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NAS PENSACOLA

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ENSAFE INC.

ENVIRONMENTAL AND MANAGEMENT CONSULTANTS

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December 18, 2002

Naval Air Station Pensacola Tier 1 Team  
Distribution

RE: OU2 Resampling Memorandum

Dear Tier 1 Team Member:

Please find attached the Resampling Memorandum for OU2. Also included are the well resampling matrix and the keyed figure at plate scale.

Please review these submittals in preparation for a brief discussion at our next meeting, currently scheduled for January 14 and 15, in Charleston SC. It is my hope that we initiate this resampling as soon as possible.

As always, please contact me should you have any questions or comments.

Sincerely,

Brian Caldwell, PG

Attachment



1 – All wells which exhibited an exceedance of a screening value during either of the first two sampling rounds was selected to be sampled and analyzed for that parameter group containing the exceedance (parameters were grouped into volatile organic compounds [VOCs], semivolatile organic compounds [SVOCs], pesticide/PCBs, and metals). This was done to assess the temporal change in "source wells".

2 – Wells which were downgradient of the wells cited in Criteria 1, and were immediately adjacent to a receiving wetland, were slated to be sampled and analyzed for the same parameter group as those in Criteria 1. This was done to assess the potential migration from source wells to discharge points within the wetlands.

Following this initial cut, the subcommittee added/deleted wells to be sampled, based on redundancy and assessment data gaps. This was accomplished through an extensive evaluation of the data as presented in plan view maps per site and per parameter group.

This information was presented to the Tier 1 team in a November meeting in Pensacola, and approvals for the well selections were made.

Prior to the November Tier 1 meeting in Pensacola, a site recon was conducted to ascertain if all of the selected wells remained on the site and were accessible for sampling. A number of wells selected for resampling were either not located or determined to be missing. Alternatives to these wells were evaluated by the Team. Table 1 presents the results of those evaluations:

<b>Original Monitoring Wells and Identified Alternatives</b>	
<b>Well(s)</b>	<b>Alternative</b>
12GS08, 12GS09	Locations to be further reconned
11GI15	Well is likely present but obscured by vegetatio location to be further reconned
30GS156	A nearby UST well will be sampled instead
30GS166	Sample 30GS162 instead
30GS171, 30GS172, 30GS173	Area is inside a secured fence; locations need to further reconned
25GS04	A new well will be installed and sampled
27GS13	Sample 27GS17 instead
30GS26	Sample 30GS27 instead; add monitored natura attenuation (MNA) parameters to analytical list

30GS29	A new well will be installed and sampled
30GS12	Sample 30GS11 instead

### Final Results

Table 2 presents a matrix of the wells to be resampled, organized by site and by parameter group. For future reference, this table includes all wells which exhibited an exceedance during the RI, but only those shown with an "x" in a parameter group are selected to be resampled. Additionally, Figure 1 presents a color coded map showing the locations of the selected resampling wells and the parameter groups to be analyzed at each well. In total, there are 39 samples to be analyzed for metals; 52 samples to be analyzed for VOCs; 26 samples to be analyzed for SVOCs, and 2 samples to be analyzed for pesticides/PCBs. By site, there are 18 wells on Site 11 to be resampled; seven wells on Site 12; 15 on Sites 25/27; and 34 wells on Site 30.

In addition to these, the team approved the following:

- 1 – Installation of a new well on Site 11 downgradient of trench LF-2; analysis of a sample from this well for SVOCs;
- 2 – Installation of a new upgradient well on Site 12 (to be located inside the DRMO area), to be analyzed for VOCs;
- 3 – Collection of a composite surface soil near trench LF-5 on Site 11, and analysis of this sample for metals. Sample to be a composite of discrete samples collected at a center point surrounded by four points spaced at radial distances of 15 feet from the center point.
- 4 – Analysis (field and lab) of monitored natural attenuation parameters at a number of wells across the OU, situated to be, at a minimum, upgradient of "source" areas, within "source" areas and downgradient of "source" areas. These parameters are to consist of: dissolved oxygen, nitrate/nitrogen, ferrous/ferric iron, sulfate/sulfide, methane, alkalinity, oxidation-reduction potential, and dissolved hydrogen. In addition to these parameters, all MNA-designated wells will be analyzed for metals.

### Sampling Methodology

All samples will be collected in accordance with the Comprehensive Sampling and Analysis Plan for NASP. This consists of low-flow purging and sampling, and stabilized field measurements of turbidity, pH, conductivity, and temperature.

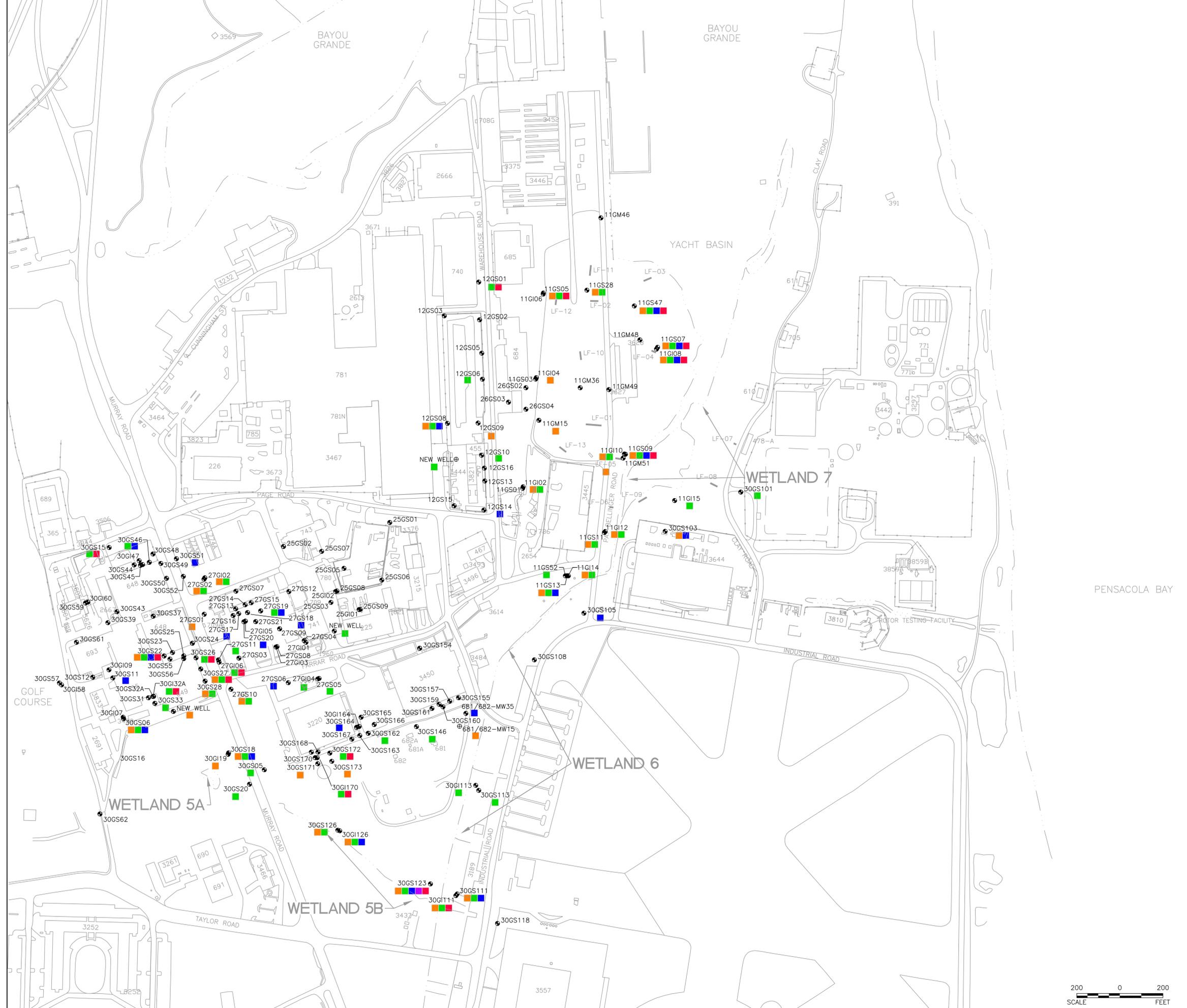
**SUMMARY MATRIX OF PROPOSED GROUNDWATER RESAMPLING  
OPERABLE UNIT 2, NAS PENSACOLA**

\* = denotes changes due to recon

Site 11	METALS	VOCs	SVOCs	PEST/PCBs	MNA
011GGI5101					
011GGS1501	x				
011GGS2801	x	x			
011GGS3601					
011GGS4601					
011GGS4701	x	x	x		x
011GGS4801					
011GGS4901					
011GGS5201		x			
011GI00201	x	x			
011GI00401	x				
011GI00601					
011GI00801	x	x	x		x
011GI01001	x	x			
011GI01201	x	x			
011GI01401	x	x			
011GI01501*		x			
* Slated for further recon					
011GLF0100					
011GLF1000					
011GLF1100					
011GLF1200					
011GLF1300					
011GS00101	x				
011GS00301					
011GS00501	x	x			x
011GS00701	x	x	x		x
011GS00901	x	x	x		
011GS01101	x	x			
011GS01301	x	x	x		
well downgradient of LF-2			x		
composite surface					
soil near LF-5					
Site 11	x				
Site 12	METALS	VOCs	SVOCs	PEST/PCBs	MNA
012GGS0101		x			x
012GGS0201					
012GGS0301					
012GGS0501					
012GGS0601		x			
012GGS0801*	x	x		x	
* Slated for further recon					
012GGS0901*	x				
* Slated for further recon					
012GGS1001		x			
012GGS1301					
012GGS1401			x		
012GGS1501					
012GGS1601					
012W000101					
new upgradient well		x			
Sites 25/27	METALS	VOCs	SVOCs	PEST/PCBs	MNA
025GI00101					
025GI00201					
025GS00100	x				
025GS00200					
025GS00300					

025GS00400*					
* Replace with new well					
025GS00500					
025GS00600					
025GS00700					
025GS00800					
025GS00900					
027GSD5401					
027GGS0201					
027GI00101					
027GI00201	x	x			
027GI00301					
027GI00401			x		
027GI00501					
027GI00601			x		x
027GS00101	x				
027GS00201	x	x			
027GS00301					
027GS00401			x		
027GS00501			x		
027GS00601				x	
027GS00701					
027GS00801					
027GS00801					
027GS00901					
027GS01001	x	x			
027GS01101		x			
027GS01301*				x	
* Replace with 27GS17					
027GS01501					
027GS01601					
027GS01801				x	
027GS01901		x		x	
027GS02001				x	
027GS02101					
<b>Site 26</b>	<b>METALS</b>	<b>VOCs</b>	<b>SVOCs</b>	<b>PEST/PCBs</b>	<b>MNA</b>
011GGS1502					
026GGS0201					
026GGS0301					
026GGS0401					
<b>Site 30</b>	<b>METALS</b>	<b>VOCs</b>	<b>SVOCs</b>	<b>PEST/PCBs</b>	<b>MNA</b>
030GI00701					
030GI00901					
030GI01901	x				
030GI03201					
030GI05801					
030GI06001					
030GI11101	x	x	x		
030GI11301		x			
030GI12601	x	x	x		
030GI16401			x		
030GI17001		x			x
030GI32A01		x			x
030GS00300					
030GS00500		x			
030GS00600	x	x	x		
030GS01100					
030GS01200*				x	
* Replace with 30GS11					
030GS01500		x			x
030GS01601	x				
030GS01800	x	x	x		
030GS02000		x			

030GS02200	x	x	x		x
030GS02400					
030GS02600*		x			x
<b>* Replace with 30GS 27; add MNA</b>					
030GS02700	x	x			
030GS02800	x	x			
030GS02900*	x				
<b>* Replace with new well</b>					
030GS03300		x			
030GS04300					
030GS04400					
030GS04600		x	x		
030GS04900					
030GS05000					
030GS05100			x		
030GS05200					
030GS05600					
030GS05700					
030GS05900					
030GS06200					
030GS10101		x			
030GS10301	x		x		
030GS10501			x		
030GS10801					
030GS11101	x	x	x		
030GS11301		x			
030GS11801					
030GS12301	x	x	x	x	x
030GS12601	x	x			
030GS14601		x			
030GS15401					
030GS15601*			x		
<b>* Replace with nearby UST well</b>					
030GS15701					
030GS16001					
030GS16101					
030GS16201					
030GS16401					
030GS16501					
030GS16601*		x			
<b>* Replace with 30GS162</b>					
030GS16801					
030GS17001					
030GS17101*	x				
<b>* Slated for further recon</b>					
030GS17201*		x			x
<b>* Slated for further recon</b>					
030GS17301*	x				
<b>* Slated for further recon</b>					
UST well	x				

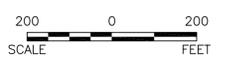
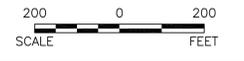


**LEGEND**

- SURFACE WATER BODY
- CLOSED LAGOON
- BUILDING
- 743
- TRENCH LOCATIONS/IDs
- FENCE LINE
- ROADS
- SIDEWALKS
- 11GS47 ● GROUNDWATER MONITORING WELL LOCATIONS/IDs

**RESAMPLING PARAMETERS LEGEND**

- Metals
- VOCs
- Semi-VOCs
- Pesticides/PCBs
- MNA



		NAS PENSACOLA OPERABLE UNIT 2	
		FIGURE 2 GROUNDWATER MONITORING WELL RESAMPLING PROPOSAL	
Dr by: K. BRONSON	Proj. Code: 0059-001		
Ck by: B. CALDWELL	App by: B. CALDWELL	Sheet 1	Of 1
Date: 10/28/02	DWG Name: 0059001R204		