# 2023 SOIL COVER MONITORING AND MAINTENANCE SUMMARY REPORT

## GSA PROPERTY DO1MA001902 670 ARSENAL STREET WATERTOWN, MASSACHUSETTS



## Prepared by:

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Figure 1. Site Map

Figure 2. Watertown Arsenal – Former Watertown GSA Property Site FUDS #D01MA001902, Watertown, Massachusetts (USACE, 2023)

Figure 3. Site Visit Map Showing PCB and Cover Extents, Highlighted Eastern Swale with Discharge Pipe

#### **ATTACHMENTS**

Attachment A. Photographs

Attachment B. Soil Cover Inspection Checklist – 11 August 2023

#### 1. INTRODUCTION

This Soil Cover Monitoring and Maintenance Summary Report was prepared in compliance with the Final Operation and Maintenance (O&M) Plan dated 16 April 2014 for the Watertown Arsenal - General Services Administration (GSA) Property (D0MA0019 Project 02) located at 670 Arsenal Street, Watertown, Middlesex County, Massachusetts (the site). This report includes:

- Date of the inspections and name of personnel conducting the inspections;
- · A brief summary of observations;
- Summary of maintenance activities;
- Representative photographs of the soil cover area and any deficiencies (with recommendations to correct any deficiencies); and
- A determination as to whether or not the land use controls are still being fully implemented.

#### 2. BACKGROUND

The site is located at 670 Arsenal Street, in the eastern portion of the town of Watertown in Middlesex County, Massachusetts (Figure 1) (USACE, 2012). It was part of the former U.S. Army Watertown Arsenal, and was referred to as the "Northeast Area" and the Federal Property Resources Center. The site contains two parcels, the 11.91-acre GSA Property parcel, and the 1-acre, Metropolitan District Commission (MDC), now known as the MassDCR-owned, Property 20 parcel (Figure 2).

The site contains vacant land classified open space/conservancy by the City of Watertown with adjacent land considered industrial, mixed use, and residential (City of Watertown, 2022). The boundaries are heavily vegetated, and the interior contains an engineered, compensatory wetland and maintained soil cover (Figure 3). Structures related to former site operations were removed as part of the remedy, and there is no active use of the property. The nearest located water supply wells are over 1.4 miles north of the site in central Watertown, (MassMapper, 2023, USACE, 2012). The site is not within a current or a potential Drinking Water Source Area and is not within a surface water protection zone. Public access is restricted by a fence and locked gates constructed by Massachusetts Department of Conservation and Recreation (MassDCR). Historically, portions of the site were classified as both State and Federal wetlands. MassDCR and the City of Watertown plan to utilize this area as greenspace for passive recreation public access.

The MassDCR owned nearly 12-acre site is bounded on the west by residential properties and parkland, on the south by Arsenal Street and further south by MassDCR-owned parkland, on the east by Greenough Boulevard (Blvd.) and parkland owned by MassDCR, and on the northwest by condominiums, apartments, and businesses. Upgradient properties contain light industrial and commercial uses, as well as two condominium complexes and a parking lot. The Arsenal Mall, the Watertown Mall, Arsenal Park, and MassDCR parkland occupy the land area to the south, southwest of the site. The area to the east and northeast of the site contains recreational pedestrian paths, open and wetland areas.

The property was filled to facilitate development during World War II and was subsequently used by the Army and by the GSA for storing and managing various materials and equipment. Prior to the Army's transfer of the property to GSA, the Nuclear Regulatory Commission (NRC) issued the U.S. Army a license in 1961 for processing the depleted Uranium (DU) within an area at the site referred to as the former burn box area. The GSA also leased portions of the property to various parties, including automobile dealers and a television production company. One building was used as a police firing range and to store flammable materials (USACE, 2012).

#### 3. FIVE YEAR REVIEW

USACE completed the second Five-Year Review (FYR) on 25 July 2023 pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Contingency Plan (NCP)(40 CFR Section 300.430(f)(4)(ii)) and considering Department of Defense, Formerly Used Defense Sites (FUDS), and U.S. Environmental Protection Agency (EPA) policy. FYRs are required for this site by statute because the selected soil cover remedy for site results in contaminants remaining at concentrations exceeding unlimited use and unrestricted exposure to site media. This was the second five-year review for the site.

The FYR concluded the remedy is still protective of human health and the environment. The cap was found to be in similar condition to post construction condition with no major settlements, alterations, or major daylighting of the liner; therefore, eliminating the contaminated soil exposure pathway. The Former GSA Property's revised Grant of Environmental Restriction dated January 2021 is functioning as intended as it has been effective in preventing exposure through covenants and restrictions, annual maintenance, monitoring and reporting. (USACE, 2023). The Decision Document's soil and surface water Applicable or Relevant and Appropriate Requirements (ARARs) have been met.

#### 4. COMPENSATORY WETLAND

As part of the remedy, a compensatory wetland was designed to replace the functions and values of the former wetland areas that were impacted in order to excavate and cover contaminated soils at the site. The compensatory wetland is approximately two acres in size and includes an interspersion of open water, emergent, wet meadow, and forested wetland cover types (USACE, 2018). USACE was responsible for inspections of the compensatory wetland and that corrective actions were complete for the initial five-year period. Beginning in 2019, in accordance with the O&M Plan, the property owner, the Department of Conservation and Recreation (MassDCR), assumed responsibility for the maintenance of the compensatory wetland (Charter, 2014a).

#### 5. MONITORING AND MAINTENANCE

USACE performed the Annual Soil Cap Inspection on 11 August 2023. Representative photographs USACE took during the site walk are included in Attachment A. The Soil Cover Inspection Checklist USACE completed is attached as Attachment B.

#### 5.1 Observations

USACE met MassDCR and MassDCR's contractor, Tighe & Bond, at the site to complete the annual inspection activities. The perimeter fence, i.e., the second/interior gate, was padlocked and there was no evidence of trespasser activity. All parties were able to access the property with no issue, and upon completion of the soil cap inspections, the gates were locked.

Once inside the perimeter fencing, USACE confirmed the abandoned transformer and utility pole located on Arsenal Street, initially identified during the 2021 soil cap inspection, had been taken down and removed from the site by MassDCR.

A large tree was observed growing through the perimeter fence at the southern end of the drainage swale adjacent to Greenough Blvd. (see Photograph 16). Ongoing construction of a biotechnology facility on Coolidge Avenue was noted looking north from the site.

#### 5.1.1 Integrity

During the inspection, the soil cap was observed to be intact (see Photographs 13, 14, and 15). USACE did not note issues with the integrity of the soil cap. No erosion, settlement, cracks, holes, or tire ruts in the soil cap were noted. Also observed in 2022, USACE identified one minor depression at the foot of the eastern slope; however, USACE believes it is too shallow to warrant action at this time (Photograph 9).

#### 5.1.2 Vegetation

USACE observed the grass to be in healthy condition. Grass was observed to be sparse along the slope of the southern perimeter of the soil cap (see Photograph 8). This area was previously noted in the 2022 soil cap inspection report. The bare patch appears to be comparable in size to the 2022 observation.

#### 5.1.3 Swale and Check Dams

Along the northwest portion of the drainage swale, USACE observed saplings, dead branches, and other vegetation overhanging the swale (see Photograph 3). Immediately adjacent to the riprap of the swale in this area, 2-4-inch-wide woody roots were observed (see Photographs 1 and 2).

Along the northeast portion of the swale, USACE observed that a tree had taken root (see Photograph 4) and cattails are growing in the swale (see Photograph 5).

USACE observed the access gate located along Greenough Blvd. is blocked by trees growing along the edge of the eastern drainage swale (see Photograph 7). Growing along the swale adjacent to Greenough Blvd., USACE also observed dense *phragmites* (see Photograph 6).

Similar to the 2022 inspection, the catch basin was observed to be surrounded by *phragmites* growth. USACE located the catch basin grate and found the surface water pooled in the swale to be actively draining (see Photographs 10 and 11). Although the majority of the swale was observed to be dry, standing water was observed behind check dams along Greenough Blvd.

USACE observed dense *phragmites* growth along the eastern and southern portions of the swale (Photographs 6, 7, 8, 10, 13, 17, and 18).

#### 5.2 Maintenance Performed

No maintenance was performed during this reporting period by USACE.

#### 6. RECOMMENDATIONS

Future work at the site to be completed by USACE will include a site survey to confirm the soil cover perimeter and other site features related to maintenance of the remedy remain in place.

USACE recommends the following maintenance activities be conducted by DCR:

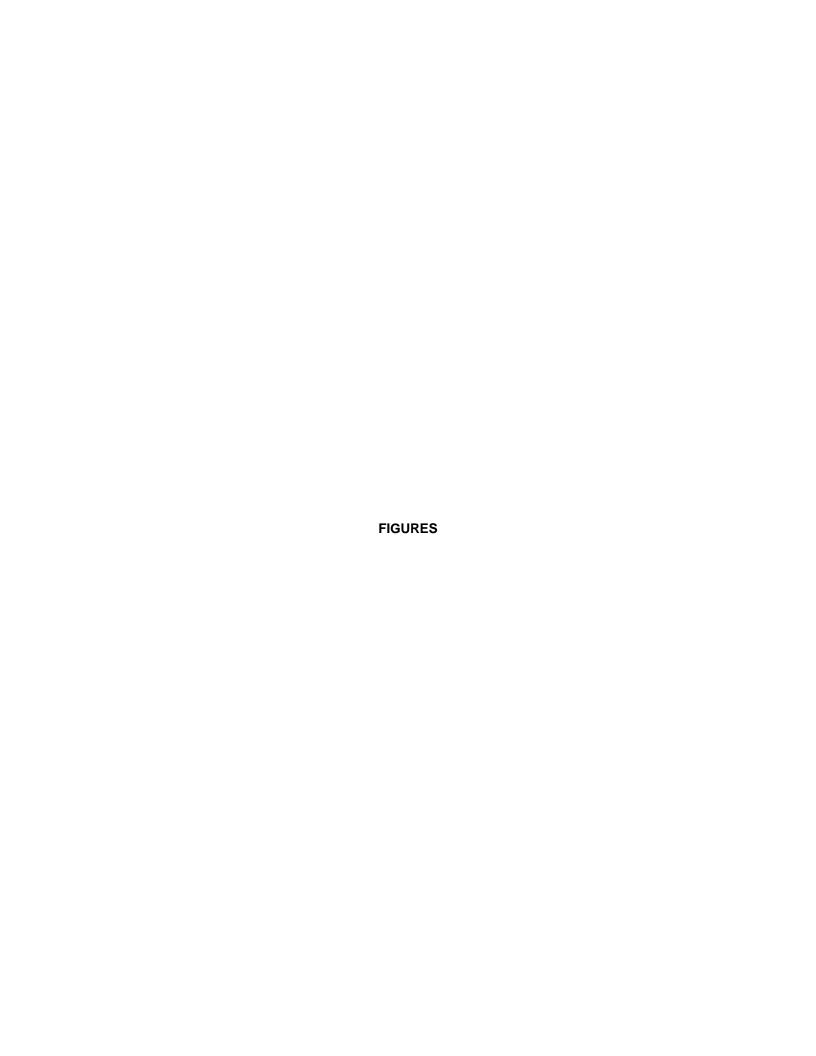
- Remove the growth of phragmites, cattails, and trees growing in or near the swales and treat
  with herbicide in accordance with the O&M plan. This includes removal of saplings from
  northeastern swale and eastern swale by gate to Greenough Blvd and the visible tree roots
  adjacent to northwestern swale.
- Remove encroaching phragmites to allow for inspection and repair of check dams and to maintain a functional catch basin
  - The drainage swale's check dams retain water for several days after precipitation events and should be cleaned. During regular mowing activities and swale maintenance completed by MassDCR, the check dams and receiving catch basin

should be inspected and serviced if needed, including camera inspection of the pipe under Greenough Blvd.

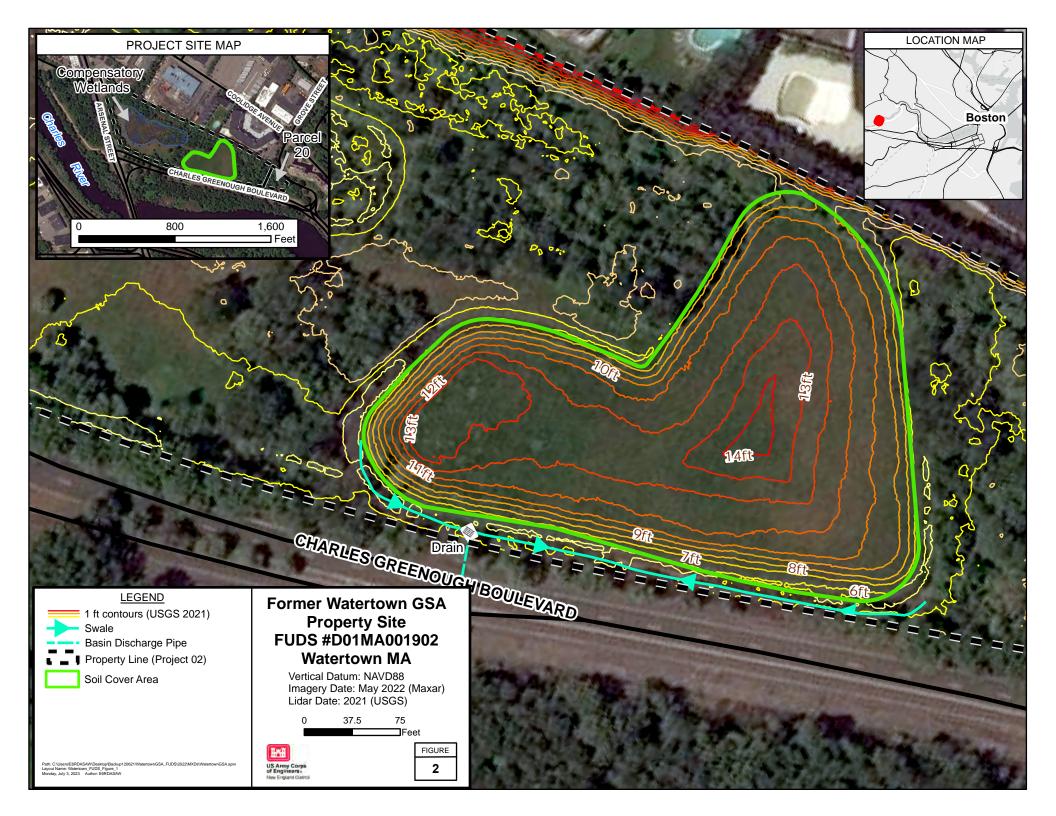
- Consider seeding bare patches with appropriate grass seed to prevent erosion.
- Mow remaining long grass identified in Photograph 12 of Attachment A.

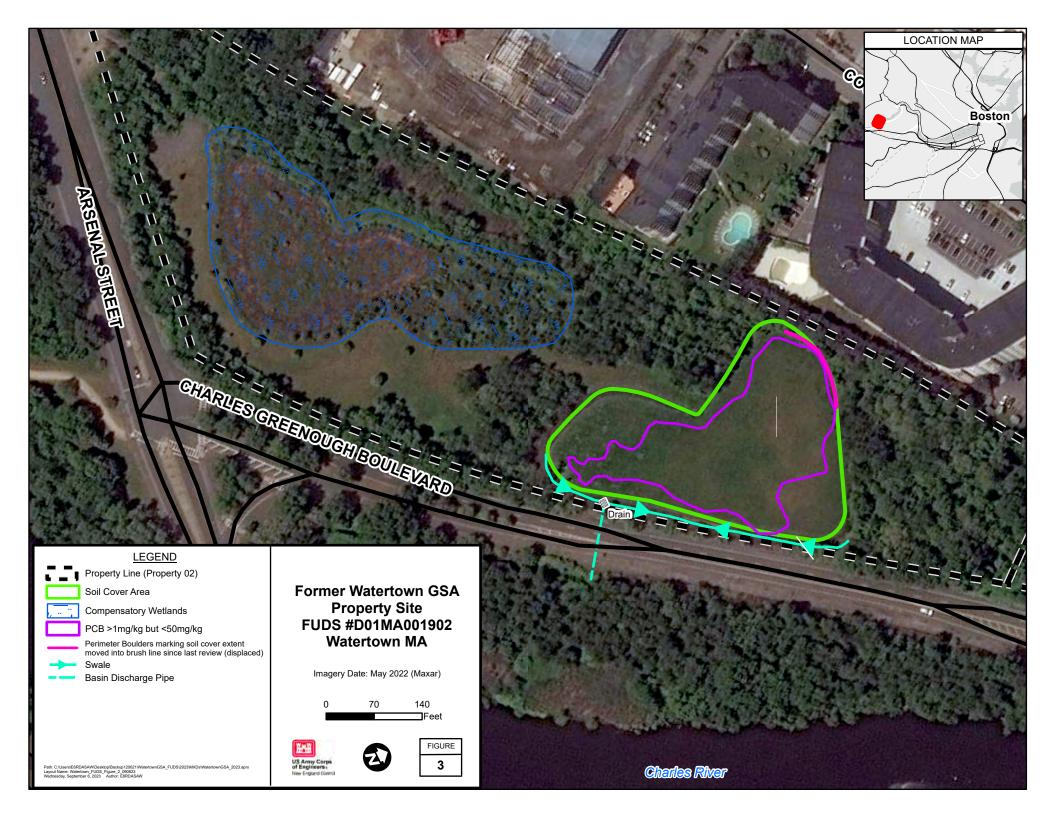
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ATTACHMENT A
PHOTOGRAPHS



**Photo 1**: Looking northwest along northwestern swale; note tree roots (2-4 inches in diameter) encroaching cover.



**Photo 2**: Closeup of tree roots (2-4 inches in diameter) encroaching cover shown in Photo 1.



**Photo 3**: Looking southwest along northern swale towards Greenough Blvd; note overhanging saplings, dead tree limbs in center of image, and vegetation growth throughout riprap. Dead grass (potentially tracks from mowing) noted on the right side of the photo but minor and no indication of resulting erosion/cap exposure noted.



**Photo 4**: Northern swale looking northeast; note woody vegetation growth in riprap.



**Photo 5**: Northern swale looking northeast; note vegetation (cattails, purple loosestrife, etc.) growth in riprap.



**Photo 6**: Looking southeast along eastern swale; note *phragmites* growth in riprap obscuring property fence along Greenough Blvd. and partly wet condition of swale.



**Photo 7**: Eastern swale looking southeast towards Greenough Blvd; note *phragmites* growth in riprap, tree growth along northeastern gate in center, and wet condition of swale.



Photo 8: Soil cap looking south towards Greenough Blvd.; note bare patches.



**Photo 9**: Eastern swale at soil cap toe looking down; note slight depression in grass cover consistent with prior inspections; boots are in depression; continue to monitor.



**Photo 10**: Eastern swale looking southeast towards Greenough Blvd; note dense *phragmites* growth; DCR Engineer and USACE Inspector (obscured) are assessing flow after clearing catch basin drain.



**Photo 11**: Eastern swale near Greenough Blvd. looking down at catch basin drain cover; note heavy vegetation and sediment buildup; drain functioned well once cleared.



**Photo 12**: Entrance path near southwestern swale looking north; note unmown section of grass; may have been rabbit nesting area but should be mowed.



**Photo 13**: Top of soil cap looking northeast; note good condition of grass cover and *phragmites* growth in center of photo and to the right in the eastern swale along Greenough Blvd.



**Photo 14**: Top of soil cap looking southeast; note good condition of grass cover and minor bare spot in center of image.



**Photo 15**: Top of soil cap looking northwest; note good condition of grass cover.



Photo 16: Southern swale looking south; note large tree growing through fence along Greenough Blvd and dry condition of swale in this section.



**Photo 17**: Eastern swale looking south towards Greenough Blvd.; note *phragmites* growth and apparent slumping of check dam that may differ from designed condition.



**Photo 18**: Eastern swale looking southeast towards Greenough Blvd; note heavy vegetation obscuring inspection of check dam; vegetation should be cleared to ensure check dams function as designed.

# ATTACHMENT B SOIL COVER INSPECTION CHECKLIST – 11 August 2023



Task Order/Job Code:		Weather:	mostly sunny myind
Site Name: GSA Property DO	1MA001902	Temperature:	70-75 F
City: Watertown		Site Map:	Attach Map
State: Massachusetts		Inspection Date:	11 Anoust 2023
Inspection Team: Rocat Su	nith - 6	Palagist (USA)	E): Erin Merry - Geologis
D.A. Fellow (USAN	-1 00 1	mmad Chould	11 ( Can I am)
	11111	THE DIM TO	LAS D
Samantha	Velluti-f	ry 11 (1190	2 Dona
ITEM			REMARKS
VEGETATIVE COVER			
1. AVERAGE GRASS HEIGHT 0.2 //		· mawing nech	rmed before inspection
		- 1/ 00/00 OP	area should be cleared
Estimated Height (inches): / 3 in .	· · · · · · · · · · · · · · · · · · ·	may be rabbit	nesting area
2. SPARSE COVER AREAS? Yes	No 🗆	1	than 2022 inspection
Location (also indicate on map):			
Length:		Securing cours	l be beneficial
3. GRASS CONDITION		· much improv	ed vs. 2022 inspection
		benefited from	ed vs. 2022 inspection;
Healthy 🗹 Fair 🗌 Poor 🔲			, , , , , , , , , , , , , , , , , , , ,
4. INVASIVE TREES/SHRUBS? Yes [	₽ No □	· phragmite	growth along Greenough
Location (also indicate on map):	2 2 1 1		be cleaned to better
Areal Extent: 300×/0 ff Height: 1	-8++	055PSS slum	ning in check dams
GROUND SURFACE		· tree mots 2-4	lin. diameter porthwestern
1. SETTLEMENT (LOW SPOTS) Yes	No 🗆	- same minor	depression observed
Location (also indicate on map):		in prior in sta	
Areal Extent: 2x2f7 Depth: 6	7.5/4	· continue for	non to c. but no action needle
2. CRACKS Yes [	□ No 🗹	· none obs	enved
Location (also indicate on map):			
Length: Width: Depth:			
	□ No 🖭	onone obse	ened
Location (also indicate on map):			
Areal Extent: Depth:			
4. HOLES Yes [	□ No 🗹	· none on so	/ cap; prior burrond
Location (also indicate on map):		were filled in	about relic Nous"
Areal Extent: Depth:		area roald	cap; prior burrons in but relic den" use some additionalson
Suspected Cause (e.g. rodent, other):		and nose see	June varipona/50)
		and grass see	of the second se



	ITEM				REMARKS
5.	WET AREAS Ponding: Location (also indicate on map): Areal Extent:	Yes 🗌			none observed on the cap; recent rain elevated surface water in wet/and
	Seeps: Location (also indicate on map): Areal Extent: Estimated Flow Rate:	Yes 🗌	No	V	· none observed
	Soft Subgrade: Location (also indicate on map): Areal Extent:	Yes 🗌	No		·none observed
6.	VEHICLES Location (also indicate on map):	OFF ROAI Yes   pth:	D No	<b>V</b>	· none observed
ST	ORM WATER MANAGEMENT SYS	·			
1.	EASTERN SWALE Settlement: Location (also indicate on map): Ponding: Location (also indicate on map):	Yes T	No No		· no settlement observed · ponding observed in swale (red on map)
2.	SOUTHERN SWALE Settlement: Location (also indicate on map): Ponding: Location (also indicate on map):	Yes ☐ Yes 🌠	No No		· no settlement observed · ponding observed in Swale (red on map)
3.	WESTERN SWALE Settlement: Location (also indicate on map): Ponding: Location (also indicate on map):	Yes	No No	<b>V</b>	·no settlement or ponding observed ned · tree roots 2-4 in. diameter observed ned swale and placed boulders; consider removing roots
4.	CATCH BASIN  Debris:  Appears to be Functioning:  Condition: Good Fair	Yes Yes Poor			from top of grate; should be cleared what mowing happens prior to inspection flowing mell considering recent heavy rain



	ITEM					REMARKS
5.	STONE CHECK DAMS Excess Sediment: (greater than 12")	Yes		No		· vegetation debris and sediment observations but none >12 in. · some check dams not visible due
	Location (also indicate on map):			,		100000000000000000000000000000000000000
	Erosion: Location (also indicate on map):	Yes [	V	No		2+ check dams observed to have slum and become "U' or saddle shaped (gre all should be monitored
AC	CESS ROADS					1
1.	Damage: Location (also indicate on map):	Yes [		No		·none observed
	Erosion: Location (also indicate on map):	Yes [				·none observed
	Vegetation: Location (also indicate on map):	Yes [	<b>d</b>	No 		· heavy vegetation around entrance gate
W	ALLS AND SLOPES					
1.	NORTHERN SLOPE Erosion: Settlement: Location (also indicate on map):	Yes Yes		No No	D D	· no erosion or settlement observed
2.	EASTERN SLOPE Erosion: Settlement: Location (also indicate on map):	Yes Yes	_	No	Y	· no significant crosion or settlement · see a formentioned minor depression, in "Ground Surface -> 1. Settlement Clowspor
3.	SOUTHERN SLOPE Erosion: Settlement: Location (also indicate on map):	Yes Yes		No No		·no erasion or settlement observed
GE	NERAL	ð.	0017	5 S		
1.	VANDALISM Location (also indicate on map): Description of Damage:	Yes		No		· no new Vandalism or graffiti · DCR spened gates and provided keys to USACE, so no need to cut chains for
2.	CHANGED SITE CONDITION	Yes		No		· 170 change observed
3.	LAND USE CONTROLS STILL FULLY IMPLEMENTED	Yes [	1	No		-LUC fully implemented and USACE insp access has improved by sharing keys



	FERVIEWS (conduct interviews only if any of the following are present during inspection)
1.	INTERVIEW WORKERS ON SITE N/A, no workers present
••	Problems:
	Suggestions:
	Attach Report
2.	INTERVIEW SITE NEIGHBORS - N/A, no site neighbors present
	Problems: Suggestions:
	Attach Report
3.	INTERVIEW LOCAL OFFICIALS. Muhammiad Chowdhury (MADCR) and Samantha Vellus Problems:  Suggestions: Attach Report  Attach Report
	Problems: (Tight 4 Bond) took point in inspection.
	Suggestions: No other boal officials encountered.
	Attach Report
1.	OPERATION AND MAINTENANCE PLAN Is there a plan in place?  Yes No
	Is there a plan in place?  Yes No I  Is it being followed?  Yes No I
	Is it adequate? Yes No
Note	Encountered numerous rabbits and one rabbit carcass with evidence of
-	Coyste activity nearby.
	Inamvements: Darass health much improved due to rainfall
	Triplotticing of hetter armse due to key sharing
	Drawn I of telephone Date and transformer near entran
	Improvements: Darass health much improved due to rainfall  a better access due to key sharing  removal of telephone pole and transformer near entran  eliminated potential source of hazardous materials
Pec	commercially () Remove encroaching philographes to allow for insplich
***************************************	and repair of check dams and to maintain a funct
	catch basin,
	(2) Remark continue ( modificación o la continue de
	Swale by a le of a proprior the swale and ear
	The Sy youth to Greenough Blvd.
	( 3) Home of the land of the l
	- MUTIONE VISITALE TREE 100/5 /2-4 in drawn from Cap ad lacent
	to northwestern swale.
	Remove saplings from northeastern swale and ear swale by gott. to Greenough Blvd.  Remove visible tree roots /2-4 in. diam) from cap adjacent to northwestern swale.
	to northwestern swale.  4) Consider seeding bare patches with appropriate grass
	to northwestern swale.  4) Consider seeding bare patches with appropriate grass seed to prevent future erosion.

