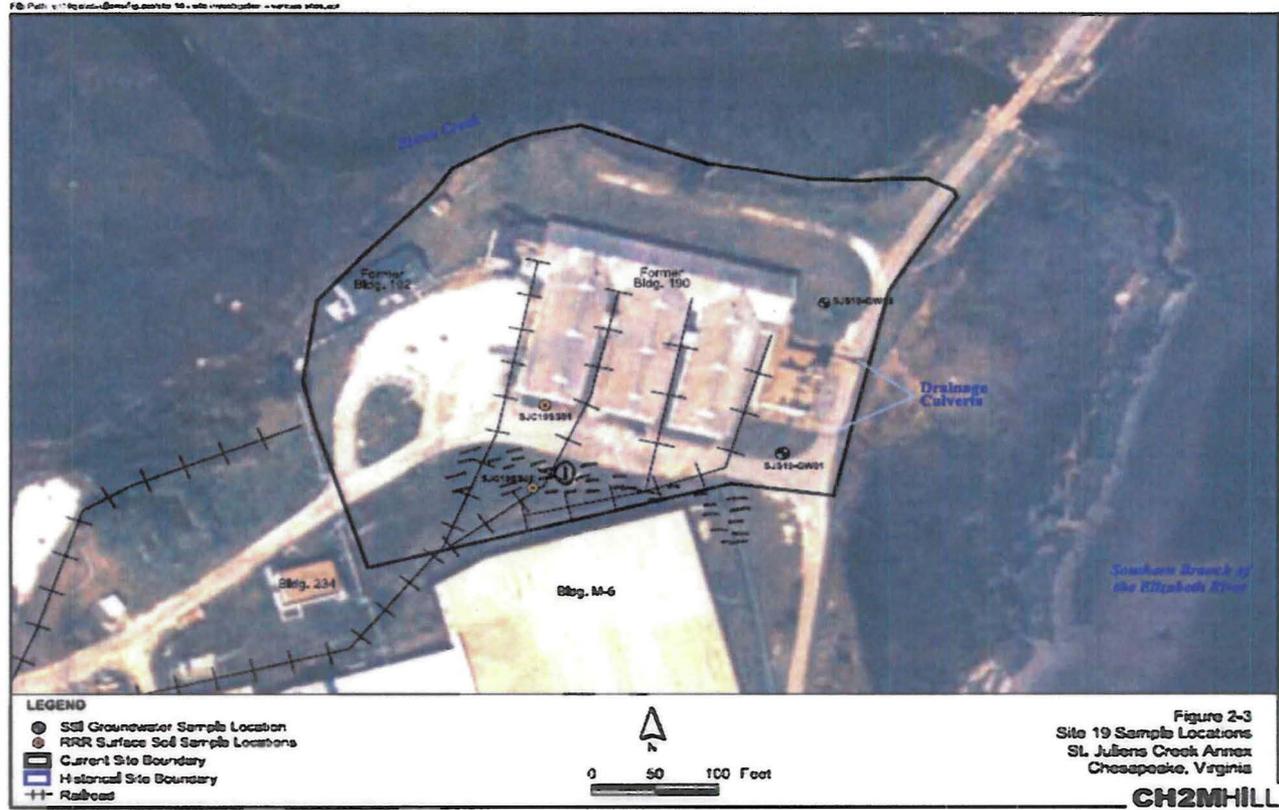


Figure 2-3
Site 19 Sample Locations
St. Jullens Creek Annex
Chesapeake, Virginia

CH2MHILL

Comments: (Provide related question number for each comment)

① - Nine piles of soil, approximately 4' x 6' x 6' around metallic slag area. - Question #3

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:

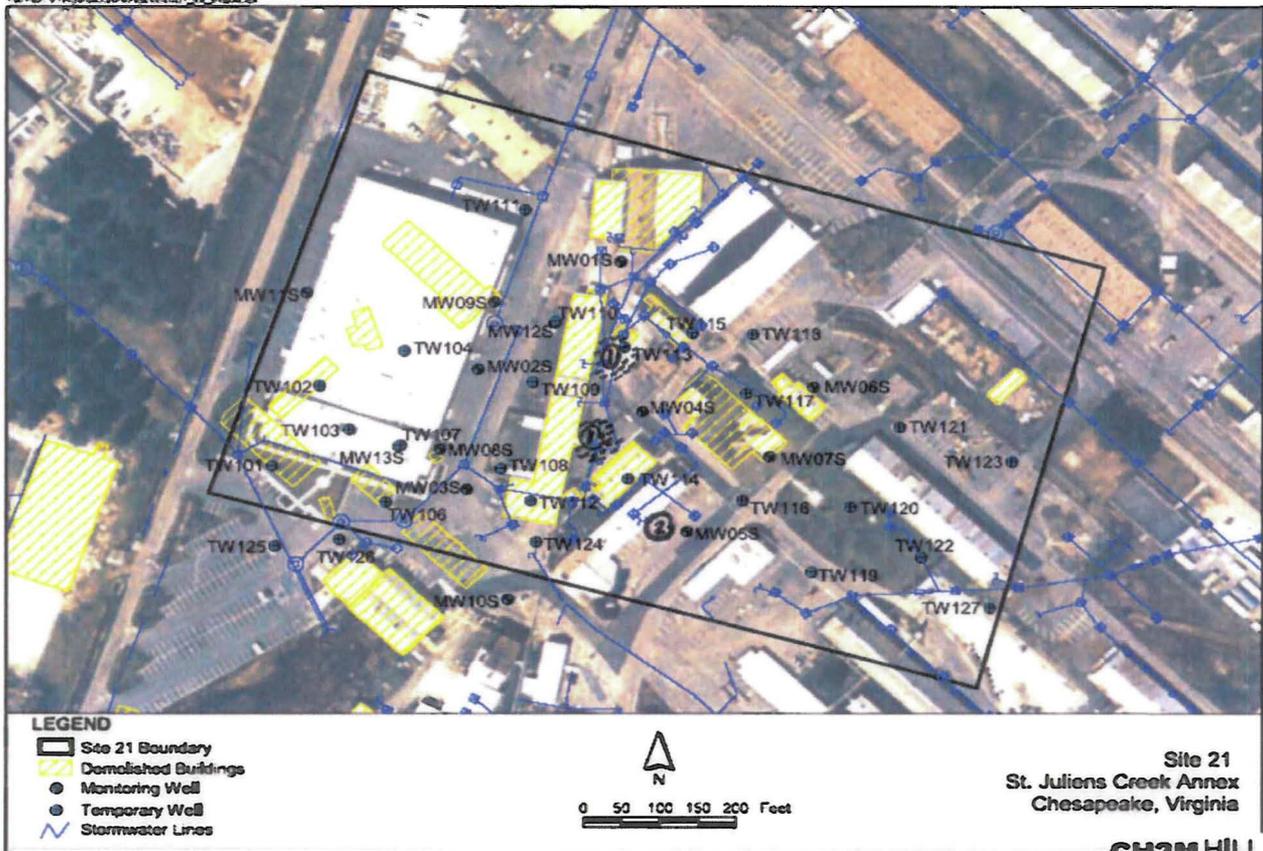
Investigative Derived Waste
Soil cuttings from Site 19
January 28, 2003
Do not handle, analysis pending
Contact Agnes Sullivan, NAVFAC MID LANT, (757) 444-4120 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3 Is the area free of identifiable concerns, such as, signs of dumping of 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 type="checkbox"/> | <input checked="" type="checkbox"/> |

Inspection performed by: (Print and sign) Rebekah Ives *Rebekah Ives*
Date: 3/7/2006

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.



Site 21
 St. Juliens Creek Annex
 Chesapeake, Virginia

CH2M HILL

Comments: (Provide related question number for each comment)

① - Excavation area to repair stormwater lines. Old excavation (12'x8'x5') still present w/ trash in hole. New excavation (24'x4'x8'). Standing H₂O in hole - construction equipment nearby - Question # 1.

② - 55 gallon Super D-5 Diesel engine oil drum staged by MW058. Drum approximately 20' S/E of flammable tankers. Between the two is an Ingersoll-Rand generator (ignition source). - Question # 2.

General Questionnaire

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

<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<input checked="" type="checkbox"/>	<input type="checkbox"/>
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<input checked="" type="checkbox"/>	<input type="checkbox"/>
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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 26, 2003
 Do not handle, analysis pending
 Contact Agnes Sullivan, NAVFAC MID LANT, (757) 444-4120

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.

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).

Inspection performed by: (Print and sign) Rebekah Ives Rebekah Ives
 Date: 3/7/2006