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MEMORANDUM TO SITE FILE REGARDING THE MODIFICATION OF ALTERNATIVE S-2 AS THE PREFERRED REMEDY POST-FEASIBILITY STUDY PHASE, PRE-PROPOSED PLAN AND PUBLIC COMMENT PERIOD DECISION UNITS 1-1, 1-2 AND 1-3 AT SITE 7 TANK FARM 1 OPERABLE UNIT 13 (OU 13) NS NEWPORT RI

04/05/2016

RESOLUTION CONSULTANTS

MEMORANDUM TO SITE FILE

SUBJECT: Modification of Alternative S-2 as the Preferred Remedy
Post-Feasibility Study Phase, Pre-Proposed Plan and Public Comment Period
Decision Units 1-1, 1-2, and 1-3 at Site 7 – Tank Farm 1, Operable Unit 13
Naval Station (NAVSTA) Newport, Portsmouth, Rhode Island

DATE: April 5, 2016

This memorandum documents the Navy's decision to propose a preferred remedy for Decision Units (DU) 1-1, 1-2, and 1-3 at Site 7 – Tank Farm 1 (OU13) that includes a modification from the alternative that was evaluated in the Final Feasibility Study (FS) Report (Resolution, 2015). Specifically, the Navy will propose Soil Alternative S-2: Limited Soil Excavation with Land Use Controls as its preferred action, with the modification that for DU 1-2 and 1-3, soil removal will be conducted to address soil exceeding Ecological and Industrial preliminary remediation goals (PRGs) and land use controls (LUCs) will address remaining soil that exceeds the Residential PRG. This approach is consistent with the current and planned future use of the Tank Farm 1 site, which does not include residential and other unrestricted uses. The preferred action for DU 1-1 is unchanged from what was presented in the FS Report.

DU 1-2 and 1-3 are defined as surface soil impacts associated with Transformer Vaults 2 and 3 (TV2 and TV3), respectively, at Tank Farm 1. In both areas, the presence of polychlorinated biphenyls (PCBs) in surface soil adjacent to the vault structures is attributed to former releases of PCB-containing oils. In the FS Report, PRGs were identified for PCBs in surface soil at DU 1-2 and 1-3 and included a Residential PRG of 1 mg/kg, an Ecological PRG of 3.4 mg/kg, and an Industrial PRG of 10 mg/kg.

Alternative S-2, as presented in the FS Report, included soil removal at DU 1-2 and 1-3 to remove surface soil to achieve the lowest PRG (the Residential PRG of 1 mg/kg for PCBs). The modification that will be presented in the Proposed Plan as the preferred remedy will include soil removal at DU 1-2 and 1-3 to remove surface soil to achieve the lower of the Industrial and Ecological PRGs (3.4 mg/kg PCBs). Additionally, Alternative S-2 included LUCs for the TV2 and TV3 footprints to prevent access to soil beneath the structures, which has not been assessed. While this component has not changed, LUCs will also be needed for DU 1-2 and 1-3 to prevent residential and other unrestricted use to address any soil that will remain around the structures in excess of the Residential PRG of 1 mg/kg for PCBs. The components of Alternative S-2 that address soil at DU 1-1 will remain unchanged.

Overall, the preferred remedy that the Navy will propose would achieve remedial action objectives (RAOs) through the following components:

- Limited soil excavation and off-site disposal would remove surface soils exceeding Industrial PRGs (including RIDEM GA Leachability Criteria) for DU 1-1 and Ecological and Industrial PRGs (including RIDEM GA Leachability Criteria) for DU 1-2 and 1-3.
- Land use controls would be established to prevent residential and other unrestricted use to address soil that would remain above Residential PRGs at DU 1-1, 1-2, and 1-3.
- For DU 1-1, because there is only a thin layer of soil overlying bedrock, it is likely that little to no soil is present below the Ethyl Blending Plan (EBP) foundation. However, as a conservative measure, land use controls would also be required for the EBP structure footprint to prevent access to soil, if it exists, below the building. If the EBP is demolished in the future, the presence or absence of soil beneath the building would be assessed and if soil is present, it would be remediated, if necessary, to meet Industrial PRGs.
- For DU 1-2 and 1-3, land use controls would be required for the TV2 and TV3 structure footprints to prevent access to soil below the buildings, since it has not been assessed. If and when TV2 and/or TV3 are demolished in the future, the demolition will meet Toxic Substances Control Act (TSCA) protectiveness standards so as not to create a threat of release to the environment. If TV2 and/or TV3 are demolished, soil beneath the buildings would be remediated to meet the Ecological and Industrial PRGs for PCBs.

A pre-design investigation (PDI) is planned to further refine the areas and volumes of surface soil requiring excavation and off-site disposal as well as the LUCs areas.

The soil quantities and remediation costs for the preferred remedy do not differ substantially from the estimated quantities and costs for Alternative S-2, as presented in the FS Report. The following table presents the estimated volumes of soil for excavation and off-site disposal, LUC areas, and costs that were estimated in the FS Report alongside the corresponding estimates for the preferred remedy. The cost estimate backup for the preferred remedy is attached, along with figures providing the basis for the modified quantities.

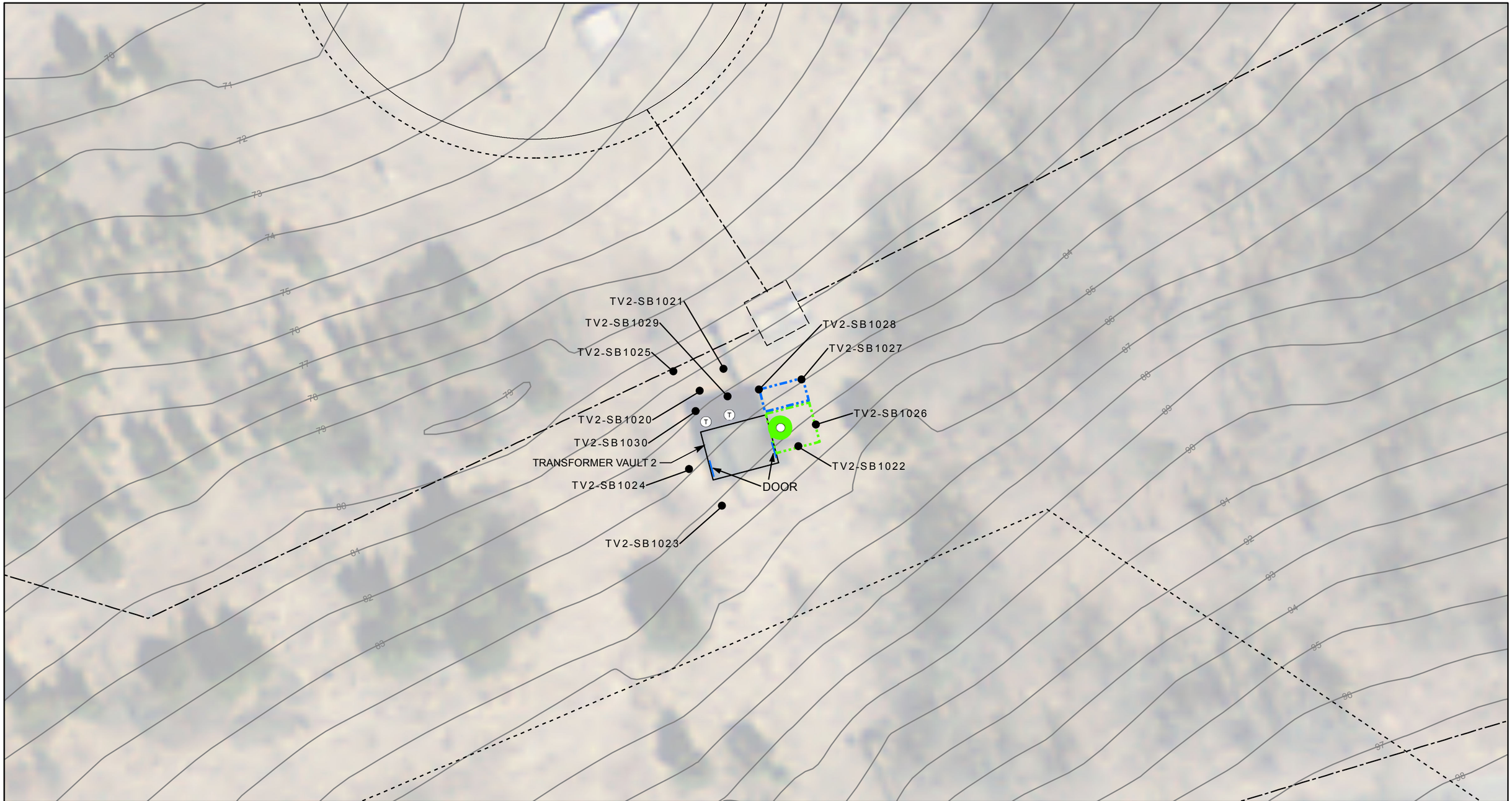
	Alternative S-2	Preferred Remedy (Modified Alternative S-2)
Volume of Soil for Excavation and Off-Site Disposal at DU 1-2 and 1-3 (cubic yards)	20	17
Overall Volume of Soil for Excavation and Off-Site Disposal (all three DUs) (cubic yards)	150	147
LUC Areas at DU 1-2 and 1-3 (square feet)	310 (structure footprints only)	460
Capital Cost	$163,414	$162,521
O&M Cost	$51,514	$51,514
Five-Year Review Cost	$23,307	$23,307
Total Present Value Cost[1]	$238,000	$237,000

1. Total cost over duration of alternative in today's $, rounded to the nearest $1,000; assumed duration 30 years
2. Note that costs are not included for potential assessment and remediation of the soil beneath the EBP, TV2, and TV3 structures. If remediation is required, it is assumed the cost will be within

the acceptable NCP cost range. Costs for demolition/disposal of the structures are not included because demolition is not part of the remedial alternative.

The Navy has concluded that the preferred remedy (Modified Alternative S-2) is protective of human health and the environment and achieves the overall RAOs established for the site.

Attachments



RESOLUTION CONSULTANTS

Drawn:	JB	03/02/2016
Approved:	NO	03/02/2016
Project #:	60266436	

Legend

- Monitoring Well Location
- 2012-2013 Soil Boring
- 2010 Site Investigation Soil Sample
- Industrial and Ecological PRG Exceedance

PRG = Preliminary Remediation Goal

- Estimated Area to be Excavated under the Selected Remedy
- Estimated Areas to require Land Use Controls preventing Residential Use under the Selected Remedy
- (T) Transformer
- Petroleum Distribution (Remaining)
- Ring Drain/BSW Drainage (Remaining)

Note
Land Use Controls are required for the Transformer Vault Structure.

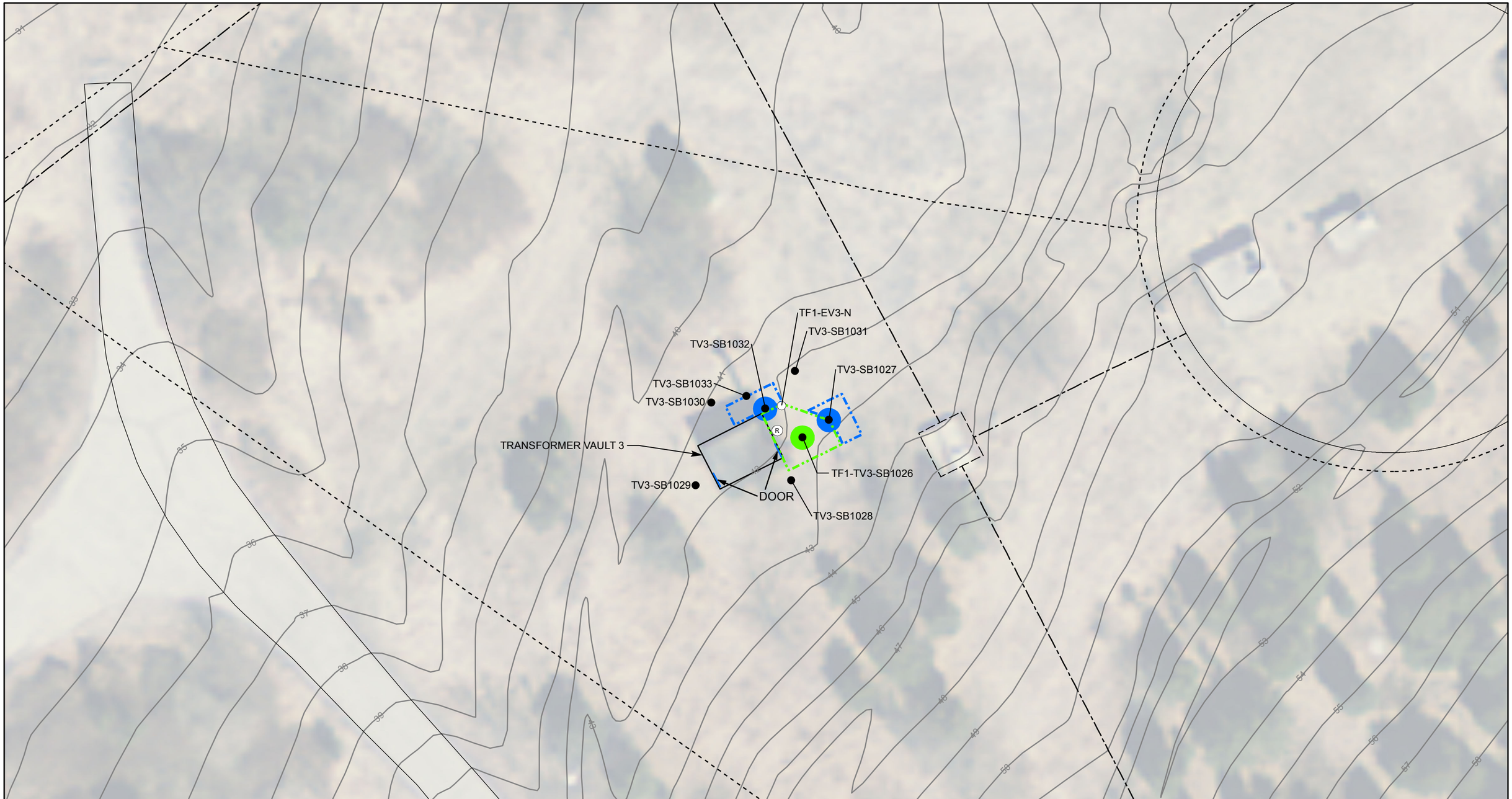
N

0 10 20

Scale in Feet

FIGURE 1
PREFERRED SOIL REMEDY
DECISION UNIT 1-2 RECORD OF DECISION TANK FARM 1 - SITE 7 DECISION UNITS 1-1, 1-2, 1-3
NAVSTA NEWPORT, RHODE ISLAND

Document Path: P:\Govt\Projects\NavyCLEAN AECOM-EnSafe JV\Newport\GIS\Projects\Tank_Farm_1\ROD\MXD\Fig_4_Selected_Soil_Remedy_DU_1_2.mxd



RESOLUTION CONSULTANTS

Drawn:	JB	03/02/2016
Approved:	NO	03/02/2016
Project #:	60266436	

Legend

- 2010 Site Investigation Soil Sample
- 2012-2013 Soil Boring
- Rectifier
- Residential PRG Exceedance

PRG = Preliminary Remediation Goal

- Industrial and Ecological PRG Exceedance
- Estimated Area to be Excavated under the Selected Remedy
- Estimated Areas to require Land Use Controls* preventing Residential Use under the Selected Remedy
- Petroleum Distribution (Remaining)
- Ring Drain/BSW Drainage (Remaining)

*Note
Land Use Controls are also required for the Transformer Vault Structure.

N

0 10 20

Scale in Feet

FIGURE 2
PREFERRED SOIL REMEDY FOR DECISION UNIT 1-3
RECORD OF DECISION
SITE 7 - TANK FARM 1
DECISION UNITS 1-1, 1-2, 1-3
NAVSTA NEWPORT, RHODE ISLAND

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Planning Cost Estimate Summary

Alternative: Modified S-2 Limited Soil Excavation with Land Use Controls

Site: DU 1-1, 1-2, & 1-3 at Tank Farm 1 - Site 7, NAVSTA Newport
Location: Portsmouth, Rhode Island
Phase: FS
Date: February 2016

Description: This alternative consists of limited surface soil excavation at DU 1-1 to meet Industrial PRGs (including GA Leachability Criteria, limited surface soil excavation at DU 1-2 and 1-3 to meet Ecological and Industrial PRGs (including GA Leachability Criteria), land use controls and annual site inspections, and five-year reviews.

CAPITAL COSTS

Description		QTY	UNIT	UNIT COST	Total	Notes
Land Use Control Remedial Design (LUC RD)						
Prepare LUC RD (4 iterations)		1	LS	$10,000	$10,000	Estimated
					$10,000	
Delineation Soil Sampling						
HASP		1	LS	$2,500	$2,500	
Work Plan/UFP SAP		1	LS	$10,000	$10,000	
Direct push drill rig and operator		2	day	$2,000	$4,000	Assumes 24 0-2 foot depth soil borings
Labor to record and collect samples		4	person-days	$1,500	$6,000	Assume 12-hr field day
Laboratory analyses:						
	PAHs	18	EA	$120	$2,160	See Backup for sampling and analysis
	Arsenic	3	EA	$20	$60	assumptions. Quantities include field
	Manganese	7	EA	$20	$140	duplicates.
	Total Chromium	4	EA	$20	$80	
	Hexavalent Chromium	4	EA	$65	$260	
	pH, ORP, ferrous iron, react. Sulfide	4	EA	$90	$360	
	PCBs	10	EA	$60	$600	
Travel		4	person-days	$200	$800	
Field supplies and equipment		1	EA	$1,500	$1,500	Allowance
Data Validation		20	HR	$100	$2,000	Allowance
Surveying		1	LS	$2,000	$2,000	Sample locations, contours, surface features
Tech Memo (2 iterations)		60	HR	$100	$6,000	Allowance
					$38,460	
Site Preparation and Management						
RA Contractor Work Plan		1	LS	$2,500	$2,500	
HASP		1	LS	$1,500	$1,500	
Equipment mobilization		1	LS	$1,500	$1,500	
Temporary facilities		1	LS	$500	$500	
Erosion control measures		400	LF	$4	$1,600	
Clearing and grubbing		2020	SF	$1	$2,020	
					$9,620	
Excavation						
Excavate soil		147	CY	$15	$2,205	Based on 2 foot depth and areas shown on Figures 3-5
Dust control and air monitoring		1	LS	$500	$500	
Regrade excavation footprint		2020	SF	$1	$2,020	
Seeding		2020	SF	$5	$10,100	
					$14,825	
Soil Disposal						
Waste Characterization		1	EA	$830	$830	Estimate for VOCs, SVOCs, PCBs, pesticides, TPH, metals; 1 per 500 CY
T&D non-haz soil		220.5	Ton	$75	$16,538	
					$17,368	
Post-Construction						
Contractor Completion Report		75	HR	$100	$7,500	
Remedial Action Completion Report		100	HR	$100	$10,000	
(2 iterations)					$17,500	
SUBTOTAL					$107,773	
Contingency	30%				$32,332	Scope (15%)+ Bid(15%)
SUBTOTAL					$140,104	
Project Management	6%				$8,406.26	
Remedial Design	4%				$5,604.17	
Construction Management	6%				$8,406.26	
TOTAL CAPITAL COSTS					$162,521	

Planning Cost Estimate Summary

Alternative: Modified S-2 Limited Soil Excavation with Land Use Controls

O&M COSTS

Description		QTY	UNIT	UNIT COST	Total	Notes
Annual LUC Site inspections (through year 30)		1	each	$1,950	$1,950	Estimated; See attached worksheet
SUBTOTAL					$1,950	
Contingency	0%				$0	
Project Management	10%				$195	
TOTAL O&M ANNUAL COSTS					$2,145	

PERIODIC COSTS

Description	QTY	UNIT	UNIT COST	Total	Notes
Five Year Review (through year 30)	6	each	$5,000	$30,000	Assume one component of base-wide 5-yr review
SUBTOTAL				$30,000	
TOTAL PERIODIC ANNUAL COSTS				$5,000	

PRESENT VALUE ANALYSIS

Cost Type	Year	Total Cost	Total Cost per Year	Discount Factor at 1.5%	Present Value	Notes
Capital Cost	0	$162,521	$162,521	1	$162,521	Discount rate of 1.5% is based on the
O&M Cost	1 to 30	$64,350	$2,145	24.0158	$51,514	30-Year Real Interest Rate in Appendix C
Periodic Cost	5	$5,000	$5,000	0.9283	$4,642	of the White House Office of Management
	10	$5,000	$5,000	0.8617	$4,309	and Budget (OMB) Circular A-94, Revised
	15	$5,000	$5,000	0.7999	$4,000	December 2014.
	20	$5,000	$5,000	0.7425	$3,713	
	25	$5,000	$5,000	0.6892	$3,446	
	30	$5,000	$5,000	0.6398	$3,199	
Total Present Value of Alternative					$237,342	

Planning Cost Backup Worksheet

Alternative: S-2 Limited Soil Excavation with Land Use Controls and S-4 Limited Soil Excavation with Soil Cover and Land Use Controls

Site:	DU 1-1, 1-2, & 1-3 at Tank Farm 1 - Site 7, NAVSTA Newport	Prepared By: CC	Checked By: NT
Location:	Portsmouth, Rhode Island	Date: 7/9/2014	Date: 7/16/2014
Phase:	FS		
Date:	October 2015		

Assumptions:

EBP Delineation Soil Sampling (including QA/QC)
Sampling and analysis to assess whether hexavalent chromium is present above the PRG or if it should be eliminated as a COC
- Assume resampling of previous locations EBP-SB1007, EBP-SB1019, and EBP-SB1036 that had total chromium in excess of the PRG for hexavalent chromium.
- Assume analysis for total chromium, hexavalent chromium, pH, ORP, and possibly ferrous iron and reactive sulfide.

Sampling and anlysis to delineate overall extent of PAHs, manganese, and arsenic at the EBP
- Assume 3 surface soil samples east and west of EBP-SB1004 with analysis for arsenic to delineate arsenic exceedances.
- Assume 7 surface soil samples collected north of EBP-SB1020 and EBP-SB1022 with analysis for PAHs and manganese.
- Assume 11 additional surface soil samples collected to delineate horizontal extent of PAHs.

TV2 and TV3 Delineation Soil Sampling (including QA/QC)
Sampling and analysis to delineate overall extent of PCBs
- Assume 5 surface soil samples collected around TF1-EV2-E and 5 surface soil samples collected around TV3-SB1026

Work Statement:
Annual Land Use Control (LUC) Inspections and Reporting

Description	QTY	UNIT	UNIT COST	Total	Notes
Travel	1	LS	$200	$200	
Labor for Inspection	12	HR	$100	$1,200	
Report	4	HR	$100	$400	
Misc	1	LS	$100	$150	
TOTAL COST PER ANNUAL INSPECTION				$1,950	

Source of Cost Data:
Engineering Estimate

Cost Adjustment Factor:

FACTOR:		NOTES:
H&S Productivity (labor & equip)		Level D
Escalation to Base Year		
Area Cost Factor		
Subcontractor Overhead & Prof.		
Prime Contractor Overhead & Prof.		