

OUTLINE SCOPE OF WORK
SITE SUITABILITY ASSESSMENT
NAVSTA NORFOLK BRIG EXPANSION
P-977

PURPOSE: The purpose of this effort is to conduct examination, sampling, testing, borings, establish monitoring wells, and perform remote sensing to evaluate conditions and assess site suitability at existing brig facility and the proposed brig expansion facilities (P-977) at the Naval Station Norfolk.

APPROACH: The approach to be taken in this assessment may include:

- Soil Boring and Logging;
- Gas/Vapor Testing;
- Well Construction;
- Ground Water Sampling and Testing;
- Remote Sensing (e.g., ground penetrating radar, magnetic survey, etc.)
- Data Analysis; and
- Engineering recommendation and costs for soil excavating, gas collection tranches/barriers, etc.

The contractor will conduct soil borings with continuous split spoon sampling to 25 foot depth below ground surface at nine locations around the project site. Additionally, 11 ground water monitoring wells to 25 feet with logging and continuous sampling will be constructed at locations indicated on Attachment A.

Gas sampling and testing at the time of borehole and well construction will include:

Combustible Gas
Oxygen
Hydrogen Sulfide
Methane
Volatile Organics from the Priority Pollutant List

Ground water test parameters include the entire Priority Pollutant List.

Ground water levels will be accurately measured to plot ground water flow across/along the site.

The remote sensing survey will address conditions at approximately 15 acres of the estimated 21 acre total site. The survey must be sufficiently sensitive to locate buried materials (drums, cylinders, tanks, etc.) to at least five feet below ground water.

Well construction and boring logs will conform to techniques and procedures for the Sewells Point Naval Complex NACIP Program Confirmation Study.

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Any contaminants encountered will be compared against any Standards, SNARLS, guidelines, recommendations, etc., for health and safety significance. For contaminants found for which adverse health/safety condition is projected by the contractor, the contractor will develop alternatives to reduce contamination below adverse levels, evaluate feasibility and effectiveness, and prepare project cost estimates and design guidelines suitable for ultimate project implementation/design. All efforts will be documented in draft and final reports which will include recommendations for or against site suitability.

NDN - 0001-0100 07/70

Cost Estimate
Site Suitability Assessment
NAVSTA NORFOLK Brig Expansion
P-977

Drilling

Mobilization/Demobilization	\$ 800
Decontamination Facility	3,000
11 25' wells, min 3.5" borehole, continous split spoon sampling, well installation, well head construction, purging and development, decontamination, @ \$700 each	7,700
9 25' Soil Borings, continous split spoon sampling, decontamination @ \$6/L.F.	1,350
Subtotal	<u>\$12,850</u>
Geologist on-site 12 days \$15/hr 8 x 12 x 2.25 =	\$ 3,240
Geologist - Boring Log Prep \$15/hr x 8x 5 days x 2.25 =	1,350
Safety Clothing and Materials Requirements	<u>2,000</u>
Subtotal	<u>\$ 6,590</u>
Total	\$19,440

Ground Water Sampling and Testing

2 days sampling (Env Specialist and tech.) \$15/hr + \$6/hr = \$21/hr 16 hrs x \$21/hr x 2.25 =	\$ 756
Priority pollutant analysis 11 water samples \$705/sample =	7,755
Subtotal	<u>\$ 8,511</u>

Remote Sensing Survey

Equipment Rental	
10 days testing (Engineer and Tech) (\$15.50 + 6.00/hr) x 80 hrs x 2.25	\$ 1,500 3,870
5 days data review \$15.50 x 40 x 2.25	1,395
Subtotal	<u>\$ 6,765</u>

Gas Sampling and Testing, 20 Holes

Environment scientist @ \$15/hr	
12 days x 8 hrs/day x \$15/hr x 2.25	\$ 3,240
Equipment Rental @ \$50/day x 12 days	600
Subtotal	<u>\$ 3,840</u>

Data Review, Evaluation, Assessment, and Report

Project Director	40 hrs @ \$35/hr
Project Manager	80 hrs @ \$25/hr
Engineering	160 hrs @ \$15.50/hr
Environmental Scientists	160 hrs @ \$15/hr
Safety/Medical Toxicologist	60 hrs @ \$40/hr
Support	160 hrs @ \$7/hr

[(40 x \$35) + (80 x 25) + (160 x \$15.50) + (160 x \$15) +
(60 x \$40) + (160 x \$7)] x 2.25 = Subtotal \$26,550

Gas Sampling Analysis

20 Samples, Volatile Organics and Methane,
\$250/sample = \$ 5,000

TASK TOTALS

Drilling	\$19,440
Ground Water	8,511
Remote Sensing	6,765
Gas Sampling	3,840
Data Review & Report	26,550
Gas Sampling Analysis	5,000
	<u>\$70,106</u>
Profit 10%	7,011
Grand Total	<u>\$77,117</u>