UNITED STATES

ENVIRONMENTAL PROTECTION AGENCY

REGION III

FINAL DECISION and RESPONSE TO COMMENTS

for

Northrop Grumman Systems Corporation
(Former Sperry Marine) Manufacturing Parcel and Parcel G
Charlottesville, VA

EPA ID: VAD 003 123 833

Prepared by
Land, Chemicals and Remediation Division

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Section 1: Introduction

The United States Environmental Protection Agency (EPA) is issuing this Final Decision and Response to Comments (FDRTC) for a portion of the 81.6-acre former Sperry Marine property located in Charlottesville, VA (the Facility) (Figure 1). The subject portion of the property, herein referred to as the "Properties", consists of two parcels: (1) a Manufacturing Parcel, currently owned and operated by the Northrop Grumman Systems Corporation (NGSC), and (2) Parcel G, a commercial parcel located adjacent to the Manufacturing Parcel, and currently owned by OCT Stonefield Property Owner (Figures 2 and 3). The Facility's address is 1070 Seminole Trail (US-29), Charlottesville, Albemarle County, VA.

The Final Remedy for the Properties includes: (1) Monitored Natural Attenuation (MNA) of groundwater contaminants; and, (2) installation of Vapor Intrusion Controls Systems (VCS), unless it is demonstrated that a VCS is not necessary to protect human health. In addition, the Final Remedy requires land and groundwater use restrictions that will be implemented by institutional controls until EPA's Corrective Action Objectives are achieved.

On December 14, 2018, EPA issued a Statement of Basis (SB) for the Facility which described the information gathered during the environmental investigations and proposed a final remedy for Corrective Action at the Facility. EPA solicited public comment on the proposed remedy (consistent with public participation provisions under RCRA), by issuing a notice in a local newspaper (The Daily Progress) on December 14, 2018. The 45-day comment period ended on January 28, 2019. EPA received comments from two sources during the comment period: NGSC and Unisys Corporation. The SB is incorporated into this FDRTC by reference. This FDRTC corrects some errors and omissions in the SB, based on the comments received during the comment period. See Attachment A for EPA's Response to Comments.

This FDRTC is issued pursuant to the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) of 1976, and the Hazardous and Solid Waste Amendments (HSWA) of 1984, 42 U.S.C. Sections 6901, et seq.

EPA's Fact Sheet on the Facility is located at: https://www.epa.gov/hwcorrectiveaction/hazardous-waste-cleanup-northrop-grumman-systems-corp-charlottesville-va. Information on the Corrective Action program is located at: https://www.epa.gov/hwcorrectiveactionsites.

Section 2: Facility Background

In 1955, the Sperry Corporation (Sperry) developed the Facility for manufacturing periscopes and navigational related equipment. Equipment was tested on-site. Historic processes included machining, degreasing, soldering and painting. After its development, most of the Facility remained wooded. In 1986, Sperry merged with the Burroughs Corporation to form Unisys Corporation (Unisys). Within a year after the merger, Unisys sold the Facility, including the Properties, to Newport News Shipbuilding (NNS), a Tenneco subsidiary.

After Unisys sold the Facility to NNS in 1987, NNS sold it to J.F. Lehman & Associates in 1993, and in 1996, it was then sold to Litton Industries, Inc. In April 2001, Litton Industries was purchased by Northrop Grumman Corporation, and in 2003, Litton Marine Systems, Inc., the owner of the Facility, was merged into Northrop Grumman Systems Corporation (NGSC). Currently, NGSC only owns the 19-acre Manufacturing Parcel, which is used for designing and testing navigation systems used in large ships.

In 1986, the Facility was subdivided into three parcels or lots. In 1999, the parcel boundaries were revised. Two undeveloped parcels, Lots 1 and 2, were sold to developers and Lot 3 remained as the 19-acre manufacturing plant property a/k/a Manufacturing Parcel. Lot 2 became Parcel G. Figure 2 depicts the three parcels/lots which comprised the Facility. Lot 1 is not part of the Facility subject to this Final Remedy decision.

In 2015, a Costco retail store and parking lot were built on a portion of Lot 1 (Costco Parcel) (Figure 3). EPA issued a FDRTC for the Costco Parcel on July 9, 2014, which addressed remaining contamination originating from historic releases of waste solvents on that Parcel.

Parcel G is located adjacent the Manufacturing and Costco Parcels, as shown on Figure 3 (approximate boundaries). Parcel G is currently owned by OCT Stonefield Property Owner (OCT). Parcel G was developed for commercial use, which includes retail buildings and a parking lot.

On the Facility, there were two perennial (intermittent) streams called North and South Stream, respectively (Figure 2). North stream was in a ravine on Lots 1 and 2, northeast of the Manufacturing Parcel. Developers later diverted the North Stream into an underground pipe in the ravine, which was filled, leveled and paved for the Costco Parcel and Parcel G development. The South Stream was located on Lot 1, west of the Manufacturing Parcel and was also diverted into an underground pipe by developers. The two piped streams drain into a culvert under Seminole Trail and flow off-site into Meadow Creek, south of the Facility.

Chemicals historically used on the Manufacturing Parcel included Freon™, tetrachloroethene (PCE), trichloroethene (TCE) and 1,1,1-trichloroethane (TCA). PCE and TCE, used for degreasing, were later replaced with TCA. A paint booth was used in manufacturing and paint residues were collected and stored in drums on the north side of the Manufacturing Building on the Manufacturing Parcel. Several underground storage tanks were located on the south side of the Manufacturing Building and were removed.

Section 3: Summary of Environmental Investigations

3.1 Corrective Action Regulatory History

In August 1980, EPA received a Hazardous Waste Activity Notification for the Facility as required by RCRA § 3010. A 1988 inspection by Virginia Department of Waste Management (VDWM) identified the manufacturing plant (then owned by NNS), as a large quantity generator of waste solvents, corrosives and paint sludge. From 1987 to 1990, NNS voluntarily conducted environmental

investigations in preparation for subdividing and selling portions of the 81.6-acre property. The investigations included sampling of soil, soil vapor, surface water (SW), sediment and groundwater (GW). Contamination was identified in some areas.

In 1996, Unisys entered into a Voluntary Agreement with VDEQ to remediate the three Lots (Figure 2). Lots 1 and 2 were wooded parcels under contract to developers. Lot 3 included the Manufacturing Parcel and 13 wooded acres later added to Lot 1. In 1996, Unisys submitted Site Characterization Reports to VDEQ for Lots 1 and 2 and for Lot 3 in 1997. In 1998, a Supplemental Data Report for the three Lots was submitted. Risk assessments concluded that the three Lots did not present unacceptable risks to human health or the environment if land and groundwater (GW) use restrictions were implemented. In 2000, the property owner recorded the Declaration of Restrictive Covenants restricting the Properties to non-residential use and prohibiting GW as a drinking water source. Lot 1 had restricted GW use but unrestricted land use. In 2000, VDEQ issued a Certificate of Satisfactory Completion of Remediation (CSCR) for Lots 2 and 3, which included a copy of the use restrictions recorded on the deeds in July and March 2000, respectively. In 2002, VDEQ issued a CSCR for Lot 1 (included the 13-acres originally part of Lot 3), allowing unrestricted land use and prohibited GW use for drinking water purposes.

As part of Unisys's Voluntary Remediation Agreement with VDEQ, SW and sediment samples were collected from the North and South streams and 20 monitoring wells (MWs) were sampled. From 2000 to 2004, four years of GW data were collected from seven MWs on the three Lots. In the final GW Report to VDEQ (2005), Unisys concluded that GW contamination, consisting of chlorinated volatile organic compounds (cVOCs), showed stable or decreasing trends. In 2007, Unisys requested that VDEQ release the Facility from VDEQ's Voluntary Remediation Program (VRP) to continue investigation and clean up under an EPA Facility Lead Agreement (FLA). VDEQ agreed and issued a CSCR to Unisys (participant) and Litton Marine Systems (owner) for the remaining Lot 3 in 2000.

In January 2008, Unisys entered a FLA with EPA to identify data gaps and investigate any remaining areas identified for Corrective Action.

3.2 Environmental Investigations Summary:

3.2.1 Corrective Action RCRA Facility Assessment and RCRA Facility Investigation

In a 1996, VDEQ identified 10 solid waste management units (SWMUs), one hazardous waste management unit (HWMU) and one area of concern (AOC) focused primarily on the Manufacturing Parcel, then owned by J.F. Lehman & Associates. Ten years later, during a 2006 visit to the manufacturing building (then owned by NGSC), EPA re-evaluated the SWMUs, HWMU and AOC. Thirteen SWMUs were identified, with 8 located inside the Manufacturing Building and five SWMUs and two AOCs located outside. SWMUs inside the Manufacturing Building were not investigated because the units were on concrete floors with no visible floor drains and no evidence of releases. The previously identified HWMU was renamed SWMU-1. The Facility was designated as a small quantity hazardous generator at that time.

As part of the FLA with EPA, Unisys sent EPA a *RCRA Facility Investigation Work Plan* with a *Description of Current Conditions* (April 2008) (RFI WP). The RFI WP included the data collected

under VDEQ's Voluntary Remediation Program. The RFI WP built upon the previous investigations and identified areas where further investigation was needed. The RFI WP covered the Manufacturing Parcel, Parcel G and the Costco Parcel. Six areas were identified for further investigation, as listed below:

(1) SWMU-1: Former Paint Pit on Manufacturing Parcel;
(2) SWMU-9A: Former Used Drum Storage Area on Manufacturing Parcel;
(3) SWMU-9B: Former Hazardous Waste Storage Area on Manufacturing Parcel;
(4) AOC-2: Former Weed Control Area, partially on Parcel G;
(5) Facility-wide GW on Manufacturing Parcel and Parcel G; and
(6) North Stream Sampling on Parcel G.

The Units listed above as one through four, were identified as potential contaminant source areas. SWMU-9A and AOC-2 were considered the main source areas.

Investigation of the six areas was completed and the *RCRA Facility Investigation* (RFI) Report was submitted to EPA in September 2010. EPA approved the RFI Report in March 2013. The findings are discussed in Section 3.4, below.

3.3 Summary of Remedial Activities:

Prior to the FLA, Unisys completed remedial activities at two locations: (1) SWMU-1 (Former Paint Pit); and (2) AOC-1 (Former Diesel Fuel Spill). Under the FLA, Unisys conducted a soil removal at AOC-2 (Former Weed Control Area) (Figure 2). The remedial or Interim Measures (IMs) for clean-up at these three locations are detailed below.

SWMU-1: The Former Paint Pit, also known as the Former Neutralization Pit, was located outside the Manufacturing Building's northern corner. The Former Paint Pit was unlined and was used to neutralize and dispose of waste liquids from 1955 until the 1970s. Waste types and quantities are unknown. Unisys excavated 70 to 80 cubic yards of contaminated soil from the Former Pit (SWMU-1) in 1989 and stockpiled it on-site under plastic sheeting. The soil contaminants were primarily PCE, TCE, toluene and xylenes. The stockpiled soil was the subject of a Compliance Order with VDEQ. In 1990, Unisys transported the soil to an off-site hazardous waste landfill with VDEQs approval. In January 1995, VDEQ approved final closure.

AOC-1: In March 1998, a delivery truck at a loading dock struck a bollard in the southwestern corner of the Manufacturing Building and an estimated 15 gallons of diesel fuel were released. Diesel flowed onto the pavement with some seeping through. The Litton (on-Site) Spill Response and County Fire Department intercepted the spill before it reached the South Stream by using absorbents in stormwater boxes and a drain to the North Stream. Asphalt was removed at the spill site and 46 tons of contaminated soil was excavated. The stormwater pipe was flushed and absorbent pads and booms contained the flushed water in a pit. The stormwater pipe was inspected by camera and some debris and diesel fuel were removed. There was no evidence that diesel reached the South Stream. VDEQ approved the clean-up and required no further action.

AOC-2: The Former Weed Control Area was located on the current Costco Parcel and a portion of Parcel G (Figures 2 and 3). Information provided by employees who worked at the Facility in the 1970s

suggested that spent solvents were used for weed control on the Costco Parcel and Parcel G. Later investigations confirmed cVOC contamination in soil, soil gas, GW, SW and sediments in the North Stream. Solvent amount, types and frequency of application are unknown. The solvent application reportedly ended in the 1970s.

During the RFI, Unisys proposed an Interim Measure (IM) at AOC-2 to further delineate soil contamination and determine if soil removal was necessary. PCE and TCE were found in soil in discrete areas. Only PCE levels exceeded EPA's Regional Screening Levels (RSLs) for non-residential uses. Thereafter, Unisys excavated 2,581 tons of contaminated soil and disposed of it at a permitted off-site landfill. EPA approved the *AOC-2 IM Report* (November 2012) for the soil removal. GW monitoring data from the former AOC-2 shows some residual cVOCs in GW, however contaminant levels are declining.

3.4 Findings of Facility Investigations:

1. Site Geology and Hydrogeology: The Facility is underlain by the Charlottesville Formation, a highly faulted gneiss, and is situated in the Blue Ridge physiographic province. The upper portion of bedrock is moderately to highly weathered rock called saprolite. Competent bedrock is present beneath the Facility at depths ranging from 12 to 57 feet below ground surface (bgs).

GW is 15 to 50 feet below ground surface (bgs) in both unconsolidated and bedrock beneath the Facility. GW flow is generally to the east and southeast across the Facility, with the former stream channels acting as GW discharge zones for shallow GW, even though the streams were diverted into underground pipes.

2. Soil Sampling Results: Soil sampling began in 1987 with a bias towards known or suspected release locations. Samples were analyzed for cVOCs and semi-volatile organic compounds (SVOCs), metals, and in some areas, total petroleum hydrocarbons (TPH). Constituents of potential concern in soil were PCE, TCE and chromium. Soil results for all SWMUs and AOCs were screened against EPA's Risk Based Concentrations (RBCs) for industrial settings and only PCE exceed RBC levels at two locations: SWMU-9A (6 feet bgs) and at AOC-2. See discussion above in Section 3.3 (Summary of Remedial Activities) for the remedial measures taken at AOC-2. Elevated levels of TPH were found at depth at SMWU-9A.

3. North and South Stream Sampling Results: Surface water (SW) samples were collected in multiple locations in North and South Streams over a 10-year period (1988 to 1998). North Stream samples contained concentrations of cVOCs that had migrated from AOC-2 and possibly the Manufacturing Parcel. SW cVOC levels declined over time. In 1988, sample results showed only TCE exceeded EPA Region 3's Biological Technical Assistance Group Screening Benchmarks (BTAG) freshwater levels. In addition, in 1988, South Stream samples had no cVOC detections except for PCE in one location that diminished over time. Sediment samples were collected from both Streams at three locations in 1989. North Stream showed PCE exceedances of the BTAG screening level in two of three locations and South Stream in one location. In 2011, North Stream was sampled again before it was diverted into an underground pipe. One sediment sample exceeded the PCE BTAG screening level and in SW, PCE was below the applicable screening level. The intermittent streams are now conveyed through pipes underground due to development on Parcels surrounding the Manufacturing Parcel.

4. GW Sampling Results: GW MWs are currently monitored on the Manufacturing Parcel, Parcel G and the Costco Parcel and are shown on Figure 3. Table 1 shows GW contaminant levels from initial sampling to the most recent sampling. Except for MW W-3, all cVOCs levels have declining trends over time. MW W-3 has the highest level of cVOCs contamination on the Facility. TCE levels in MW W-3 increased after 1990 and remained above 2000 parts per billion (ppb) until 2005, when a declining trend began. The cVOCs in MW W-3 appears to be concentrated and confined in a fine-grained layer below 45 feet bgs.

Declining cVOC levels in GW can be attributed to significant reduction of cVOCs use in manufacturing and modern waste handling practices which reduce the likelihood of releases. Without further contaminant loading to the aquifer, natural attenuation processes, such as dilution, dispersion and in some locations, reductive dechlorination (possibly at MWs W-3, -22, -25, -26) are reducing residual levels of cVOCs in GW, as seen in Table 1 below.

MWs are screened in the shallow aquifer zone, except MWs W-21 and W-22, which are screened in deeper zones. MW W-22 is screened in competent bedrock downgradient of W-3. W-22 currently shows PCE above the Maximum Contaminant Level (MCL) of 5 ppb[1], (promulgated pursuant to Section 42 U.S.C. §§ 300f et seq. of the Safe Drinking Water Act and codified at 40 CFR Part 141), with TCE, cDCE and vinyl chloride below their applicable MCLs. W-21 shows non-detected levels of cVOCs. Data from MWs located on the perimeter of the Facility property boundary indicate contaminated GW is not flowing off-site.

Table 1 – cVOC levels in ppb[1]

MW ID	Date	PCE MCL= 5 ppb	TCE MCL=5 ppb	cDCE MCL=70 ppb	VC MCL=2 ppb
NGSC wells:	9/13/1987	380	1.7	NA [2]	ND [3]
W-1	6/18/2018	ND	ND	ND	ND
	3/17/1987	21	560	130	ND
W-3	6/18/2018	150	1900	420	ND
	3/11/1988	3000	29	1.3	ND
W-13	6/18/2018	89	5.2	ND	ND
	11/12/1989	990	16	NA	ND
W-19	6/18/2018	4.8	ND	ND	ND
	9/24/2008	ND	ND	ND	ND
W-21	6/20/2013	ND	ND	ND	ND
	9/25/2008	7.9	56	22	ND
W-22	6/18/2018	5.8	4.4	14	ND
Parcel G wells	10/08/2015	6.1	1.3	ND	ND
W-23	6/18/2018	6.6	1.2	ND	ND
	10/08/2015	ND	ND	ND	ND
W-24	6/18/2018	ND	ND	ND	ND
Costco wells:	10/08/2015	21	13	8.2	ND
W-25	6/18/2018	13	4.4	2.5	ND
	10/08/2015	230	64	6.7	ND
W-26	6/18/2018	180	43	4.9	ND
W-27	10/08/2015	ND	ND	ND	ND

[1]ppb - parts per billion; [2] NA – Not Analyzed; [3] ND – Not detected

5. Parcel G - Soil and Soil Gas Sampling Results: Prior to development of Parcel G, the developer (EDENS), sent EPA a Workplan (WP) for soil and soil gas sampling for cVOCs because a portion of AOC-2 is located on Parcel G. EPA approved the WP in December 2014. In July and September 2015, EDENS collected six soil gas samples 5 feet below subgrade where five retail pad/sites were planned, and two deeper soil gas samples (>15 feet bgs) from the bedrock/soil interface. Soil samples were also collected. CVOCs were not detected in soil samples. However, some cVOCs in soil gas were found, with only PCE exceeding VADEQ's commercial screening levels at one planned retail pad. EDENS' Report recommended installation of a Vapor Control System (VCM) in the building planned for that location. EPA approved the November 2015 *Vapor Intrusion Assessment (Stonefield G Parcels)* Report, including the VCM recommendation. The EPA-approved VCM system was installed.

6. Manufacturing Building Sub-Slab and Indoor Air Sampling: The highest TCE level in GW is found at W-3. W-3 is located within 20 feet of the Manufacturing Building. Because of W-3's proximity to the Manufacturing Building, EPA requested that Unisys conduct a vapor intrusion (VI) evaluation inside that building. EPA approved the *RFI Workplan Addendum #2, Vapor Intrusion Evaluation–1987 Building Addition* and sampling began in March 2017. The VI Evaluation consisted of six sub-slab sampling points inside the Manufacturing Building (within 100 feet of W-3), an outdoor soil gas sample collected between W-3 and the Manufacturing Building and an outdoor ambient air sample collected upwind of the building. Indoor air samples were not collected because of concern that indoor chemical storage and operations involving chemicals would inflate sampling results.

Sampling results from the Manufacturing Building presented in Unisys' *VI Evaluation Report* (May 2017) showed that cVOCs were present in sub-slab soil gas and in the outside soil gas sample. Sub-slab soil gas results were used to estimate potential indoor air VOC levels using EPA's default attenuation factor for sub-slab to indoor air (0.03). Cross-slab pressure differentials created by indoor heating and cooling were also measured. Estimated indoor air results were compared to EPA's Regional Screening Levels (RSLs) for industrial indoor air exposure for workers using 10-hrs/day exposure. The results for indoor air in the Manufacturing Building were within EPA's acceptable risk range, indicating that estimated VOC levels in indoor air would not pose unacceptable risk to workers. PCE was the primary cVOC detected with smaller concentrations of TCE detected. EPA approved the *VI Evaluation Report* in June 2017.

To confirm the results, Unisys repeated the sub-slab soil gas sampling at the same six indoor locations in February 2018. Using the sub-slab data, building air exchange rates and the estimated or calculated risk formula, indoor air level risk in the Manufacturing Building was within acceptable levels.

NGSC conducted its own sub-slab sampling event throughout the Manufacturing Building in November 2017 and conducted indoor air sampling events in December 2017 and January 2018. NGSC collected sub-slab air samples from 12 locations in areas not already sampled by Unisys (farther than 100 feet from W-3). NGSC then collected 5 indoor air and 2 outdoor air samples in December 2017 and again in January 2018. Outdoor air samples were collected near air intakes to the Manufacturing Building. NGSC submitted its Report of findings, *Sub-Slab Soil Vapor and Indoor Air Data Collected by Northrop Grumman* to EPA in April 2018.

In three locations, NGSC's sub-slab results showed PCE and TCE levels at much higher levels than Unisys sub-slab sample results, which were taken from different locations in the Manufacturing

Building, farther than 100 feet from W-3. EPA used the Vapor Intrusion Screening Level (VISL) calculator to evaluate potential indoor air risks to worker health based on NGSC's sub-slab air results. According to the VISL calculator, 6 of the 12 NGSC sub-slab results exceeded acceptable risks for indoor air for non-carcinogenic effects. EPA used a 10 hour/day worker exposure time, which is a typical work shift as provided by NGSC (see Table 2). EPA's acceptable excess lifetime cancer risk range for carcinogens is 1 cancer incidence in 10,000 (10^{-4}) to 1,000,000 (10^{-6}) people and a non-cancer hazard index of no greater than 1.

Table 2
NGSC Sub-Slab Air (SS) Results* & EPA VISL Indoor Calculated Risk

SS Sample ID VOC levels in ug/m³ **	PCE RSLi = 47	TCE RSLi=3	Carcinogenic Risk EPA Target 10^{-4} to 10^{-6}	Non-Cancer Hazard Risk EPA Target=1
SG-2	56,300	<391	4.48E-05	12.1
SG-3	39,300	<262	3.12E-05	8.41
SG-5	3,240	212	5.23E-06	1.60
SG-6	2,290	319	5.82E-06	1.86
SG-7	5,080	230	6.92E-06	2.07
SG-8	6,740	524	1.19E-05	3.69

*November 2017 data; **ug/m³ – micrograms per cubic meter.

Table 3 below shows the VISL risk calculations for the two of five IA samples where PCE and TCE were detected. For the actual measured indoor air (IA) results, indoor air risk was within EPA's acceptable risk range using EPA's risk calculator (VISL) for IA in industrial settings. IA-1 non-hazard risk of 1.44 rounds to 1. Outdoor air samples showed no detections for PCE or TCE. EPA used a 10 hour/day exposure. EPA's VISL calculation does not consider outdoor/indoor air exchange rates in the Plant or a site-specific attenuation factor for sub-slab vapor to indoor air.

Table 3
NGSC Indoor Air (IA) Results & EPA VISL Indoor Calculated Risk

IA Sample ID VOC levels in ug/m³ *	Date	PCE RSLi = 47	TCE RSLi=3	Toluene RSLi = 22,000	Carcinogenic Risk EPA Target 10^{-4} to 10^{-6}	Non-Cancer Hazard Risk EPA Target=1
IA-1	12/28/2017	159	2.12	19.4	5.10E-06	1.44
	01/20/2018	11.7	<2.15	152.0	3.10E-07	0.09
IA-2	12/28/2017	25.2	<7.20	45.9	6.68E-07	0.18
	01/20/2018	<5.43	<2.12	84.7	N/A**	0.0048

* ug/m³ – micrograms per cubic meter; ** N/A – Not Applicable - toluene is not considered a carcinogenic chemical.

Even though the VISL screen indicates that IA is within EPA's acceptable risk, the results for IA-1 and the elevated sub-slab levels of PCE and TCE in 6 of the 12 sub-slab locations indicates that vapor intrusion has the potential to pose unacceptable risk in the Manufacturing Building during the heating season.

3.5 Human Health Risk Assessment

Currently, there are no human or ecological exposures to Facility-related contaminants in areas outside and near the Manufacturing Building. However, NGCS sub-slab and indoor air sampling indicate that PCE and TCE vapor has the potential to enter the Manufacturing Building from the subsurface during the heating season at levels that may exceed EPA's acceptable risk.

Human exposure to soil is unlikely, given that soil surfaces at the Facility are paved or covered with buildings. Future construction worker exposure to any residual Facility-related contaminants at depth (soil or VOC vapors) can be controlled by implementing an EPA-approved Facility Soil Management Plan. According to GW data, contaminated GW remains within Facility boundaries. The Facility and surrounding area is supplied with public water and sewer. Land and GW use restrictions were placed in the land records for the Facility property, including the Properties, under the VA VRP program, prohibiting residential use of the land and prohibiting GW use for drinking water or industrial source purposes.

3.6 Environmental Indicators

Under the Government Performance and Results Act (GPRA), EPA set national goals to address RCRA corrective action facilities. Under GPRA, EPA evaluates two key environmental clean-up indicators for each facility: (1) Current Human Exposures Under Control; and (2) Migration of Contaminated Groundwater Under Control. The Facility met both indicators for the Facility in July 2008 and January 2016, respectively. The environmental indicator forms are linked to EPA's Fact Sheet for this Facility, found at the web address in Section 1.

Section 4: Corrective Action Objectives (CAOs)

EPA's Corrective Action Objectives (CAOs) for environmental media for:

1. Soil

EPA has determined that the EPA RSLs for Industrial Soil for direct contact are protective of human health and the environment for individual contaminates throughout the Properties provided that the Properties are not used for residential purposes. Therefore, EPA's CAO for soils at the Properties is to maintain RSLs for Industrial Soils and control exposure to the hazardous constituents remaining in those soils.

2. Groundwater

EPA expects final remedies to return usable GW to its maximum beneficial use within a reasonable timeframe, given the circumstances of the project. For projects where aquifers are either currently used for water supply or have the potential to be used for water supply, EPA uses drinking water standards, otherwise known as MCLs, as the cleanup standard. Therefore, EPA's CAO for groundwater at the Properties is to achieve MCLs and control exposure to the hazardous constituents remaining in the GW until the applicable MCLs are achieved.

3. Indoor Air

The CAO for vapor intrusion in occupied buildings is to control human exposure to indoor air concentrations caused by Facility-related contaminants (PCE and TCE) that were released to soil and/or groundwater exceeding EPA's acceptable cancer risk range (10^{-4} to 10^{-6}), and a hazard quotient of 1 or less for non-carcinogenic health effects.

Section 5: EPA's Final Remedy

EPA's Final Remedy for the Properties consists of:

1. Soil:

Based on the available information, including the implementation of the Interim Measures, there are currently no unacceptable risks to human health and the environment via soil for the present and future reasonable anticipated use of the Properties, which is non-residential. Most of the Properties' surface is paved or covered with buildings, therefore, human exposure to soil is very limited. Because contaminants remain in subsurface soil at the Properties above levels above what EPA considers acceptable for residential use, the soil remedy is: (a) a land use restriction (see Institutional Controls below) and, (2) conformance with an EPA approved Soil Management Plan for any subsurface soil disturbance. Prior to any earth moving activities, including excavation, drilling and construction in areas where contaminants may remain at levels above residential use, or GW above CAOs, shall be conducted in accordance with a Soils Management Plan to be developed and submitted to EPA for review and approval.

2. Groundwater (GW):

EPA's GW remedy consists of monitored natural attenuation with continued monitoring until MCLs are met in the areas of the Properties with GW contamination. GW monitoring will be in conformance with an EPA approved GW Monitoring Plan.

EPA anticipates that remaining GW contamination will attenuate naturally over time, ultimately achieving GW drinking water standards (MCLs) without further treatment. Therefore, EPA's Final Remedy for GW at the Properties consists of monitored natural attenuation with continued monitoring, and compliance with and maintenance of GW use restrictions, as implemented though institutional controls at the Property, until drinking water standards (MCLs) are met. EPA also proposes that use restrictions be maintained to prevent exposure to contaminants while contaminants remain above drinking water standards.

3. Vapor Intrusion (VI):

Based on the available information, there currently is a potential for unacceptable risk in occupied buildings at the Properties, located above contaminated soil and/or GW plume and within 100 feet of the contaminated GW plume through the vapor intrusion pathway. See Figure 4 for a depiction of the GW plume area. Therefore, EPA's proposed remedy is for the installation of a vapor control system

("VCS") and compliance with an EPA-approved Operation and Maintenance Plan for such VCS in any existing occupied building and any building to be constructed on the Properties located above contaminated soil and/or GW plume or within 100 feet of the perimeter of the contaminated GW plume, unless otherwise demonstrated to EPA that vapor intrusion does not pose unacceptable risk to human health in such building and EPA provides written approval that no vapor control system is needed. With respect to existing buildings on the Properties, a VCS was installed in a retail building located on Parcel G (Retail G3 shown in Figure 5) during that building's construction.

4. Intermittent Streams:

EPA is proposing no further action for the streams because surface water and sediment no longer presents an unacceptable risk to human health or ecological receptors and the intermittent streams are now conveyed in underground pipes.

5. Institutional controls (ICs)

ICs are non-engineered instruments, such as administrative and legal controls to minimize potential human exposure to contamination and/or protect the integrity of the remedy decision by limiting land or resource use. Under the Final Remedy, some contaminants remain in groundwater and soil at the Properties above levels appropriate for residential uses. Therefore, EPA's Final Remedy requires compliance with and maintenance of land and GW use restrictions. The ICs shall include, but are not limited to, the following land and GW use restrictions:

a. Groundwater at the Properties shall not be used for any purpose other than operation, maintenance and monitoring activities required by EPA and/or VDEQ, unless its demonstrated to EPA, in consultation with VDEQ, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy and EPA, in consultation with VDEQ, provides prior written approval for such use;

b. The Properties shall not be used for residential purposes unless it is demonstrated to EPA, in consultation with VDEQ, that such use will not pose a threat to human health or the environment or adversely affect or interfere with the selected remedy, and EPA, in consultation with VDEQ, provides prior written approval for such use;

c. A vapor intrusion control system (VCS) shall be installed in each structure where testing indicates an unacceptable indoor risk. Each installed VCS shall be operated until it is demonstrated to EPA that vapor intrusion in such structure does not pose unacceptable risk to human health, and EPA provides written approval to terminate the operation of the VCS;

d. No new wells will be installed at the Properties unless it is demonstrated to EPA and VDEQ that the wells are necessary for final remedy implementation and EPA provides prior written approval to install the wells;

e. Compliance with an EPA approved groundwater monitoring plan;

f. Compliance with an EPA approved Soil Management Plan for any subsurface soil disturbance;

g. Compliance with an EPA approved Vapor Control System Operating & Maintenance Plan.

In addition, Unisys shall provide EPA with a coordinate survey of Properties' boundaries. Mapping the extent of the land and groundwater use restrictions will allow for presentation in a publicly accessible mapping utility such as Google Earth or Google Maps.

EPA, VDEQ and/or their authorized agents and representatives, shall have access to the Properties to inspect and evaluate the continued effectiveness of the Final Remedy and if necessary to conduct additional remediation to ensure the protection of the public health and safety and the environment.

Section 6: Financial Assurance

EPA will evaluate whether financial assurance for corrective action is necessary to implement EPA's Final Remedy at the Properties once these costs are provided to EPA in the Corrective Action Implementation Plan. Estimated costs for the implementation of land use restrictions, implementing an EPA-approved Soil Management Plan, GW monitoring and installation and maintenance of vapor control systems over 10 to 20 years will be evaluated to determine whether financial assurance is required.

Section 7: Public Participation

EPA announced the 45-day public comment period in a local newspaper, The Daily Progress. The comment period was from December 14, 2018 to January 28, 2019. EPA received comments from Unisys Corporation and Northrop Grumman Systems Corporation. The comments and EPA's responses are presented in Attachment A.

Section 8: Signature

Date: 7.1.19

John A. Armstead, Director
Land, Chemicals and Remediation Division
US EPA, Region III

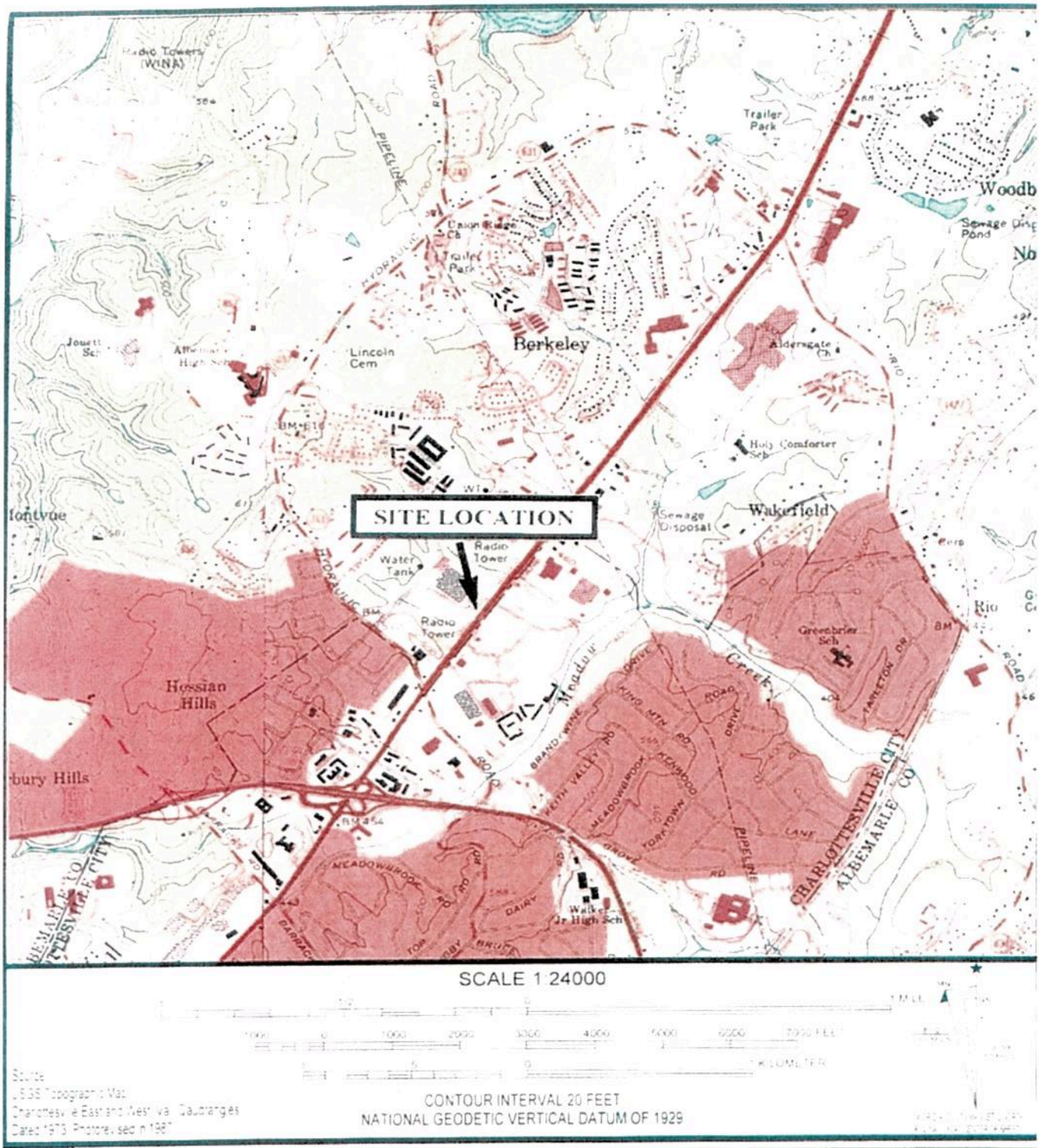
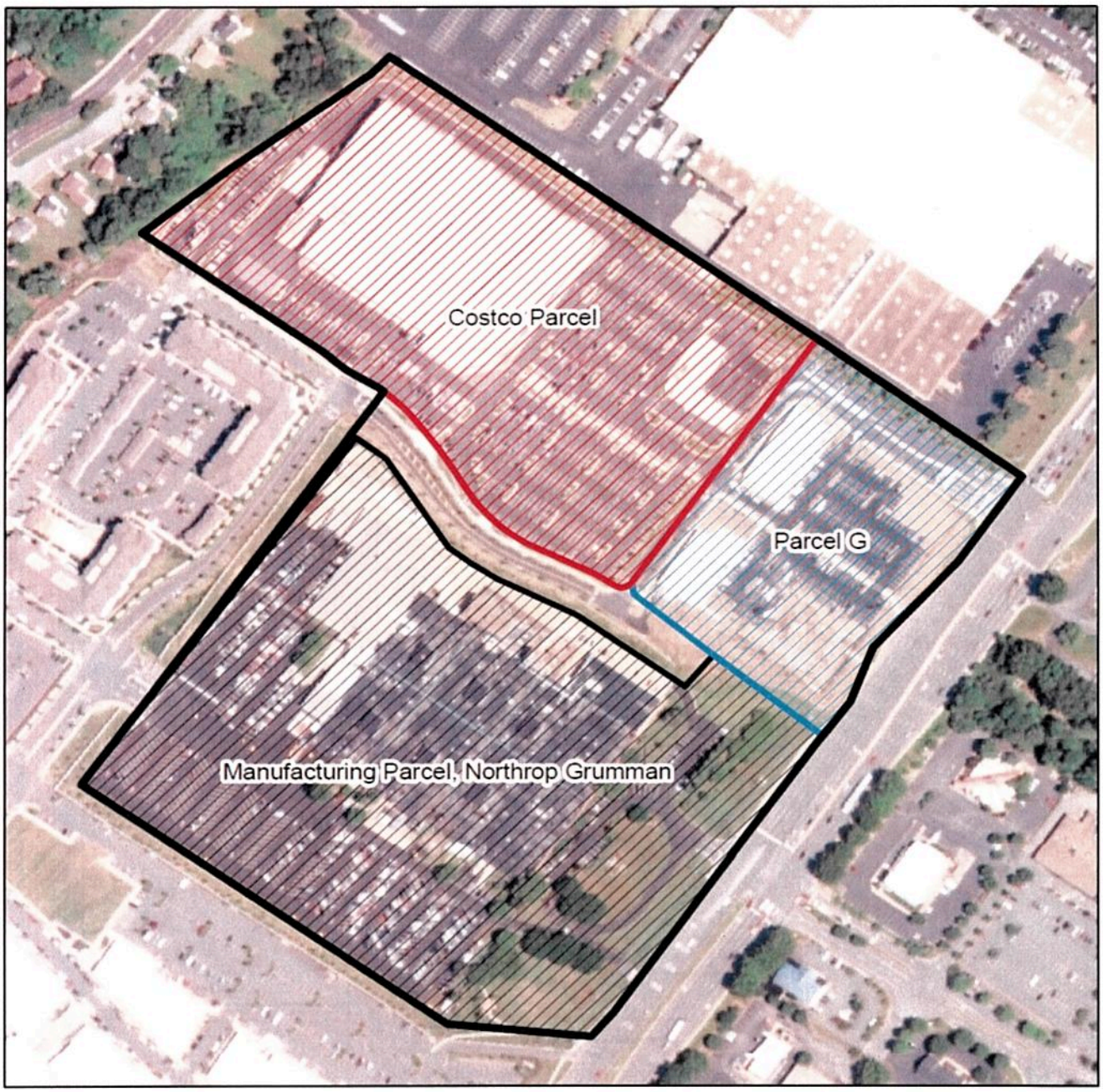


FIGURE 1 - SITE LOCATION MAP
SPERRY MARINE-NORTHROP GRUMMAN PROPERTY
1070 SEMINOLE TRAIL
CHARLOTTESVILLE, VIRGINIA 22901

AOC-2
FORMER WEED CONTROL PROGRAM
LOT 1
LOT 2
LOT 3
SWMU-1
FORMER PAINT PIT
SWMU-9B
FORMER HAZARDOUS WASTE STORAGE AREA
SWMU-9A
FORMER USED DRUM STORAGE AREA
NORTH STREAM
SOUTH STREAM
SEMINOLE TRL
400 200 0 400 Feet
Site Plan
Sperry Marine RFI Work Plan
Charlottesville, Virginia
Geosyntec consultants
Figure
2
Columbia, Maryland
April 2008
Legend
SWMU/AOC
Site Boundary
Property Boundary
Stream
Sources:
Stream centerlines: County of Albemarle/ Department of Planning and Community Development/Office of Geographic Data Services
Aerial Photo: National Agricultural Imagery Program (July 2005)



Northrop Grumman Systems Corporation
1070 Seminole Trail
Charlottesville, VA 22901-2891
EPA ID: VAD003123833

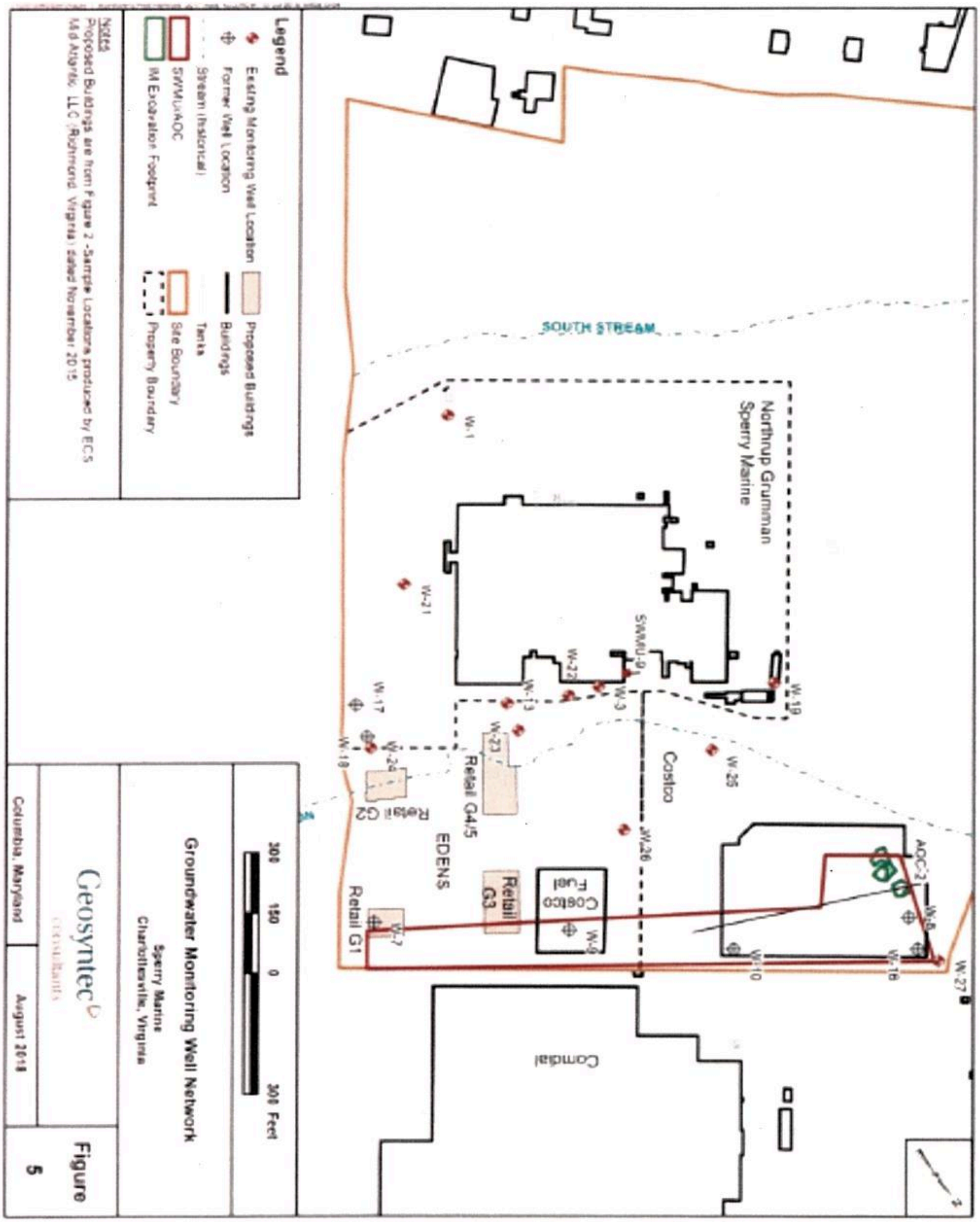
Figure 3
Manufacturing Parcel
Parcel G
Costco Parcel

N
W E
S

Former Entire Facility (approximate)
Costco Parcel
Parcel G (approximate)
Manufacturing Parcel (approximate)

0 200 400 600 800 1,000
Feet

Legend
Existing Monitoring Well Location
Former Well Location
Stream (historical)
SWMU/AOC
Proposed Buildings
Buildings
Tanks
Site Boundary
Property Boundary
Notes
VOC - Volatile Organic Compounds
PCE - Tetrachloroethene
TCE - Trichloroethene
c12DCE - cis-1,2-Dichloroethene
VC - Vinyl Chloride
All values are presented in micrograms per liter (ug/l).
Proposed Buildings are from Exhibit 3 - Potentiometric Surface Map produced by Terracon Consulting Engineers and Scientists (Raleigh, North Carolina) dated May 2013
300 150 0 300 Feet
Groundwater VOC Analytical Results Map
Sperry Marine
Charlottesville, Virginia
Geosyntec consultants
Columbia, Maryland
August 2018
Figure
4
SOUTH STREAM
AOC-2
SWMU-9
Comdial
Costco Fuel
Retail G1
Retail G2
Retail G4/5
W-1
W-3
W-7
W-8
W-9
W-10
W-13
W-16
W-18
W-19
W-22
W-23
W-24
W-25
W-26
W-27



Legend
Existing Monitoring Well Location
Former Well Location
Stream (historical)
SWMU/AOC
IM Excavation Footprint
Proposed Buildings
Buildings
Tanks
Site Boundary
Property Boundary
Notes
Proposed Buildings are from Figure 2 - Sample Locations produced by ECS Mid Atlantic, LLC (Richmond, Virginia) dated November 2015
SOUTH STREAM
Northrup Grumman Sperry Marine
Costco
Costco Fuel
Retail G1
Retail G2
Retail G3
Retail G4/5
EDENS
Comdial
300 150 0 300 Feet
Groundwater Monitoring Well Network
Sperry Marine
Charlottesville, Virginia
Geosyntec consultants
Columbia, Maryland
Figure
5

Attachment A

Response to Comments

I. Comments by **Unisys Corporation (Unisys)** are shown in black and EPA's responses are in blue. Some comments, where noted, have been summarized because of length and/or repetition. Sections refer to the Section number in the Statement of Basis (SB).

1. Section 1: In the first sentence, EPA defines the Sperry Marine Facility as the "Facility." In Section 2, EPA defines Sperry Corporation as "Sperry". It is important to understand that not all of EPA's references to "Sperry" are references to Sperry Corporation or Unisys Corporation, as successor to Sperry Corporation….EPA should clarify the SB to make clear when it is referring to Northrop Grumman and when it is referring to Unisys.

EPA Response: EPA agrees with the comment. The Final Decision and Response to Comments (FDRTC), the first paragraph of Section 1 clarifies that the Facility refers to the former 81.6-acre property and defines the 'Properties' as a sub-set of Facility parcels, that consists of the Manufacturing Parcel and Parcel G, and that Northrup Grumman Systems Corporation (NGSC) is the current owner of the Manufacturing Parcel. Under Section 2, EPA added a more detailed ownership history of the larger 81.6-acre property and specified Unisys' role in VDEQ Voluntary Agreement activities.

2. Section 2 (paragraphs 1): EPA states that "Unisys sold the 19-acre Manufacturing Parcel within a year after the merger." EPA should clarify the SB to say that Unisys sold the entire property (81.6 acres) to Newport News Shipbuilding. (Paragraph 2): EPA says that "…a 19-acre parcel referred to as the Manufacturing Parcel was retained by Sperry for manufacturing operations." EPA should revise the SB to clarify that Unisys sold the entire property to Newport News Shipbuilding (NNS) in 1987 and that NNS, using the name "Sperry Marine", or some form of that name, retained the 19-acre parcel for manufacturing operations. Unisys as successor to Sperry did not retain the Manufacturing Parcel for manufacturing operations or any other part of the property.

EPA Response: EPA agrees with the comment. In the FDRTC, Section 2, 1st paragraph, EPA changed the sentence to 'Within a year after the merger, Unisys sold the Facility, including the Properties, to Newport News Shipbuilding (NNS), a Tenneco subsidiary.' In the 2nd paragraph, EPA removed the sentence from the FDRTC.

3. Section 2 (paragraph 5): Unisys recommends that EPA revise the SB to clarify that the two streams were diverted into buried culverts by developers of the property outside of the Manufacturing Parcel.

EPA Response: EPA agrees with the comment. In the FDRTC, EPA added the Lot numbers that the intermittent streams were on and clarifies that they were not on the Manufacturing Parcel.

4. Section 2 paragraph 6: 'Unisys requests that EPA revise the SB to state the timeframe when chemicals were used and when the various other activities identified took place. As indicated in Section 3.1 of the SB….'

EPA Response: In the FDRTC, EPA changed the sentence from 'Chemicals used on the Manufacturing Parcel included…', to 'Chemicals historically used on the Manufacturing Parcel included….' EPA used the wording from Unisys' RCRA Facility Report (RFI), 2010, where Unisys provided historical information, which also did not specify the ownership or timeframes.

5. Section 3 (EPA summary of 4 comments): Paragraph 1: For the dates, along with the activities mentioned in paragraph 1, Unisys requested that EPA name the specific owner at the time of the activities described in the paragraph, rather than using 'Sperry'. Paragraph 2 to 4- Instead of using 'Sperry', specify that Unisys entered into a Voluntary Agreement with VDEQ, submitted Site Characterization Reports, final GW Report to VDEQ and entered into a FLA with EPA. Also, use the owner at the time that recorded the Covenants.

EPA Response: EPA agrees with the comment. In the FDRTC, EPA made the suggested changes in paragraphs 1-4. The Statement of Basis (SB) is a summary of the Site environmental history and investigations on the Manufacturing and G Parcels. While EPA understands Unisys' concern with specifying Unisys' and succeeding owners and years of ownership, for the purposes of supporting and proposing a remedy, ownership details are peripheral to describing where the contaminants were found, their potential impact to human health and the environment, and how the potential unacceptable risk is to be addressed. However, EPA seeks to be as accurate as possible and made Unisys' requested changes in the FDRTC.

6. Section 4 (EPA summary of comment): EPA's Corrective Action Objectives for #3 Indoor Air: Unisys reiterates that it had not operated at the Site since 1987 and that Litton operated the Facility in 1988 when the Facility was identified as a large quantity generator [of waste solvents, corrosives and paint sludge], and that NGSC was identified as a small quantity waste generator in 2006. Also, that the results of Unisys' sub-slab investigation results from the NGSC building suggests that shallow soils are the more likely driver for sub-slab VOC vapors than groundwater.

EPA Response: EPA acknowledges the comment. EPA stated its objectives for Facility soil, groundwater and indoor air, which are independent of the of the site ownership history. Further, to remove any ambiguity with respect potential source of contaminant to indoor air, the FDRTC now states that 'The [Corrective Action Objective] CAO for vapor intrusion in occupied buildings is to control human exposure to indoor air concentrations caused by Facility-related contaminants (PCE and TCE) that were released to **soil and/or groundwater**….'

7. Section 5, 1. Soil (EPA summary of comment): EPA indicates that a Soil Management Plan (SMP) should be prepared for EPA approval that will address handling of 'any subsurface soil disturbance.' Unisys' concern is that it has not owned or operated at the property for over 30 years and EPA should not assume that environmental impacts in soil are a result of Unisys operations, as there have been a number of successive owners.

EPA Response: EPA acknowledges the comment and notes that the SB and FDRTC do not identify who caused the contamination or who will be responsible for the implementation of the remedy. Therefore, no change is necessary.

8. Section 5, 2. GW (EPA summary of comment): "….GW monitoring will be in conformance with an

EPA-approved GW monitoring plan (GMP). The proposed ICs also include compliance with said GMP. Unisys submitted a GWP dated May 23, 2014 to EPA that appears to be acceptable to EPA. Unisys proposes that GW monitoring at the Site continue at the Site in accordance with the May 2014 GMP.

EPA Response: EPA acknowledges the comment. Once the Final Remedy is finalized, Unisys may request EPA to consider the May 2014 GMP to satisfy the required GMP for the Final Remedy.

9. Section 5, 3. Vapor Intrusion (EPA summary of comment): '….as has been done to date, testing groundwater from the existing network of monitoring wells, knowledge of residual concentrations of VOCs in soil and interpretations of groundwater flow direction provide a basis for evaluating the groundwater VOC plume with respect to vapor intrusion in the future.' 'EPA recommendations regarding vapor control appear to disregard the already installed and operating HVAC system in the NGSC buildings, which, so far as Unisys is aware, are maintaining indoor air concentrations that meet EPA's stated CAO for indoor air….Furthermore, sub-slab testing by Unisys and NGSC has already negated the worth of correlating groundwater VOC concentrations with sub-slab vapor VOCs. And NGSC's testing has shown that, of the numerous locations they tested near suspected VOC source areas, only two have been identified by EPA as warranting some measure of vapor control, which potentially could be accomplished by the HVAC system. Unisys, therefore, requests that EPA revise the SB to state that vapor testing be conducted for any future construction of buildings.

EPA Response: With respect to future buildings, the FDRTC does provide for a demonstration, for EPA review and approval, that vapor intrusion does not pose unacceptable risk to human health in such buildings, thus not requiring a VCS. Absent of such demonstration and its approval by EPA, a VCS is required for all future buildings that are to be occupied. With respect to the existing building, in the FDRTC, EPA concluded that there is a **potential** for unacceptable risk from vapor intrusion to the existing building and does not have documentation that supports the claim that the "already installed and operating HVAC system in the NGSC buildings….meet EPA's stated CAO." Therefore, no change is necessary. Unisys may provide a demonstration that for the existing building, including an analysis of the effectiveness of the HVAC system functioning as a building VCS, that vapor intrusion does not pose a potential unacceptable risk. EPA expects that such demonstration to include, at a minimum, an analysis accounting for seasonal (heating/cooling) variations.

10. Section 6, Table 3, #1 Protect human health and the environment: Unisys requests that EPA revise the SB to state that vapor testing be conducted for any future construction of buildings at the Facility, rather than requiring installation of a vapor control system in new structures over or within 100 feet of the contaminated water plume.

EPA Response: See response to comment #9.

II. Comments by **Northrop Grumman Systems Corporation (NGSC)** and EPA's responses**.** Some comments, where noted, have been summarized because of length and/or repetition.

A. The FDRTC should clarify whether a VCS must be designed, installed and operated now in the Manufacturing Building (EPA summary): '….As a result, the SB says on pages 10-11:
"Therefore, EPA's proposed remedy is for the installation of a vapor control system ("VCS") and compliance with an EPA-approved Operation and Maintenance Plan for such VCS in any existing

occupied building and any building to be constructed on the Properties located above the contaminated GW plume or within 100 feet of the perimeter of the contaminated GW plume…." While the proposed remedy appears unequivocal, it is not because EPA added the following language to end of the sentence: "….unless otherwise demonstrated to EPA that vapor intrusion does not pose unacceptable risk to human health in such building and EPA provides written approval that no vapor control system is needed."

NGSC asks that EPA clarify its intent. We believe EPA intends to require that Unisys design, install and operate a VCS *now* in the Manufacturing Building, subject to the possibility of EPA agreeing to terminate operation of the system *later* based on a future demonstration by Unisys that vapor intrusion no longer poses an unacceptable risk.[1] If this is EPA's intent, we ask that EPA modify the sentence quoted above in the manner set forth in Section C, below.

[1] As written, one could read the sentence to mean that EPA has reached no conclusion on whether a VCS is required now and is willing to consider a demonstration now before making a decision. We do not believe that is what EPA intended.

EPA Response: Based on the recognition that further evaluation and assessment of the pathway is an element of the scoping and design of a VCS system, EPA's intent is twofold. In the short term, to acknowledge that there is a possibility that further evaluation of the Vapor Intrusion pathway may yield a demonstration that a VCS system may not be necessary or required. For the long term, if a VCS is installed and operated, then an approved demonstration is required before the system is no longer required. Based on the available information, EPA concluded that there is a **potential** for unacceptable risk from vapor intrusion. EPA expects this evaluation and assessment be conducted under the Corrective Measures Implementation Plan that will be required after FDRTC.

Comment A, con't: Note that the SB incorrectly attributes the elevated concentrations of the contamination in soil vapor beneath the Manufacturing Building to underlying GW conditions, such as contamination at well W-3. As discussed in Section B. below, the soil vapor conditions are associated with soil contamination beneath the Manufacturing Building that was not delineated by Unisys during the remedial investigations. The information and analysis presented in the May 2017 and April 2018 Stantec reports clearly identified historical waste practices associated soil contamination by Unisys and its predecessors that continues to be present beneath the Manufacturing Building. As a supplement or an alternative to the VCS, NGSC believes that EPA should consider requiring Unisys to delineate and remediate contaminated soils beneath the Manufacturing Building to levels that no longer pose a vapor intrusion risk. Targeted vapor extraction, based upon appropriate investigatory data to define the nature and extent of source mass in soil, is one option that should be considered.

EPA Response: EPA partially agrees with the comment. In the SB, EPA concluded that based on the available data, there is a potential risk to workers from breathing cVOC vapor in indoor air, such that it proposed a final remedy for cVOC vapor in indoor air. EPA agrees that vapor intrusion into indoor air may occur from contaminated soil and/or groundwater, and the indoor air CAO in the FDRTC now reflects this. With respect to the soil characterization, soil samples collected in 2008 at SWMU-9A for the RFI showed only one soil sample that exceeded EPA's current soil screening level for industrial settings (for PCE). Four soil samples had lower level PCE levels that indicated a potential for leaching into groundwater. Pre-RFI soil sampling (1987) at SWMU-9A showed only one sample that exceeded EPA's 1987 screening level for industrial settings for PCE. TCE was detected at levels below the screening level. These results do not indicate a need for further characterization for the assessment of the

soil pathway from beneath the current building. Therefore, EPA concluded that there is no current unacceptable risk from direct contact to soils, and the final remedy requires institutional controls to ensure the integrity and protectiveness of the remedy over time. It is anticipated that additional characterization and evaluation is to be conducted for the purposes of the implementation of the Vapor Intrusion remedy. While the remedy proposes VCS as the technology, it allows, through a demonstration, other methods to ensure that the that the CAOs for indoor air are met.

B. Assuming EPA requires a VCS now, the FDRTC should require Unisys to design, install and operate it (EPA summary/paraphrase): Because the contamination that requires operation of the VCS was caused by Unisys and its predecessors, EPA should make clear that Unisys is responsible for designing, installing and operating that system. Historical information shows operations began on the Manufacturing Parcel in October 1953. Unisys and its predecessors used the manufacturing Parcel for 24 years to manufacture electronics before that and adjacent parcels were sold to Sperry Marine in 1987. Figure 4 of NGSC's sub-slab and indoor air sampling report (April 2018) [Attached] shows the historical configuration of the Manufacturing Building. Buildings 1 and 2 were original buildings in place by the mid-1950's. Buildings 3 through 5 (present-day Hydraulics Shop, where indoor air samples showed PCE and TCE detections in indoor air), were constructed in the early to mid-1970's over areas where disposal of hazardous substances and/or wastes had already occurred. Figure 3 [attached] shows a soil gas survey from 1988 showing VOC vapor readings around the building in the areas shown.

EPA Response: RCRA assigns responsibility for Corrective Action to facility owners and operators. EPA will exercise its authorities to require the implementation of the Final Remedy as appropriate.

C. Any VCS installed should be designed to encompass all areas where contaminant mass exists in soil and/or groundwater that poses a potential vapor intrusion health risk: As noted above, the RFI Report did not accurately identify the nature and extent of contamination beneath the Manufacturing Building. The historical soil gas data [from 1988] (Figure 3 attached), the present day understanding of former waste disposal practices beneath the Manufacturing Building prior to its expansion, and the 2017 and 2018 soil vapor data collected by Stantec [NGSC contractor] provide significant information about the areas where soil and vapor contamination is present. Additional investigatory work should be performed by Unisys to fully define the nature and extent of contamination beneath the Manufacturing Building so that remedial measures can be targeted to address potential vapor intrusion issues. EPA summary of next portion of the comment: NGSC proposes revisions to the SB in two Sections, requesting that EPA require Unisys to install and operate a VCS in the Manufacturing Building and any building subsequently constructed on the Facility, unless it is demonstrated to EPA by Unisys that one is not necessary. Also, for Unisys to delineate soil and soil vapor beneath the Manufacturing Building.

EPA Response: See responses A and B.

D. The FDRTC should expressly require Unisys to prepare any plans required as part of the remedy: The SB proposes that a Soil Management Plan, Groundwater Monitoring Plan and VCS Operation and Maintenance Plan(s)[2] be prepared and implemented at the Properties. Because Unisys is the sole party to the FLA and is the party responsible for the contamination, the remedy should make clear that Unisys has the obligation to prepare these plans. The remedy should also state that (i) the owners of the Properties shall be provided by Unisys with a draft copy of the plans for review and comment before the plans are presented to EPA for approval, and (ii) the plans must not unreasonably burden the owner'

ability to conduct ordinary business operations on the Properties. Finally, the remedy should state that Unisys must implement the Groundwater Monitoring Plan and all VCS Operation and Maintenance Plans.

[2] Because new construction at the Properties over time could mean multiple vapor control systems must be installed, there may be multiple Operation and Maintenance Plans that must be drafted.

EPA Response: The FDRTC is a decision document in which EPA selects a final remedy for a facility, or portion thereof. EPA has statutory authority to require owners and operators to implement corrective action at a facility. EPA will exercise its authorities to require the implementation of the Final Remedy for the Properties as appropriate.

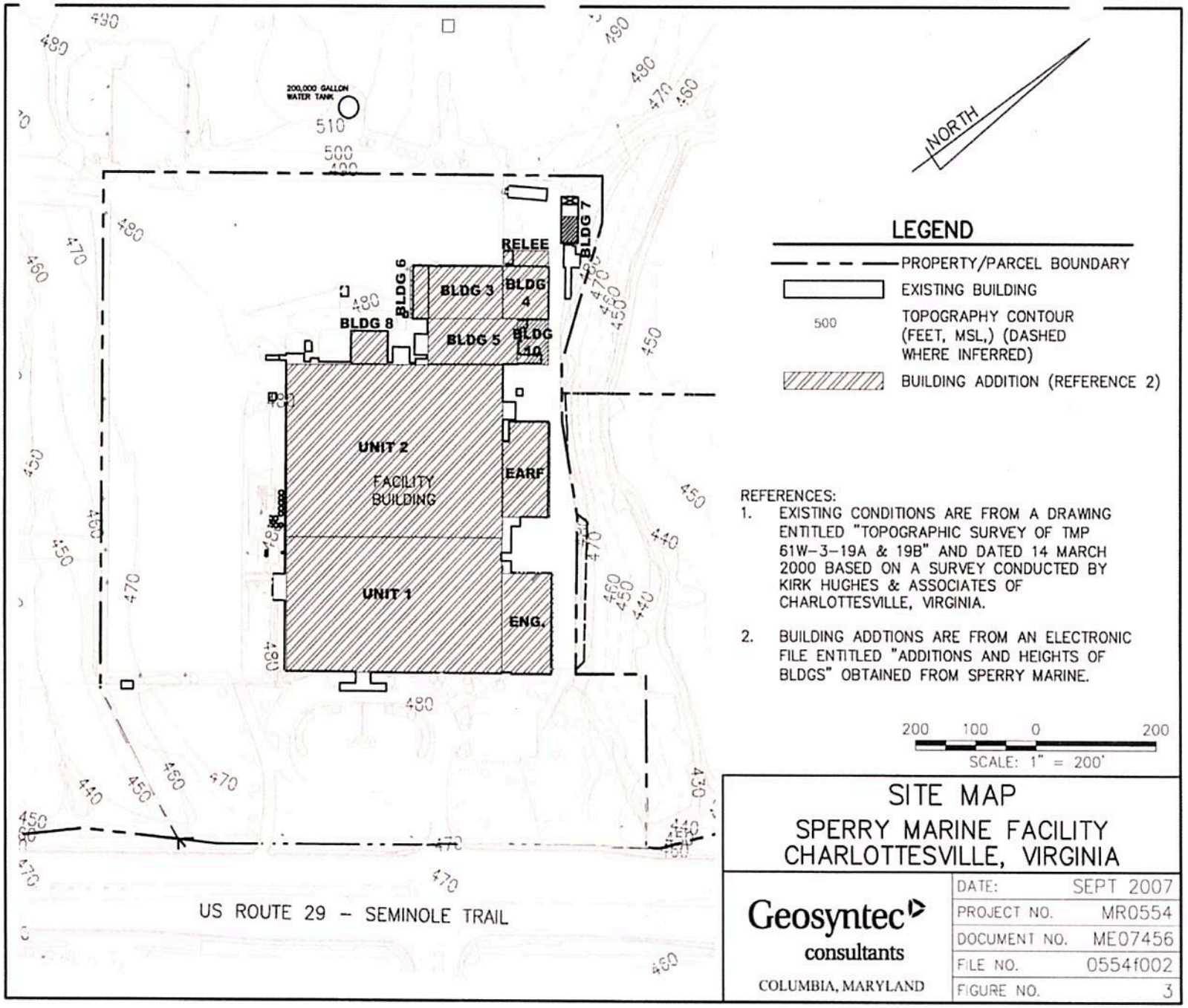
E. The FDRTC should acknowledge the presence of soil contamination beneath the Manufacturing Building as a present-day source of impacts to soil vapor and groundwater and should provide an estimated timeframe to achieve remedial goals

EPA Response: EPA acknowledges that soil and groundwater contamination remains at the Properties. The implementation of EPA's Final Remedy will mitigate any potential impacts to human health and the environment associated with that contamination. Estimated timeframes to achieve remedial goals will be included in the Corrective Measures Implementation Plan to be submitted after EPA selects the Final Remedy.

F. Some aspects of Section 2 and 3 in the SB are not accurate and should be corrected for purposes of the FDRTC (EPA summary):

EPA Response: NGSC and Unisys submitted suggested language for FDRTC for Sections 2 and 3 regarding which parties owned and operated the Properties and when and which parties took certain actions. EPA made the suggested changes by Unisys and NGSC in Sections 1, 2 and 3 of the FDRTC.

Plate 2
DRAFT
Petrex Soil Gas
Relative Tetrachloroethylene Values
(PCE)
≥ 100,000 Counts
10000 - 99,999 Counts
1,000 - 9999 Counts
< 1,000 Counts
m : missing
Building
U.S. Route 29
DRAFT
Results of Historic Petrex℠
Sampling Survey for PCE
Stantec



SITE MAP
SPERRY MARINE FACILITY
CHARLOTTESVILLE, VIRGINIA

Geosyntec consultants
COLUMBIA, MARYLAND

DATE:	SEPT 2007
PROJECT NO.	MR0554
DOCUMENT NO.	ME07456
FILE NO.	0554f002
FIGURE NO.	3