

NAS PENSACOLA  
CATEGORY VI- SITE 15  
PHASE II  
SAMPLING AND ANALYSIS PLAN ADDENDUM

Additional field activities are proposed to ~~perform~~ Phase II of the Site 15 remedial investigation (RI). Recommendation for Phase III activities will be following ~~evaluation~~ of Phase II results. The purpose of Phase II is ~~to~~ delineate the extent of inorganic and organic parameters detected in site ~~soil~~ and groundwater (inorganics only) during Phase I. ~~Proposed Phase II~~ activities include the completion of additional ~~soil borings~~ and temporary wells, associated ~~soil~~ and groundwater sampling, and sample analyses using DQO level III ~~laboratory~~ methods. ~~Proposed~~ sample locations, investigation methodologies, and analytical methods are presented below.

#### Sample Locations

As shown on the attached Figure 1, 18 Phase II soil borings (locations 10 through 27) are proposed along the site's border to determine the outermost aerial extent of elevated parameter concentrations detected across the site's central portion during Phase I.

This Phase II approach is intended to provide a worst-case scenario for feasibility study ~~soil~~ remediation volume considerations. The reason for placing borings significantly "outboard" is to assure maximum probability of obtaining unimpacted soil. Sufficient information will be available from assessment of the site's interior to determine if soil remediation is necessary (based on completion of a baseline ~~risk~~ assessment and leachability analysis). Given the outer ~~boring~~ analytical ~~data~~, calculation of impacted soil volume for potential removal can follow a conservative approach, with later refinement and adjustment based on confirmation sampling during the remedial action phase.

Additionally, borings are proposed across the site's central portion (locations 28 through 34) to fill in aerial ~~data~~ gaps in the center of the site should "hot spot" remediation become a viable remedial alternative.

Six temporary wells (locations 1 through **6**) are recommended to evaluate shallow groundwater quality in areas downgradient of elevated inorganic parameters (arsenic, manganese, iron, and aluminum) detected during **Phase I**. Additionally, in areas where **Phase I PRG exceedences** were the greatest, **two** temporary intermediate depth wells (locations **8** and **9**) are recommended to evaluate the lower portion of the surficial aquifer. One temporary shallow well (location **7**) is also recommended to define upgradient groundwater **quality** flowing onto Site 15. **The** nine recommended **Phase II** well locations are shown on Figure 1.

### Investigation Methodology

Borings for collecting **soil** samples will be completed with stainless-steel hand augers (as performed during Phase I) in accordance with Section **4.4** of the **CSAP**. With the exception of locations 22, 23, and 24, recommended soil sample intervals for determining the vertical extent of potential contamination are as follows: 0-1 foot bls and the two foot interval immediately above the water table, Only the surficial 0-1 foot bls interval will be sampled at locations 22 through 24.

Temporary monitoring wells will be installed using hollow-stem-auger drilling techniques (as performed during Phase I) in accordance with Section **5.3.3** of the **CSAP**. Temporary wells will be constructed of 2-inch diameter Schedule 40 **PVC** with 0.01-inch factory slotted **PVC** well screens 5-feet in length. Temporary wells will be constructed in the same manner as permanent wells except no grout collar, protective casing, or well pad will be installed. Intermediate depth temporary wells will have standard (generally 20-40 sieve size silica sand) Nter **packs** extending a minimum of **two** feet above the well screen topped with an additional two feet interval of fine grained "sugar sand", followed by a gelatinous bentonite slurry and bentonite seal cap at land surface to fill the remaining boring annular space.

Temporary wells will be developed with either a centrifugal or peristaltic pump until measured groundwater field parameters (temperature, pH, and specific conductivity) and turbidity have stabilized as specified in Section 5.4 of the **CSAP**. Because temporary wells will not be grouted

into place, well development may be performed immediately after well installation and followed by sample collection.

Groundwater samples will be collected in accordance with Section 6.1 and 6.3 of the CSAP using low-flow "quiescent" sampling techniques with a peristaltic pump, and dedicated teflon tubing and glass transfer bottle.

### Analytical Methods

Analytical methods are chosen to target parameters for which detected concentrations exceeded PRGs during Phase I.

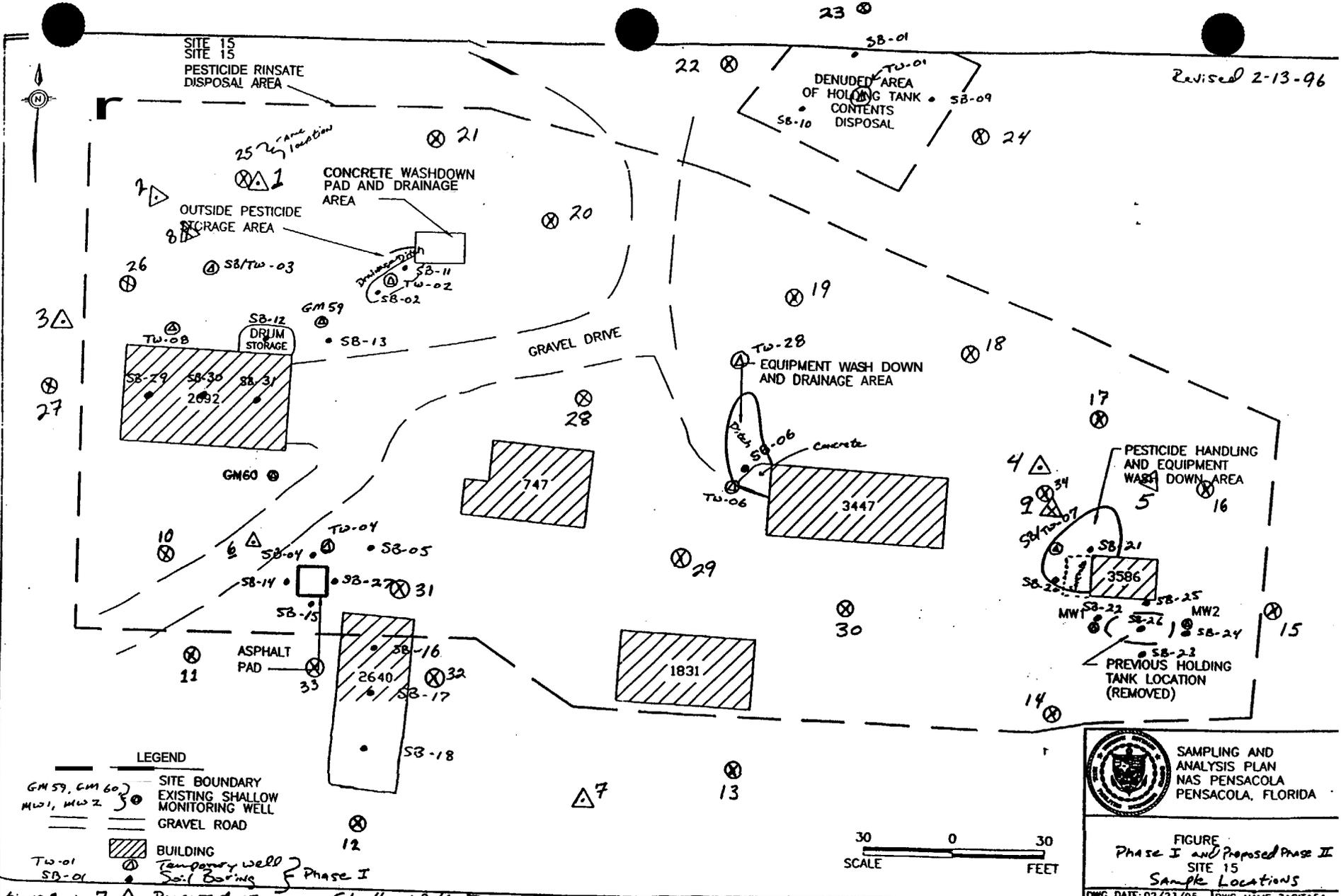
soil

Due to the widespread detection of elevated inorganics (arsenic and manganese) and dieldrin during Phase I, arsenic, manganese and pesticide analyses are proposed for all Phase II soil samples using SW-846 methods 7060, 6010, and 8080, respectively. BNA parameter analysis using SW-846 method 8270 is proposed for soil samples from borings 14 through 17, due to the detection of several elevated BNA compound concentrations at Phase I boring location 21. Additionally, VOC analysis using SW-846 Method 8240 is proposed for samples from borings 31, 32, and 33, due to the detection of several elevated VOC concentrations at Phase I boring location 27.

### Groundwater

Analysis for the elevated inorganic parameters detected during Phase I (aluminum, arsenic, iron, and manganese) is proposed for samples collected from the new Phase II temporary wells. These analyses will be performed using SW-846 methods 6010 (aluminum, iron, and manganese) and 7060 (arsenic). Additionally, a repeat sampling of Phase I well 015GR07, and samples from Phase II wells 4, 5, and 9, are recommended for BNA analysis using SW-846 Method 8270 due to the detection of BNA PRG exceedences in this area.

Revised 2-13-96



LEGEND

GM 59, GM 60 } SITE BOUNDARY  
 MW 1, MW 2 } EXISTING SHALLOW MONITORING WELL  
 --- GRAVEL ROAD

▨ BUILDING

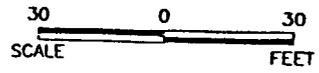
○ Temporary well } Phase I  
 ● Soil Borings

Locations: 1-7 △ Proposed Temporary Shallow Wells } Phase II  
 8-9 △ Proposed Temp. Intermediate Wells }  
 10-34 ⊗ Proposed Soil Borings



SAMPLING AND ANALYSIS PLAN  
 NAS PENSACOLA  
 PENSACOLA, FLORIDA

FIGURE  
 Phase I and Proposed Phase II  
 SITE 15  
 Sample Locations



DWG DATE: 02/23/95 DWG NAME: 71SIT15A