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NS MAYPORT
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LETTER REPORT REGARDING FREE PRODUCT SUMMARY REPORT FOR CALENDAR
YEAR 2008 BUILDINGS 425 AND 1586 AND SITES 1343 AND 1585 NS MAYPORT FL
5/28/2009
TETRA TECH NUS



TETRA TECH NUS, INC.

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May 28, 2009

Project Number 112G00758

Commander, Southeast
Naval Facilities Engineering Command
Attn: Beverly Washington (Code OPAEVC)
Remedial Project Manager
2155 Eagle Drive
North Charleston, South Carolina 29406

Reference: CLEAN IV Contract Number N62467-04-D-0078
Contract Tack Order Number 0078

Subject: Free Product Summary Report for Calendar Year 2008
Building 425, Site 1343, Site 1585, and Building 1586
Naval Station Mayport
Jacksonville, Florida

Dear Ms. Washington:

Tetra Tech NUS, Inc. (TtNUS) is pleased to submit this Free Product Summary Report for Calendar Year 2008 for the referenced Contract Task Order (CTO). This report was prepared for the United States Navy, Naval Facilities Engineering Command Southeast (NAVFAC SE) for the Comprehensive Long-term Environmental Action Navy (CLEAN) IV Contract Number N62467-04-D-0078.

LOCATION

Naval Station (NAVSTA) Mayport is located within the corporate limits of the city of Jacksonville, Duval County, Florida, approximately 12 miles to the northeast of downtown Jacksonville and adjacent to the town of Mayport. A Regional Map is provided as Figure 1. The Station complex is located on the northern end of a peninsula bound by the Atlantic Ocean to the east and the St. Johns River to the north. NAVSTA Mayport occupies the entire northern part of the peninsula except for the town of Mayport, which is located to the west between the Station and the St. Johns River.

Four sites undergoing free product removal activities are located at NAVSTA Mayport and include Building 425, Site 1343, Site 1585, and Building 1586. All sites are actively used for either office/classroom-type space or Station housing.

FREE PRODUCT METHODOLOGY

During the March 2007 NAVSTA Mayport Environmental Partnering Team (Team) meeting, it was decided the linear-shaped petroleum absorbent material referred to as a "sock" would be implemented as part of the petroleum removal process. The sock would be introduced into designated monitoring wells and would be used in conjunction with skimming free product from the groundwater surface by means of a peristaltic pump equipped with disposable tubing. Based on the Team's approval, petroleum-only absorbent socks manufactured by New PIG Inc., Model SKM 401, were suspended in wells using a nylon



cord at the depth of the groundwater surface. The petroleum absorbent socks were installed in all wells which contained or had the potential for the presence of free product to be collected.

Once the absorbent material was removed, free product measurements were recorded using an Oil Recovery System (ORS) oil/water interface probe that electronically sounds differently for free product and water. If free product was still present, a peristaltic pump was used to slowly remove the remaining free product. When using a peristaltic pump to remove free product, the disposable tubing was placed above top of the water column in the free product. As the free product was removed, the depth to groundwater below land surface decreased so the tubing depth adjustment was critical to remove only free product and not water. Once the free product was removed and only groundwater was present, free product recovery at the well was complete and the spent sock was replaced. All used socks and removed liquids are initially stored in a screw top container designed for transporting petroleum materials to the designated drum storage facility. The contents of the screw top container are transferred to a 55-gallon steel UN1A2 drum for disposal at a State-licensed facility.

The sorbent material purchased from New PIG has specifications for volumes of free product the absorbent material can hold. When the sorbent material is fully absorbed, Model SKM 401 contains 17 ounces or approximately 500 milliliters (mL).

Free product measurements were obtained within 2 hours of low tide so that representative accumulations of free product were recorded..

FREE PRODUCT RECOVERY and MEASUREMENT SITES

Sites designated for free product removal operations were determined by the NAVFAC SE in the March 2007 Plan of Action. Free product removal and measurement data for calendar year 2008 were documented by a TtNUS representative for Building 425, Site 1343, Site 1585, and Building 1586 and are presented below.

BUILDING 425

A representative of TtNUS began oversight of free product measurement and removal on August 28, 2005, and has continued through December 2008. Free product measurement and recovery efforts for calendar year 2008 involved observing monitoring wells MW-04 and MW-06, which are both shallow, 2 inch diameter wells. Dates, thicknesses, and volumes of free product removed from monitoring wells MW04 and MW06 are provided as Table 1. A site plan depicting the site and associated wells is provided as Figure 2.

No evidence of free product has been observed in nearby surrounding wells.

Approximately 100 mL of free product was removed during calendar year 2008. The total amount of free product removed at the site, from August 2005 through 2008, is 7,372 mL.

SITE 1343

A representative of TtNUS initiated oversight of free product measurement and removal on August 28, 2005 and has continued through December 2008. Free product recovery efforts for Site 1343 were focused on shallow monitoring well MW-05. No free product was observed or removed during calendar year 2008. The total volume of free product removed by TtNUS from the site since August 28, 2005, is 2,930 mL. Dates, thicknesses, and volumes of free product removed since August 28, 2005, are provided in Table 2. A site plan depicting the wells located at the site is provided as Figure 3.



SITE 1585

Free product measurement and removal by a TtNUS representative for Site 1585 began on January 7, 2007, and continued through the 2008 calendar year. Free product removal occurred at shallow monitoring well MW-03, which is a 2-inch diameter well. The total volume of free product removed for calendar year 2008 is 100 mL. The total volume TtNUS and NAVSTA Mayport Base Services have removed is 225,319 mL or 59.53 gallons. The majority of the free product removed was completed using a vacuum extraction method implemented by NAVSTA Mayport Base Services. A list of dates, thickness, and volumes removed of free product is provided as Table 3. A site plan depicting monitoring well MW-03 and other site well locations is provided as Figure 4.

BUILDING 1586

Free product measurement and removal efforts for calendar year 2008 began March 5, 2008. The delay in initiating free product removal was due to a treatability study which CH2M Hill of Jacksonville, Florida was conducting at the site.

Six monitoring wells at Site 1586 were monitored for calendar year 2008 as part of the free product removal effort. The designated monitoring wells include MW-01S, RW-01, MW06S, MW-15S, MW16S, and MW-17S. All designated monitoring wells are shallow in depth, with five being constructed as 2-inch diameter wells and one recovery well, RW-01, constructed as a 4-inch diameter well.

The total volume of free product removed from the six wells at Site 1586 was 89,400 mL. The majority of the free product was removed from RW-01, which accounts for 56,750 liters. A table listing the dates, thicknesses, and volumes of free product removed is provided as Table 4. A site plan with monitoring well locations noted is provided as Figure 5.

Free product thicknesses have generally decreased during calendar year 2008 in all wells monitored for the presence of free product. During January 2008, five monitoring wells contained free product. By December 2008, only monitoring wells RW-01 and MW-16S were observed as containing free product. Both monitoring wells are located near to the source area. Monitoring wells MW-01S, MW-06S, MW-15S, and MW17S are located further from the source area and, currently show no measurable amount of free product.

The free product thickness, measurements, and volumes recovered are presented as Table 4. The monitoring well locations are shown on Figure 5.

CONCLUSIONS and RECOMMENDATIONS

Based on the continued decreasing trend in the occurrence of free product at all sites, it is concluded that the use of petroleum sorbent materials and manual free product removal efforts are successful means of free product removal at these sites.

Based on the most recent information, the following is recommended:

- Continue to measure and recover free product at Building 425, Site 1343, Site 1585, and Building 1586, if present.
- Continue to monitor the sorbent socks, documenting the color of sorbent material when exchanging with new sorbent material.



TETRA TECH NUS, INC.

Ms. Beverly Washington
NAVFAC SE
May 28, 2009 – Page 4

If you have any questions, please feel free to contact me at (904) 730-4669, extension 213, or via e-mail at Mark.Peterson@tetrattech.com.

Sincerely,

A handwritten signature in black ink that reads "Mark A. Peterson".

Mark A. Peterson, P.G.
Project Manager

MP/ds

Attachments (9)

- c: John Winters, FDEP (2 copies, 1 CD)
- Diane Racine, NAVSTA Mayport (1 copy, 1 CD)
- Brian Symes, NAVFAC SE
- Casey Hudson, CH2M Hill (CD only)
- Mark Perry, TtNUS (unbound copy, CD)
- Debra Humbert, TtNUS (cover letter only)
- NAVSTA Mayport Administrative Record (electronic copy)
- CTO 0078 Project File

TABLES

TABLE 1
SITE 425 FREE PRODUCT MEASUREMENTS AND RECOVERY

FREE PRODUCT SUMMARY REPORT
FOR CALENDAR YEAR 2008
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA

DATE	MW-04		MW-06 (PZ-10)	
	THICKNESS (INCHES)	VOLUME RECOVERED (mL)	THICKNESS (INCHES)	VOLUME RECOVERED (mL)
08/28/05	0	0	0	0
10/01/05	0	0	0.25	100
10/29/05	0	0	0	0
11/24/05	0	0	0	0
12/27/05	0	0	0.25	50
01/21/06	0	0	0	0
02/27/06	0	0	0	0
03/30/06	0	0	0	0
04/30/06	0	0	0	0
05/30/06	0.22	0	0	0
06/22/06	0.25	500	0.8	500
07/21/06	0	0	0	0
07/27/06	0	0	0	0
07/30/06	0	0	0	0
08/02/06	0	0	0	0
09/01/06	Not Measured	Not Measured	Not Measured	Not Measured
10/01/06	Not Measured	Not Measured	Not Measured	Not Measured
11/27/06	0	0	0	0
12/22/06	0	0	0	0
01/01/07	Not Measured	Not Measured	Not Measured	Not Measured
02/16/07	0	0	0	0
03/19/07	0	0	0	0
04/04/07	0.4	1892	0	0

DATE	MW-04		MW-06 (PZ-10)	
	THICKNESS (INCHES)	VOLUME RECOVERED (mL)	THICKNESS (INCHES)	VOLUME RECOVERED (mL)
05/03/07	0.3	1893	0	0
05/04/07	0.2	946	0	0
05/05/07	0.98	946	0.91	946
06/30/07	0.75	945	0.85	945
07/30/07	0	0	0	0
08/16/07	0	0	0	0
09/25/07	1.04	250	0	0
10/12/07	0	0	0	0
11/09/07	0	0	0	0
12/20/07	0	0	0	0
01/07/08	0	0	0	0
02/06/08	0	0	0	0
03/05/08	0	0	0	0
04/07/08	0	0	0	0
05/29/08	0	0	0.09	100
06/20/08	0	0	0	0
7/15/08	0	0	0	0
8/15/08	0	0	0	0
9/18/08	0	0	0	0
10/27/08	0	0	0	0
12/11/08	0	0	0	0

TABLE 2
SITE 1343 FREE PRODUCT MEASUREMENTS AND RECOVERY

FREE PRODUCT SUMMARY REPORT
 CALENDAR YEAR 2008
 NAVAL STATION MAYPORT
 JACKSONVILLE, FLORIDA

DATE	MW-05	
	THICKNESS (feet)	VOLUME RECOVERED (milliliters)
8/28/2005	0.9	200
10/1/2005	0.8	500
10/29/2005	0.5	500
11/24/2005	0.47	200
12/27/2005	0.8	780
1/21/2006	0.15	50
2/27/2006	0	0
3/30/2006	0	0
4/30/2006	0	0
5/20/2006	0	0
6/22/2006	0.11	250
7/30/2006	0.08	0
8/22/2006	0.03	0
9/1/2006	Not Measured	Not Measured
10/1/2006	Not Measured	Not Measured
11/27/2006	0	0
12/22/2006	0	0
1/1/2007	Not Measured	Not Measured
2/16/2007	0.01	0
3/19/2007	0	0
4/4/2007	0	150
5/3/2007	0	75

DATE	MW-05	
	THICKNESS (feet)	VOLUME RECOVERED (milliliters)
5/4/2007	0	75
5/30/2007	0.02	75
6/30/2007	0.01	75
7/30/2007	0	0
8/16/2007	0	0
9/25/2007	0	0
10/12/2007	0	0
11/9/2007	0	0
12/20/2007	0	0
1/7/2008	0	0
2/6/2008	0	0
3/5/2008	0	0
4/7/2008	0	0
5/29/2008	0	0
6/20/2008	0	0
7/15/2008	0	0
8/15/2008	0	0
9/18/2008	0	0
10/27/2008	0	0
12/11/2008	0	0

TABLE 3
SITE 1585 FREE PRODUCT MEASUREMENTS AND RECOVERY

FREE PRODUCT SUMMARY REPORT
 CALENDAR YEAR 2008
 NAVAL STATION MAYPORT
 JACKSONVILLE, FLORIDA

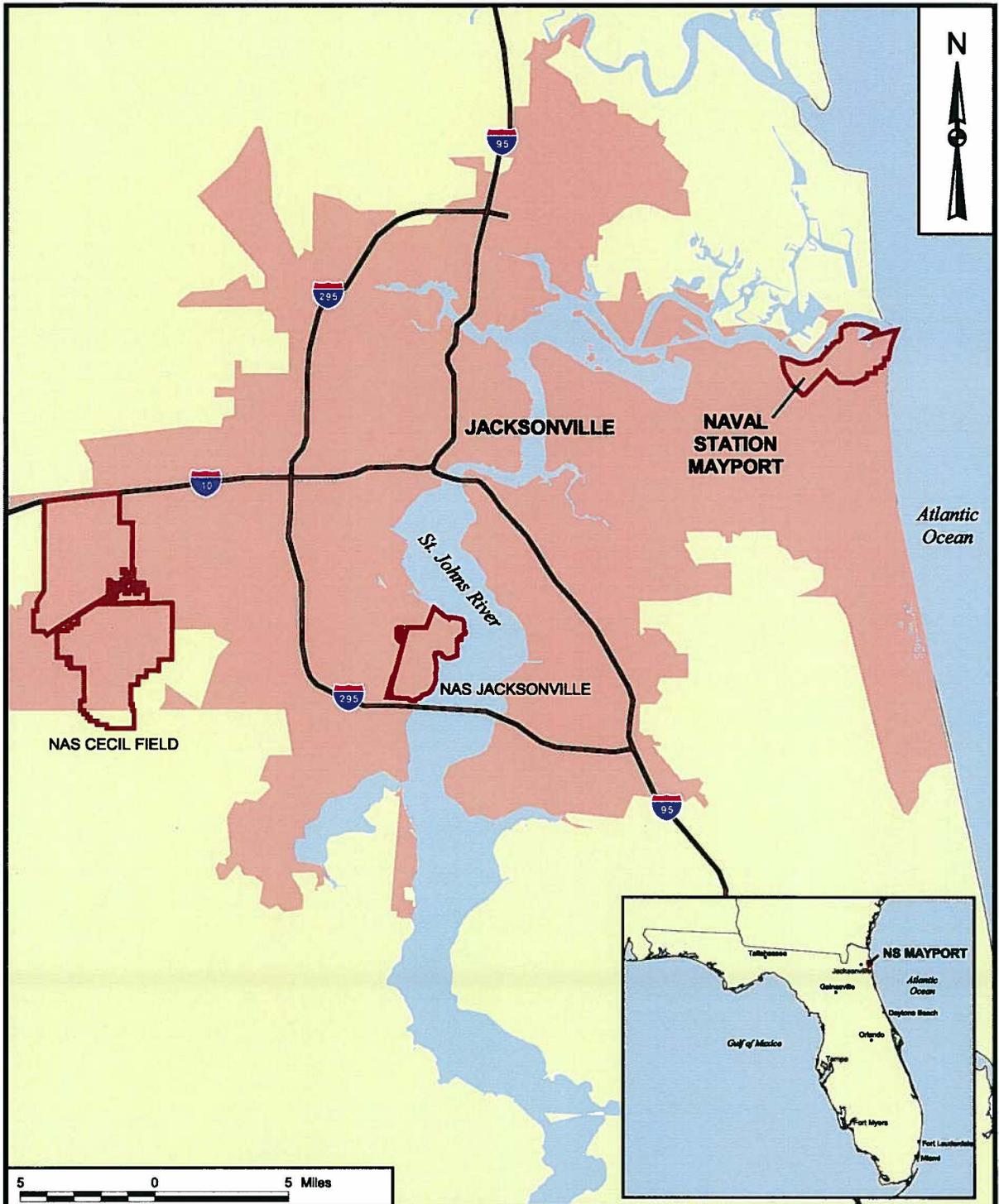
DATE	MW-03S	
	THICKNESS (FEET)	VOLUME RECOVERED (mL)
02/16/07	0.38	0
03/19/07	0.52	400
04/04/07	0.41	1890
05/03/07	0.60	1890
05/04/07	0.30	945
05/30/07	0.04	113
06/30/07	0.01	76
07/30/07	0	0
08/16/07	0.02	151
09/25/07	0.06	200
10/12/07	0	0
11/09/07	0	0
12/20/07	0	0
01/07/08	0	0
02/06/08	0	0
03/05/08	0	0
04/07/08	0	0
05/29/08	0	0
06/20/08	0	0
07/15/08	0	0
08/15/08	0	0
09/18/08	0	100
10/27/08	0	0
12/11/08	0	0

TABLE 4
SITE 1586 FREE PRODUCT MEASUREMENTS AND RECOVERY

FREE PRODUCT SUMMARY REPORT
 FOR CALENDAR YEAR 2008
 NAVAL STATION MAYPORT
 JACKSONVILLE, FLORIDA

DATE	MW-01S		RW-01		MW-06S		MW-15S		MW-16S		MW-17S	
	THICKNESS (INCHES)	VOLUME RECOVERED (mL)										
03/05/08	0	0	0.7	1700	0.87	900	0.37	400	0.83	600	1.15	1800
04/08/08	0	0	0.29	3000	0.22	900	0.07	700	0.33	1100	0.59	1700
05/29/08	0	0	0.23	2500	0.3	900	0	500	0.3	1100	0.31	900
06/20/08	0	0	0.14	2300	0	0	0	0	0.39	1000	0	500
07/15/08	0	0	0.18	2350	0.18	800	0	0	0.25	800	0	0
08/01/08	0	0	0.27	2500	0.06	800	0	0	0.48	1150	0	0
08/14/08	0	0	0.31	2500	0.07	700	0.09	700	0.19	1000	0.29	700
08/28/08	0	0	0.35	2500	0.05	600	0.05	600	0.75	1000	0	500
09/04/08	0	0	0.5	3500	0.1	700	0	0	0.08	400	0	300
09/08/08	0	0	0.35	2000	0.16	600	0	0	0	0	0	0
09/18/08	0	0	0.31	2400	0.05	700	0	0	0.08	700	0	0
09/25/08	0	0	0.31	3500	0	200	0	0	0.01	300	0	0
10/02/08	0	0	0.43	3500	0	0	0	0	0	0	0.02	100
10/07/08	0	0	0.3	3000	0	0	0	0	0	500	0	0
10/16/08	0	0	0.24	3500	0	0	0	0	0.07	1000	0	0
10/27/08	0	0	0.131	4000	0.03	500	0	0	0	500	0	0
11/07/08	0	0	0.2	3000	0	0	0	0	0.3	800	0	0
11/26/08	0	0	0.23	4000	0	300	0	300	0.27	1000	0	0
12/11/08	0	0	0.24	3000	0	200	0	0	0.1	700	0	0
12/31/08	0	0	0.21	2000	0	0	0	0	0.1	500	0	0

FIGURES

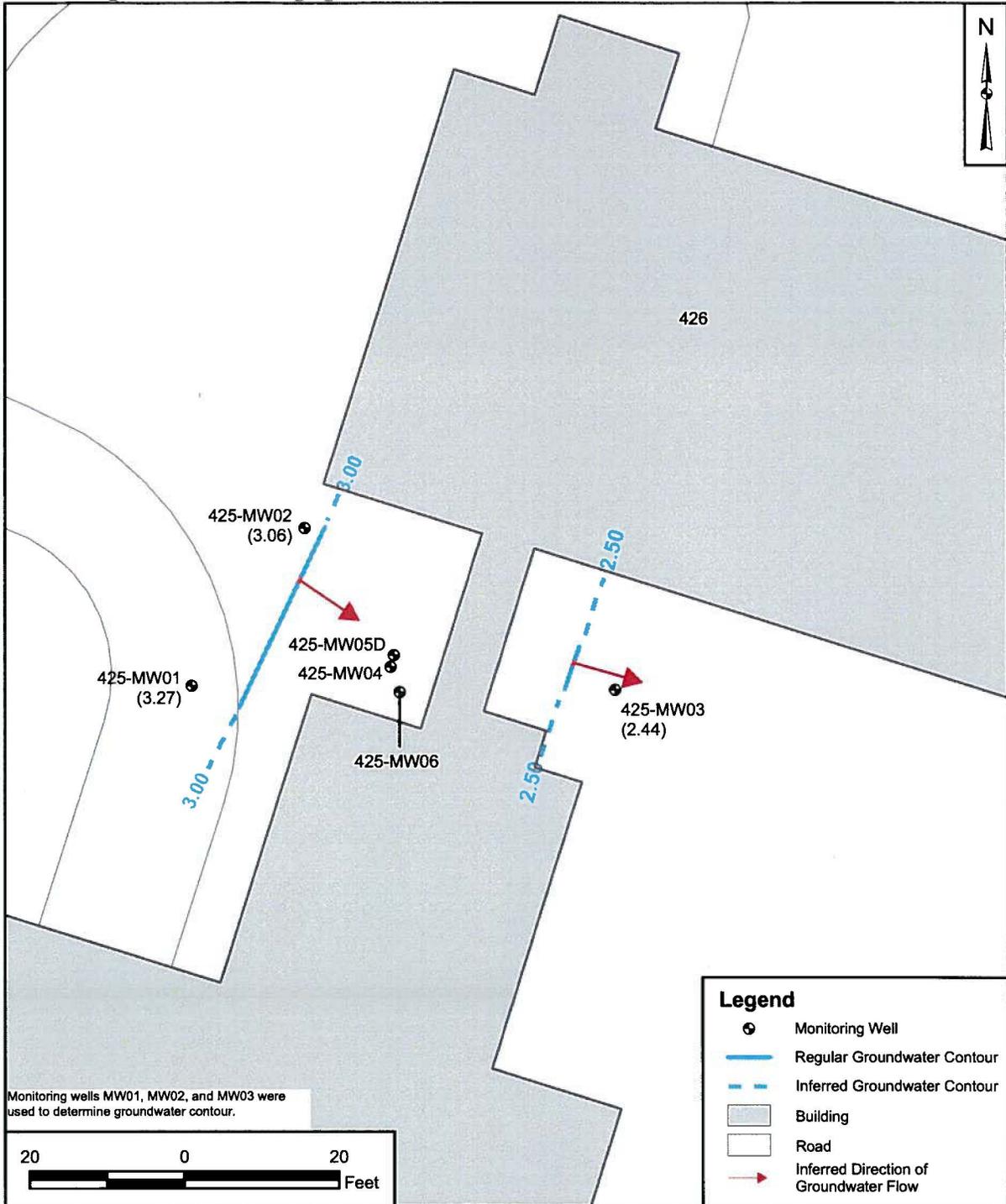


DRAWN BY	DATE
K. PEILA	4/17/06
CHECKED BY	DATE
D. SIEFKEN	5/11/06
COST/SCHEDULE-AREA	
SCALE AS NOTED	

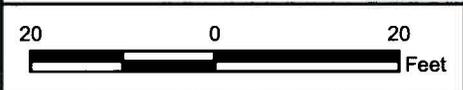


**REGIONAL AREA MAP
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA**

CONTRACT NUMBER 112G00758	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO. FIGURE 1	REV 0

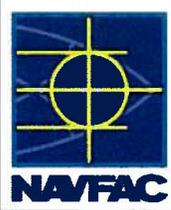


Monitoring wells MW01, MW02, and MW03 were used to determine groundwater contour.



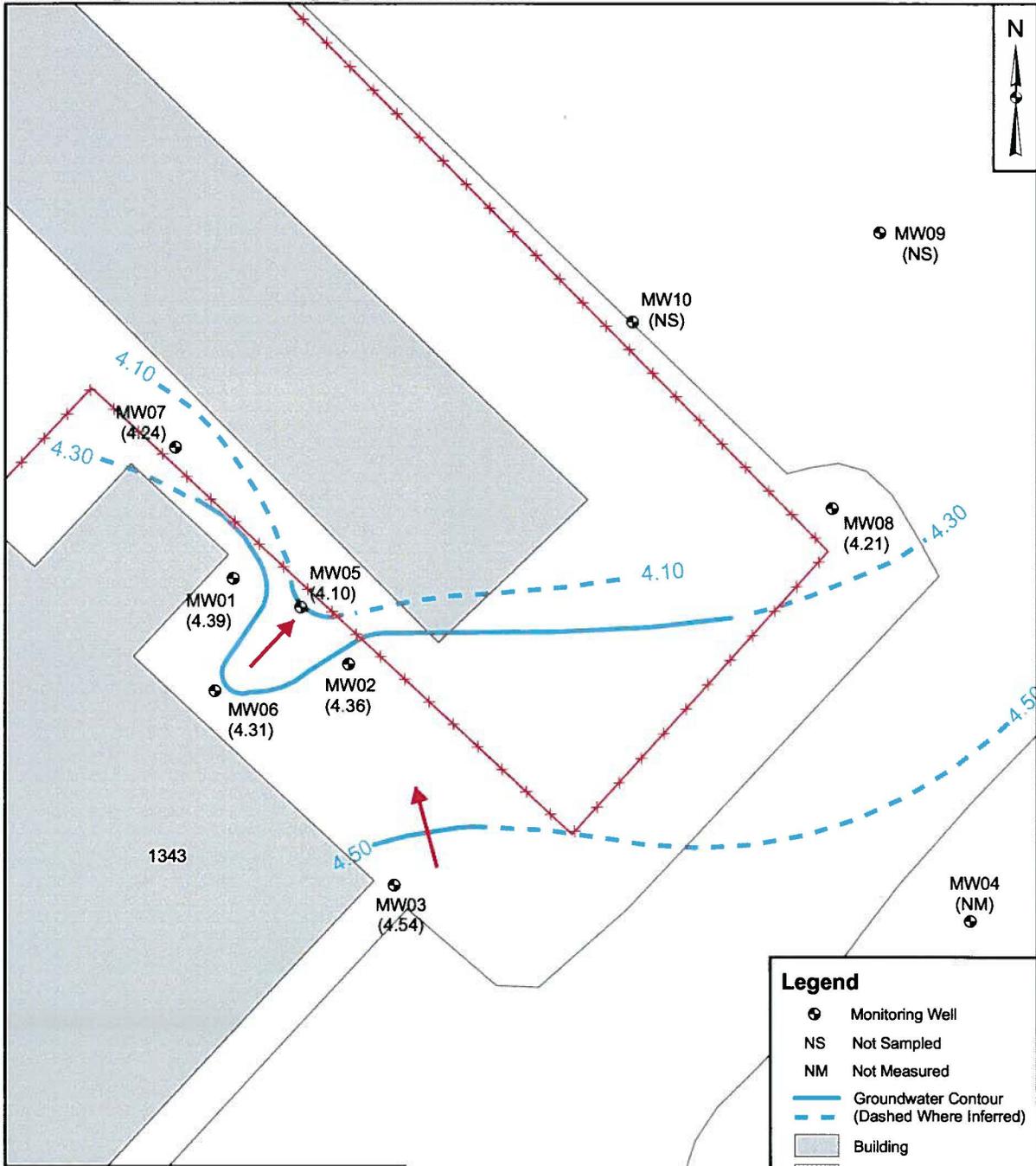
Legend	
	Monitoring Well
	Regular Groundwater Contour
	Inferred Groundwater Contour
	Building
	Road
	Inferred Direction of Groundwater Flow

DRAWN BY	DATE
K. MOORE	06/18/08
CHECKED BY	DATE
D. SIEFKEN	02/25/09
COST SCHEDULE AREA	
SCALE AS NOTED	



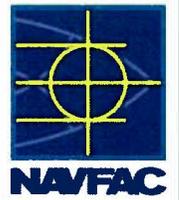
**BUILDING 425
MONITORING WELL LOCATIONS
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA**

CONTRACT NUMBER CTO 0078	
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO. FIGURE 2	REV 0



Legend	
	Monitoring Well
NS	Not Sampled
NM	Not Measured
	Groundwater Contour
	(Dashed Where Inferred)
	Building
	Road
	Inferred Direction of Groundwater Flow

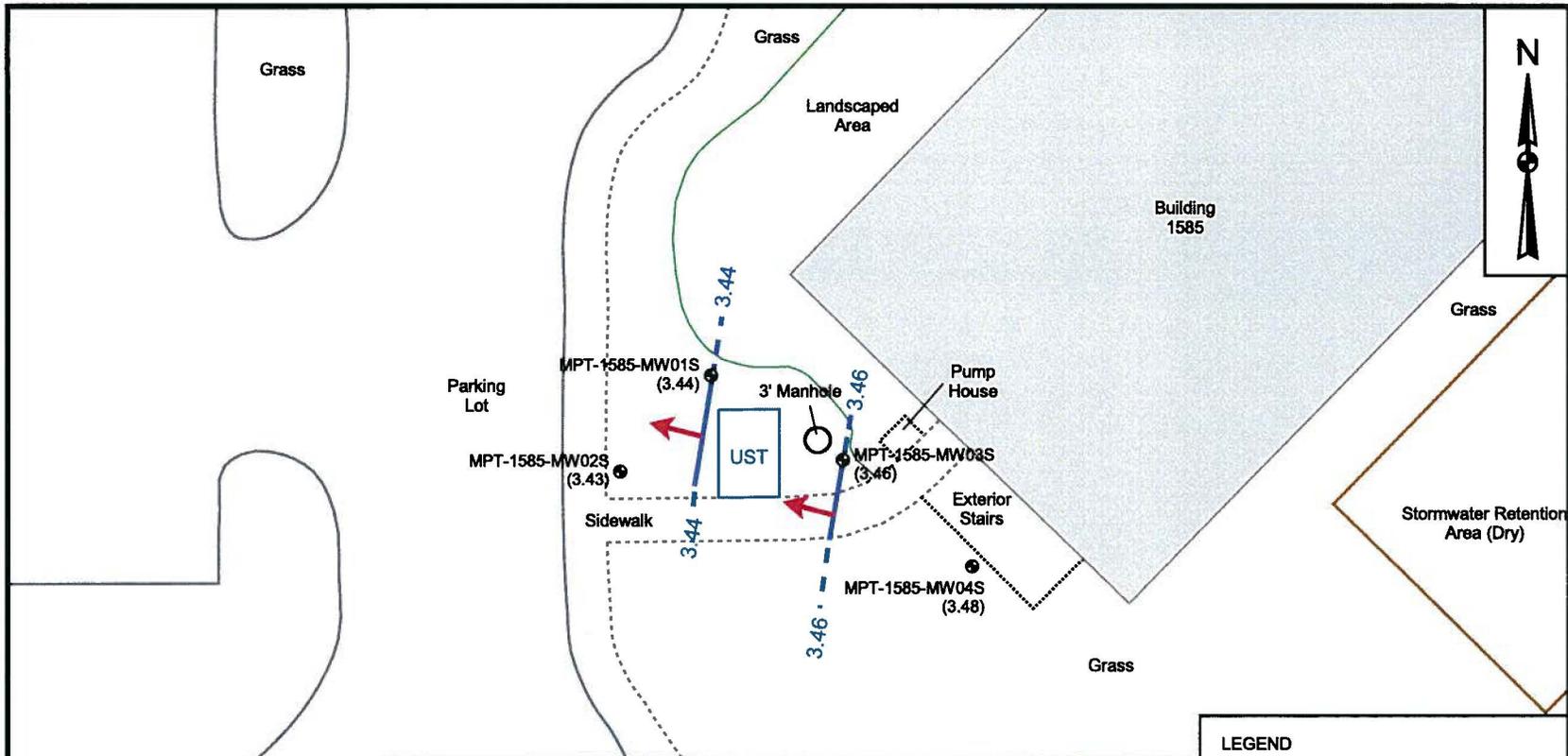
DRAWN BY	DATE
K. MOORE	06/18/08
CHECKED BY	DATE
D. SIEFKEN	02/18/09
COST SCHEDULE AREA	



**SITE 1343
MONITORING WELL LOCATIONS
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA**

CONTRACT NUMBER	
CTO 0078	
APPROVED BY	DATE
APPROVED BY	DATE
FIGURE NO.	REV
FIGURE 3	0

SCALE
AS NOTED



LEGEND	
●	Monitoring Well Location
UST	Underground Storage Tank
(3.42)	Groundwater Elevation (ft msl)
→	Groundwater Flow Direction
-3.44-	Groundwater Elevation Contour (Dashed Where Inferred)

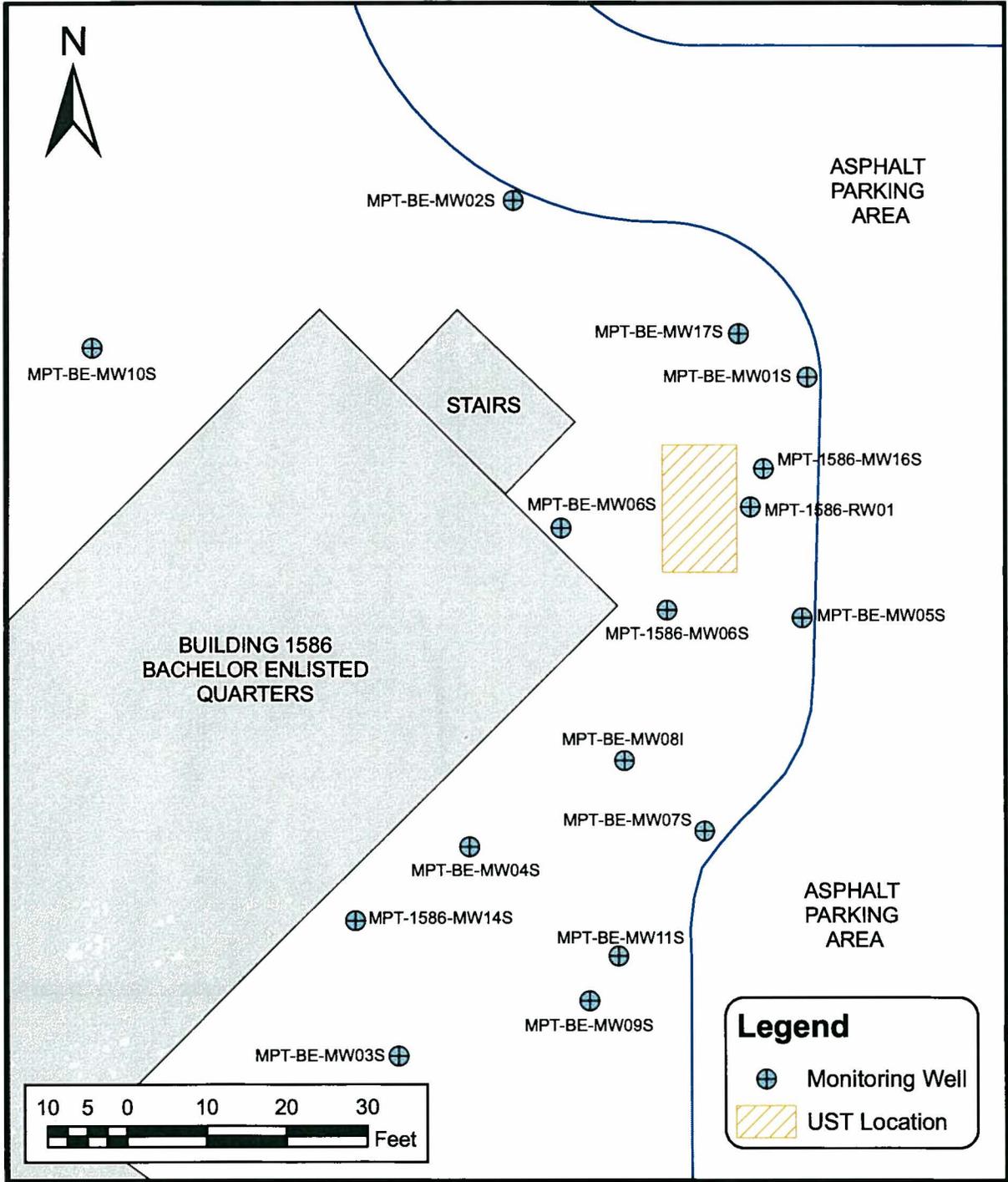


DRAWN BY	DATE
J. ENGLISH	01/18/09
CHECKED BY	DATE
D. SIEFKEN	01/19/09
COST/SCHEDULE-AREA	
SCALE AS NOTED	



SITE 1585
MONITORING WELL LOCATIONS
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA

CONTRACT NUMBER 0078	
APPROVED BY	DATE
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APPROVED BY	DATE
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DRAWING NO.	REV
FIGURE 4	0



DRAWN BY	DATE
JLG	5/22/09
CHECKED BY	DATE
COST/SCHEDULE-AREA	
SCALE	
AS NOTED	



MONITORING WELL LOCATIONS
BUILDING 1586
FREE PRODUCT SUMMARY REPORT
MONITORING WELL LOCATIONS
NAVAL STATION MAYPORT
JACKSONVILLE, FLORIDA

CONTRACT NUMBER	
CTO 078	
APPROVED BY	DATE
APPROVED BY	DATE
DRAWING NO.	REV
FIGURE 5	0