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NAS PENSACOLA  
5090.3a

OCTOBER 1996 MONTHLY OPERATION AND MAINTENANCE REPORT ON THE  
DOMESTIC WASTEWATER TREATMENT PLANT GROUNDWATER REMEDIATION  
PROJECT FOR NAS PENSACOLA FL  
11/11/1996  
HRP SPECTRUM INC

November 11, 1996

Commanding Officer  
Naval Public Works Center, Code 911.3  
310 John Tower Road, Building 3819  
Naval Air Station  
Pensacola, FL 32508-6500  
Attention: Mr. Tom Kelley

**RE: OCTOBER 1996 MONTHLY OPERATION AND MAINTENANCE REPORT ON THE DOMESTIC WASTEWATER TREATMENT PLANT (DWTP) GROUNDWATER REMEDIATION NAVAL AIR STATION (NAS) PENSACOLA, FLORIDA, JOB # NAV0227.FE**

Dear Sir:

*HRP/Spectrum* is pleased to submit the October 1996 quarterly report for the operation and maintenance activities conducted on the DWTP Ground Water Treatment System for the above referenced project. The attached Table 1 contains a summary of the recovery well pumping data for the month of October 1996 and Attachment #1 contains a time series graphs of the calculated bi-weekly pump flow rates to facilitate evaluation of the performance and maintenance requirements of the recovery wells and pumps. In addition, two (2) copies of the report have been sent to Mr. Maxie Keisler with Southern Division, Naval Facilities Engineering Command and two (2) copies to Commander, Naval Air Station, Environmental Division, Attention: Mr. Bill Taylor. *HRP/Spectrum* has the following comments for the month of October, 1996:

## **RECOVERY WELL SYSTEM OPERATION STATUS**

### **RW 1, 2 & 3**

- On October 9, 1996, Pump B for RW 1, 2, & 3 was off and not in operation.
- On October 10, 1996, Pump B for RW 1, 2, & 3 was primed and restarted after the piston in the flow meter was replaced. The valve for RW 1 was closed, RW 2 was partially opened, and RW 3 was fully opened.
- On October 28, 1996, Pump B for RW 1, 2, & 3 was operating sufficiently and producing normal pressure and flow. Measurements for flow, pressure, vacuum, and well depth were collected. Valves for RW 1, 2, & 3 are currently in the same position.
- On October 29, 1996, Pump B for RW 1, 2, & 3 was shut down for RW rehabilitation. Restarting RW 1, 2, & 3 will be discussed later in this report.

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## RW 4 & 6

- On October 9, 1996, Pump B for RW 4 & 6 was operating sufficiently and producing normal pressure and flow. Measurements for flow, pressure, vacuum, and well depth were collected. The valve for RW 4 was opened and RW 6 was closed due to a leak.
- On October 10, 1996, a cracked union on RW 6 was replaced and the ball valve was opened and the pump turned on. No leaks were detected in either of the recovery wells or pumps.
- On October 28, 1996, Pump B for RW 4 & 6 was operating sufficiently with proper pressure and flow. No leaks were detected at either of the recovery wells or pumps.
- On October 29, 1996, Pump B for RW 4 & 6 was turned off and the suction pipes for both wells were removed in preparation for quarterly rehabilitation. Rehab procedures outlined in Attachment #2 were followed. The well was pumped following each cleaning procedure, with the purged water placed in 55 gallon drums for disposal by PWC.

## RW 5A

- On October 9, 1996, Pump B for RW 5A was operating sufficiently and producing normal flow. Measurements for flow, pressure, vacuum, and well depth were collected. Pump B was then switched OFF and valves CLOSED.
- On October 28, 1996, Pump B for RW 5A was off and not in operation.
- On October 29, 1996, the suction pipe to RW 5A was removed in preparation for quarterly rehabilitation. Rehab procedures outlined in Attachment #2 were followed. The well was pumped following each cleaning procedure, with the purged water placed in 55 gallon drums for disposal by PWC.

## RW 7

- On October 9, 1996, Pump B for RW 7 was operating sufficiently and producing normal pressure and flow. Measurements for flow, pressure, vacuum, and well depth were collected.
- On October 28, 1996, Pump B for RW 7 was operating sufficiently with proper pressure and flow. Measurements for flow, pressure, vacuum, and water level were collected. No leaks were detected on either the recovery well or pumps.
- On October 29, 1996, Pump B for RW 7 was taken off line in order to Rehab RW 4, 5, & 6. Restarting RW 7 will be discussed later in this report.

## **PRE-TREATMENT AIR STRIPPER**

- On October 9, 1996, the Air Stripper was operating properly. Samples were collected from the inlet and outlet points.
- On October 10, 1996, the Air Stripper unit was thoroughly cleaned using the steps listed on the attached "Cleaning Procedures" for the Air Stripper Unit provided in Attachment #2. The unit was placed back in operation and was operating properly.
- On October 29, 1996, the Air Stripper was shut down to perform well rehabilitation on RW 4, 5, & 6. Upon cleaning the RW's, the Air Stripper was restarted. While restarting the motor for the Air Stripper, the motor kicked the breaker and would not restart. This problem was directed to Maxie Keisler of the Southern Division and Tom Kelley of PWC. Both Mr. Keisler and Mr. Kelley had indicated that the air stripper was under warranty and they would consult the manufacturer for repairs. Upon departure, neither the Air Stripper nor the Recovery Wells were operating. At the time of this report, the Air Stripper has not been repaired.

## **LABORATORY RESULTS - AIR STRIPPER ANALYTICAL RESULTS**

During the first visit of each month, (i.e. August, September, October), samples were collected from the inlet and outlet ports of the Air Stripper. A copy of the laboratory results for the months of August, September, and October are provided in Attachment #3 to this report. The air stripper was found to be working effectively as all the outlet samples yielded non-detectable levels of contaminants. Specific chemicals present in the samples are provided as follows:

<b>AIR STRIPPER ANALYTICAL RESULTS</b>						
<b>NAS-PENSACOLA</b>						
<b>Chemical</b>	<b>August 1996</b>		<b>September 1996</b>		<b>October 1996</b>	
	<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>	<b>Inlet</b>	<b>Outlet</b>
Chlorobenzene (ug/l)	280	N/D	270	N/D	170	N/D
1, 2 - Dichlorobenzene (ug/l)	200	N/D	210	N/D	180	N/D
1, 3 - Dichlorobenzene (ug/l)	120	N/D	120	N/D	91	N/D
1, 4 - Dichlorobenzene (ug/l)	160	N/D	170	N/D	140	N/D
1, 1 - Dichloroethane (ug/l)	N/D	N/D	16	N/D	N/D	N/D
Benzene (ug/l)	50	N/D	40	N/D	36	N/D

\* N/D = Not detected

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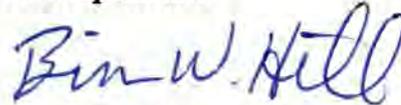
## **GROUNDWATER LEVELS**

- On October 10, 1996, the quarterly groundwater levels in all designated monitoring wells were measured. The results from these measurements are provided in Attachment #4. An electronic meter measuring device was used to measure the water level in each well.

If you have any questions regarding this report or other matters pertaining to this project please contact Tad Goetcheus or myself at (864) 298-0231.

Sincerely,

**HRP/Spectrum**



Brian W. Hill  
Project Engineer

Enclosure

cc: Maxie Keisler - NAVFALENGCOM - Code 18213 (2 copies)  
Bill Taylor - NAS Pensacola - Code 00500 (2 copies)

**ATTACHMENT #1**  
**TIME SERIES GRAPHS**

**GROUNDWATER PRETREATMENT SYSTEM  
OPERATION AND MAINTENANCE CHECKLIST  
NAS PENSACOLA, FLORIDA**

<b>INSPECTOR'S NAME</b>	BRIAN HILL / ANTHONY L. GENTRY		
<b>DATE</b>	10/9/96		
<b>AMBIENT TEMPERATURE</b>	85		
<b>WEATHER CONDITIONS</b>	SUNNY & HOT		
<b>ITEM</b>			
	<b>INSPECTION CHECK</b>	<b>DISPECTION FREQUENCY</b>	<b>DATA/ COMMENTS</b>
INFLUENT PIPING	OPERATION OF BALL CHECK VALVE	MONTHLY	OK
	SAMPLE PORT OPERATION	MONTHLY	OK
	FLOW METER READING	BI-WEEKLY	3,492,050
	SAMPLE COLLECTION	MONTHLY	N/A
AIR STRIPPER	PRESSURE GAUGE READING	BI-WEEKLY	17" WATER
	CLEAN / CHECK TRAYS	BI-WEEKLY	CLEANED
BLOWER	PIPING CONNECTIONS	MONTHLY	OK
EFFLUENT PIPING	OPERATION OF BALL CHECK VALVE	MONTHLY	OK
	SAMPLE PORT OPERATION	MONTHLY	OK
	FLOW METER READING	BI-WEEKLY	N/A
	SAMPLE COLLECTION	MONTHLY	N/A
SYSTEM COMPONENTS	EXPOSED PIPING CONNECTIONS	MONTHLY	OK
<b>SYSTEM DESCRIPTION:</b>	AIR STRIPPER OPERATING PROPERLY		
<b>ACTIVITIES PERFORMED:</b>	CLEANED TREYS FOLLOWING "CLEANING PROCEDURES FOR AIR STRIPPER"		
	ON OCTOBER 10 1996.		

**TABLE 1**  
**NAS PENSACOLA**  
**RECOVERY WELL PUMPING DATA**

PUMP STATION	DATE INSPECTED	TIME (MILITARY)	FLOW METER READING (GALLONS)	DISCHARGE PRESSURE (psig)	SUCTION VACUUM ("Hg)	INSTANTANEOUS PUMPING FLOW RATE (GPM)	CALCULATED BI-WEEKLY FLOW RATE (GPM)	PUMP IN USE (A or B)	ELAPSED TIME (HOURS)	TOTAL BI-WEEKLY FLOW (GALLONS)	WATER LEVEL BELOW TOP OF CASING (FT) (RESPECTIVELY)
RW 1,2 & 3	10/9/96	13:30	10,344,230	0	0	0	0.00	N/A	264	0	N/A, N/A, N/A
RW 4&6	10/9/96	13:40	1,083,950	6	14	8.1	11.93	B	264	188940	4.34, 5.55
RW 5A	10/9/96	13:50	4,934,440	7	11	7	10.38	B	264	164,420	2.96
RW 7	10/9/96	14:00	5,439,190	6	27	3.1	3.65	B	264	57,760	22.72
RW 1,2 & 3	10/28/96	17:15	10,535,940	10	14	6.9	7.01	A	456	191,710	N/A, N/A, 5.65
RW 4&6	10/28/96	16:50	1,304,000	11	16	8	8.04	B	456	220,050	4.22, 6.87
RW 5A	10/28/96	16:55	4,934,440	0	0	0	0.00	N/A	456	0	N/A
RW 7	10/28/96	17:00	5,518,770	10	27.5	2.7	2.91	B	456	79,580	22.8

NOTES:

- RW 1,2,3 - Recovery station for recovery wells RW 1, RW 2, and RW 3.
- RW 4,6 - Recovery well for wells RW 4 and RW 6.

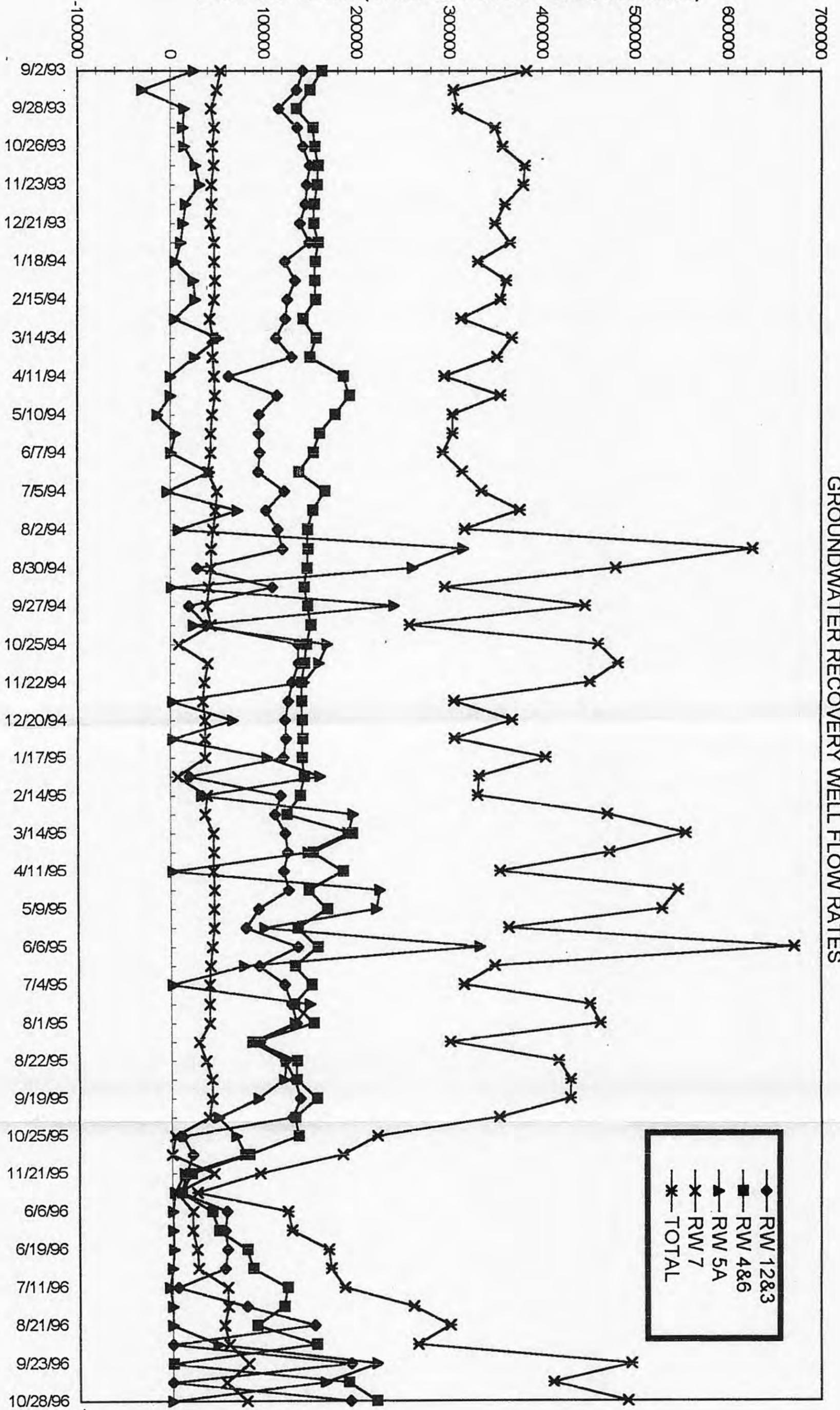
**ATTACHMENT 1  
GROUNDWATER FLOW READINGS**

<b>DATE</b>	<b>RW 12&amp;3</b>	<b>RW 4&amp;6</b>	<b>RW 5A</b>	<b>RW 7</b>	<b>TOTAL</b>
9/2/93	142110	162340	24760	53830	383040
9/16/93	135670	149590	-30700	49630	304190
9/28/93	116270	134810	14330	43120	308530
10/12/93	136130	152720	13160	46830	348840
10/26/93	142140	154940	14830	45010	356920
11/9/93	149620	158140	26400	46350	380510
11/23/93	146570	157290	31320	43950	379130
12/7/93	144880	154010	16110	44160	359160
12/21/93	139320	153600	13510	42630	349060
1/4/94	149060	158250	11050	46720	365080
1/18/94	123050	154960	5120	47100	330230
2/1/34	133870	154620	24713	47830	361033
2/15/94	125390	155560	26547	47110	354607
2/28/94	123660	142080	4750	42250	312740
3/14/34	113800	156140	51810	45330	367080
3/28/94	129980	149390	26114	45340	350824
4/11/94	62480	185229	0	46667	294376
4/26/94	114540	192381	0	47693	354614
5/10/94	95550	176590	-13904	44760	302996
5/24/94	94640	159660	5466	43110	302876
6/7/94	95650	153210	674	43420	292954
6/20/94	94086	137550	41772	40140	313548
7/5/94	122174	165870	-3652	50170	334562
7/19/94	102520	152770	71814	48230	375334
8/2/94	114960	146980	8396	46040	316376
8/16/94	120305	147250	314706	43740	626001
8/30/94	28735	146150	259724	43840	478449
9/13/94	109247	143172	1300	41266	294985
9/27/94	19933	146778	240010	38974	445695
10/11/94	38450	150690	24290	43310	256740
10/25/94	136920	145910	168195	8650	459675
11/8/94	137634	143830	159625	39953	481042
11/22/94	130526	140433	143430	36652	451041
12/6/94	126543	140687	2578	35103	304911
12/20/94	123081	141034	66629	36927	367671
1/3/95	124006	141588	2629	36814	305037
1/17/95	121155	141168	103562	37668	403553
1/31/95	20528	143045	160533	7741	331847
2/14/95	118171	139268	33440	39172	330051
2/28/95	112145	124628	195889	37053	469715
3/14/95	123141	194925	190593	45607	554266
3/28/95	125571	152781	147296	46200	471848
4/11/95	121568	184651	2015	45893	354127
4/25/95	126623	147850	224282	47128	545883
5/9/95	94185	167684	220647	46206	528722
5/23/95	80867	135931	100613	46105	363516
6/6/95	136660	157320	332514	44446	670940
6/20/95	94863	132718	78605	42396	348582
7/4/95	122115	150562	1577	40923	315177

**ATTACHMENT 1  
GROUNDWATER FLOW READINGS**

<b>DATE</b>	<b>RW 12&amp;3</b>	<b>RW 4&amp;6</b>	<b>RW 5A</b>	<b>RW 7</b>	<b>TOTAL</b>
7/18/95	128917	131634	148926	41204	450681
8/1/95	134318	152703	132928	41322	461271
8/10/95	94856	88538	87222	29445	300061
8/22/95	122086	134403	123028	37154	416671
9/5/95	131628	133923	120794	43401	429746
9/19/95	137823	155558	93131	43165	429677
10/3/95	129645	132519	50273	40028	352465
10/25/95	12024	136159	69476	3701	221360
11/8/95	22566	82653	78603	0	183822
11/21/95	15068	20731	13571	45233	94603
5/31/96	9722	10033	2577	4760	27092
6/6/96	59060	42822	439	22325	124646
6/12/96	56952	49788	460	21626	128826
6/19/96	59513	80468	1555	26465	168001
6/26/96	56512	86242	0	28001	170755
7/11/96	6264	123432	-3289	59241	185648
8/8/96	80000	120000	0	60000	260000
8/21/96	153290	90540	0	55670	299500
9/4/96	0	154470	49184	60980	264634
9/23/96	192330	0	220336	82000	494666
10/9/96	0	188940	164420	57760	411120
10/28/96	191710	220050	0	79580	491340

PUMPING FLOW (GALLONS SINCE LAST READING)



NAS PENSACOLA  
GROUNDWATER RECOVERY WELL FLOW RATES

◆ RW 1283  
 ■ RW 486  
 ▲ RW 5A  
 ✖ RW 7  
 \* TOTAL

**ATTACHMENT #2**

**RECOVERY WELL AND AIR STRIPPER  
REHAB PROCEDURES**

**REHABILITATION PROCEDURES FOR RECOVERY SYSTEMS  
RW-4, 6 AND RW-5A**

Each of these wells will first go through the same "bleach" process as RW-3 and RW-7. After the bleach solution is pumped out of the well and flushed through the discharge piping, the following activities will be performed.

- Re-install tremie pipe with "swab" attachment into recovery well.
- Inject 15 gallons of Well Klean II and muriatic acid solution (1 part Well Klean II to four (4) parts muriatic acid (31.5% HCL) through tremie pipe and swab into well.
- Inject 15 gallons of Well Klean II and muriatic acid solution into discharge piping and allow the solution to sit until well rehabilitation is complete.
- Swab well for 5 to 10 minutes at 20 minute intervals for several hours. This solution must have, at a minimum, a 12 hour contact time. (If necessary, well can sit overnight with solution in place).
- If well is allowed to sit overnight, swabbing should be performed for at least one (1) hour prior to evacuating solution from well.
- Remove tremie pipe and disconnect swab. Re-install tremie pipe and connect pipe to pump and recovery system discharge line.
- Pump excess bleach solution out of the well, flushing discharge piping.
- Disconnect and remove tremie system from well.
- Re-install suction piping and sensor probes and re-start recovery system.

**REHABILITATION PROCEDURES FOR RECOVERY SYSTEMS  
RW-1, 2, 3 AND RW-7**

- Shut down recovery system, disconnect suction piping, and remove suction piping and sensor probes from well.
- Install tremie pipe with "swab" attachment into recovery well.
- Inject 15 gallons of sodium hypochlorite (bleach - 3000 to 4000 ppm) through tremie pipe and swab into well. Bleach solution must have a contact time of at least 12 hours.
- Inject 15 gallons of bleach solution into discharge piping and allow the solution to sit until well rehabilitation is complete.
- Inject 5 gallons of water through tremie pipe and initiate swabbing of well.
- Swab well for 5 to 10 minutes at 20 minute intervals for 4 to 6 hours. (If necessary, well can sit overnight with solution in place).
- If well is allowed to sit overnight, swabbing should be performed for at least one (1) hour prior to evacuating solution from well.
- Remove tremie pipe and disconnect swab. Re-install tremie pipe and connect pipe to pump and recovery system discharge line.
- Pump excess bleach solution out of well, flushing discharge piping.
- Disconnect and remove tremie system from well.
- Re-install suction piping and sensor probes and re-start recovery system.

**Cleaning Procedures for the Air Stripper Unit, Naval Air Station,  
Groundwater Pretreatment System, Pensacola, Florida.**

1. Switch all pumps to the Off position .
2. Turn all influent valves to the Closed position .
3. Turn Off blower .
4. Take Off top of unit.
5. Using Wet/Dry vacuum, remove all water from Top shelf. All water and debris removed from Air Stripper should be drummed.
6. Drain and remove the 3" influent pipe.
7. Remove Top level and place in the sun to dry.
8. Vacuum water from next the level, remove and place in the sun to dry.
9. Repeat step #8 for all levels.
10. Once all the levels are dry, brush the trays to loosen remaining debris and vacuum again.
11. Replace levels in the order they came Off.
12. Replace influent pipe.
13. Replace top.
14. Turn on blower.
15. Open influent valves and turn On pumps.
16. Check unit for leaks and proper operation.

**ATTACHMENT #3**

**AIR STRIPPER LABORATORY RESULTS  
(AUGUST, SEPTEMBER, OCTOBER 1996)**



# Lab Report

HRP/Spectrum Sample I.D. AA54480 (continued)

Page: 2

August 14, 1996



Data for VOLATILES BY 601/602 (continued):

Component Name	Result	Component MDL
METHYLENE CHLORIDE	Not detected	50
1,1,2,2-TETRACHLOROETHANE	Not detected	10
TETRACHLOROETHENE	Not detected	10
1,1,1-TRICHLOROETHANE	Not detected	10
1,1,2-TRICHLOROETHANE	Not detected	10
TRICHLOROETHENE	Not detected	10
TRICHLOROFUOROMETHANE	Not detected	50
VINYL CHLORIDE	Not detected	50
BENZENE	50	10
ETHYLBENZENE	Not detected	10
IPE	Not detected	50
MTBE	Not detected	50
TOLUENE	Not detected	10
TOTAL XYLENES	Not detected	30

Sample comments:

Project Name: NAS- Pensacola  
PO# NAV0227.FE

If there are any questions regarding this data, please call.

A handwritten signature in black ink, appearing to read "A. Overcash", is written over the printed name.

Angela D. Overcash  
Laboratory Directory

# Lab Report



From: NC Certification No. 402  
SC Certification No. 99012  
NC Drinking Water Cert. No. 37735  
FL Certification No. E87519

August 14, 1996

To: HRP/Spectrum  
Attn: Mr. Tad A. Goetcheus  
5 Century Dr. Suite 230  
Greenville, SC 29607

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA54481                      Customer Code: HRPSPEC  
Login Group #: 7116B2                      Customer Reference: NAS PENS  
Phone Number: (803)298-0231/fax(803)242-6243  
Customer Sample I.D#: OUTLET  
Sample collection date: 08/09/96      Time: 09:00  
Lab submittal date: 08/10/96          Time: 10:45  
Received by: SAB                              Validated by: ADU

Parameter: VOLATILES BY 601/602  
Method reference: EPA 601/602              Unit: ug/L  
Result: see below  
Date started: 08/12/96                      Date finished: 08/12/96  
Time started: 20:23                          Analyst: MJB

Data for VOLATILES BY 601/602 ug/L:

Component Name	Result	Component MDL
BROMODICHLOROMETHANE	Not detected	1
BROMOFORM	Not detected	1
BROMOMETHANE	Not detected	5
CARBON TETRACHLORIDE	Not detected	1
CHLOROBENZENE	Not detected	1
CHLOROETHANE	Not detected	5
CHLOROFORM	Not detected	1
CHLOROMETHANE	Not detected	5
DIBROMOCHLOROMETHANE	Not detected	1
1,2-DICHLOROBENZENE	Not detected	1
1,3-DICHLOROBENZENE	Not detected	1
1,4-DICHLOROBENZENE	Not detected	1
DICHLOROFLUOROMETHANE	Not detected	5
1,1-DICHLOROETHANE	Not detected	1
1,2-DICHLOROETHANE	Not detected	1
1,1-DICHLOROETHENE	Not detected	1
TRANS-1,2-DICHLOROETHENE	Not detected	1
1,2-DICHLOROPROPANE	Not detected	1
CIS-1,3-DICHLOROPROPENE	Not detected	1
TRANS-1,3-DICHLOROPROPENE	Not detected	1
EDB	Not detected	1

# Lab Report

HRP/Spectrum Sample I.D. AA54481 (continued)  
Page: 2  
August 14, 1996



Data for VOLATILES BY 601/602 (continued):

Component Name	Result	Component MDL
METHYLENE CHLORIDE	Not detected	5
1, 1, 2, 2-TETRACHLOROETHANE	Not detected	1
TETRACHLOROETHENE	Not detected	1
1, 1, 1-TRICHLOROETHANE	Not detected	1
1, 1, 2-TRICHLOROETHANE	Not detected	1
TRICHLOROETHENE	Not detected	1
TRICHLOROFLUOROMETHANE	Not detected	5
VINYL CHLORIDE	Not detected	5
BENZENE	Not detected	1
ETHYLBENZENE	Not detected	1
IPE	Not detected	5
MTBE	Not detected	5
TOLUENE	Not detected	1
TOTAL XYLENES	Not detected	3

Sample comments:

Project Name: NAS- Pensacola  
PO# NAV0227.FE

If there are any questions regarding this data, please call.

A handwritten signature in black ink, appearing to read "A. Overcash", is written over the typed name.

Angela D. Overcash  
Laboratory Directory



# CHAIN OF CUSTODY RECORD

449 Springbrook Road ▲ Charlotte, NC 28217  
 P.O. Box 240543 ▲ Charlotte, NC 28224-0543  
 Phone: 704/529-6364 ▲ Fax: 704/525-0409

Full Service Analytical & Environmental Solutions

**PRESS DOWN FIRMLY - 3 COPIES**

Client ~~HRP~~ HRP/Spectrum Inc.  
 Address 5 Century Drive Suite 230  
Greenville SC 29607  
 Phone 864-298-0231

Report To Tad A. Goetcheus  
 Bill To Tad A. Goetcheus  
 P.O.#/Billing Reference NAVO227.FE  
 Project Name NAS-Pensacola

Lab Location Requested for Certified Analysis NC \_\_\_ SC \_\_\_ Other LA  
 Water Chlorinated Yes \_\_\_ No  NA \_\_\_  
 Sample Iced Upon Collection Yes  No \_\_\_  
 Requested Due Date 8/10/96

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED				REMARKS	SUB LAB CERT. ID NO.	PRISM LAB ID NO.	
				*TYPE SEE BELOW	NO.	SIZE		601	602						
INLET	8/9/96	0900	water	G	3	40ml	CHCl	X	X						511481
OUTLET	8/9/96	0900	water	G	3	40ml	cond ice	X	X						511481

Sampler's Signature Tad A. Goetcheus Sampled By (Print Name) Tad A. Goetcheus Affiliation HRP/Spectrum Tr.

Relinquished By: (Signature) <u>Tad A. Goetcheus</u>	Received By: (Signature) <u>FED EX</u>	Date	Military/Hours
Relinquished By: (Signature)	Received By: (Signature)	Date	
Relinquished By: (Signature) <u>FED EX</u>	Received For Prism Laboratories By: <u>Matt. Blue</u>	Date <u>8/10/96</u>	Military/Hours <u>1045</u>
Method of Shipment:		Date	

Additional Comments:  
7116132

NPDES: NC \_\_\_ UST: NC \_\_\_ GROUNDWATER: NC \_\_\_ DRINKING WATER: NC \_\_\_ SOLID WASTE: NC \_\_\_ OTHER: NC \_\_\_  
 SC \_\_\_ SC \_\_\_ SC \_\_\_ SC \_\_\_ SC \_\_\_ SC \_\_\_  
 OTHER \_\_\_ OTHER LA OTHER \_\_\_ OTHER \_\_\_

# Lab Report



From: NC Certification No. 402  
SC Certification No. 99012  
NC Drinking Water Cert. No. 37735  
FL Certification No. E87519

September 11, 1996

To: HRP/Spectrum  
Attn: Mr. Tad Goetcheus  
5 Century Dr. Suite 230  
Greenville, SC 29607

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA55709                      Customer Code: HRPSPEC  
Login Group #: 7605B2                    Customer Reference: NAS-PENS  
Phone Number: (803)298-0231/fax(803)242-6243  
Customer Sample I.D#: INLET  
Sample collection date: 09/04/96      Time: 14:25  
Lab submittal date: 09/05/96         Time: 10:25  
Received by: SAB                         Validated by: ADO

Parameter: VOLATILES BY 601/602                      Unit: ug/L  
Method reference: EPA 601/602  
Result: see below  
Date started: 09/06/96                      Date finished: 09/09/96  
Time started: 17:15                         Analyst: MJB

Data for VOLATILES BY 601/602 ug/L:

Component Name	Result	Component MDL
BROMODICHLOROMETHANE	Not detected	4
BROMOFORM	Not detected	4
BROMOMETHANE	Not detected	20
CARBON TETRACHLORIDE	Not detected	4
CHLOROETHANE	270	4
CHLOROFORM	Not detected	20
CHLOROMETHANE	Not detected	4
DIBROMOCHLOROMETHANE	Not detected	20
1,2-DICHLOROBENZENE	Not detected	4
1,3-DICHLOROBENZENE	210	4
1,4-DICHLOROBENZENE	120	4
DICHLOROFLUOROMETHANE	170	4
1,1-DICHLOROETHANE	Not detected	20
1,2-DICHLOROETHANE	16	4
1,1-DICHLOROETHENE	Not detected	4
TRANS-1,2-DICHLOROETHENE	Not detected	4
1,2-DICHLOROPROPANE	Not detected	4
CIS-1,3-DICHLOROPROPENE	Not detected	4
TRANS-1,3-DICHLOROPROPENE	Not detected	4
EDB	Not detected	4

# Lab Report

HRP/Spectrum Sample I.D. AA55709 (continued)  
Page: 2  
September 11, 1996



Data for VOLATILES BY 601/602 (continued):

Component Name	Result	Component MDL
METHYLENE CHLORIDE	Not detected	20
1, 1, 2, 2-TETRACHLOROETHANE	Not detected	4
TETRACHLOROETHENE	Not detected	4
1, 1, 1-TRICHLOROETHANE	Not detected	4
1, 1, 2-TRICHLOROETHANE	Not detected	4
TRICHLOROETHENE	Not detected	4
TRICHLOROFLUOROMETHANE	Not detected	20
VINYL CHLORIDE	Not detected	20
BENZENE	40	4
ETHYLBENZENE	Not detected	4
IPE	Not detected	20
MTBE	Not detected	20
TOLUENE	Not detected	4
TOTAL XYLENES	Not detected	12

Sample comments:

Project Name: NAS-Pensacola  
PO# NAV0227.FE

If there are any questions regarding this data, please call.

Angela D. Overcash  
Laboratory Directory

# Lab Report



From: NC Certification No. 402  
SC Certification No. 99012  
NC Drinking Water Cert. No. 37735  
FL Certification No. E87519

September 11, 1996

To: HRP/Spectrum  
Attn: Mr. Tad Goetcheus  
5 Century Dr. Suite 230  
Greenville, SC 29607

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA55710                      Customer Code: HRPSPEC  
Login Group #: 7605B2                    Customer Reference: NAS-PENS  
Phone Number: (803)298-0231/fax(803)242-6243  
Customer Sample I.D#: OUTLET  
Sample collection date: 09/04/96      Time: 14:25  
Lab submittal date: 09/05/96        Time: 10:25  
Received by: SAB                         Validated by: ADO

Parameter: VOLATILES BY 601/602  
Method reference: EPA 601/602                      Unit: ug/L  
Result: see below  
Date started: 09/06/96                              Date finished: 09/06/96  
Time started: 18:14                                 Analyst: MJB

Data for VOLATILES BY 601/602 ug/L:

Component Name	Result	Component MDL
BROMODICHLOROMETHANE	Not detected	1
BROMOFORM	Not detected	1
BROMOMETHANE	Not detected	5
CARBON TETRACHLORIDE	Not detected	1
CHLOROENZENE	Not detected	1
CHLOROETHANE	Not detected	5
CHLOROFORM	Not detected	1
CHLOROMETHANE	Not detected	5
DIBROMOCHLOROMETHANE	Not detected	1
1,2-DICHLOROENZENE	Not detected	1
1,3-DICHLOROENZENE	Not detected	1
1,4-DICHLOROENZENE	Not detected	1
DICHLOROFLUOROMETHANE	Not detected	5
1,1-DICHLOROETHANE	Not detected	1
1,2-DICHLOROETHANE	Not detected	1
1,1-DICHLOROETHENE	Not detected	1
TRANS-1,2-DICHLOROETHENE	Not detected	1
1,2-DICHLOROPROPANE	Not detected	1
CIS-1,3-DICHLOROPROPENE	Not detected	1
TRANS-1,3-DICHLOROPROPENE	Not detected	1
EDB	Not detected	1

# Lab Report

HRP/Spectrum Sample I.D. AA55710 (continued)  
Page: 2  
September 11, 1996



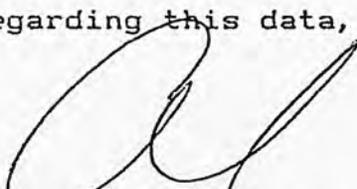
Data for VOLATILES BY 601/602 (continued):

Component Name	Result	Component MDL
METHYLENE CHLORIDE	Not detected	5
1, 1, 2, 2-TETRACHLOROETHANE	Not detected	1
TETRACHLOROETHENE	Not detected	1
1, 1, 1-TRICHLOROETHANE	Not detected	1
1, 1, 2-TRICHLOROETHANE	Not detected	1
TRICHLOROETHENE	Not detected	1
TRICHLOROFLUOROMETHANE	Not detected	5
VINYL CHLORIDE	Not detected	5
BENZENE	Not detected	1
ETHYLBENZENE	Not detected	1
IPE	Not detected	5
MTBE	Not detected	5
TOLUENE	Not detected	1
TOTAL XYLENES	Not detected	3

Sample comments:

Project Name: NAS-Pensacola  
PO# NAV0227.FE

If there are any questions regarding this data, please call.



Angela D. Overcash  
Laboratory Directory



# CHAIN OF CUSTODY RECORD

449 Springbrook Road ▲ Charlotte, NC 28217  
 P.O. Box 240543 ▲ Charlotte, NC 28221-0543  
 Phone: 704/529-6364 ▲ Fax: 704/529-0409

Full Service Analytical & Environmental Solutions

**PRESS DOWN FIRMLY - 3 COPIES**

Client HRP/Spectrum Inc  
 Address 5 Century Dr. Ste 230  
Greenville, SC 29607  
 Phone (864) 298-0231

Report To Tad Goetchens  
 Bill To Tad Goetchens  
 P.O.#/Billing Reference NAV0227.FE  
 Project Name NAS-PENSACOLA

Lab Location Requested for Certified Analysis ~~NC~~ ~~SC~~ Other FLA  
 Water Chlorinated Yes \_\_\_ No  NA \_\_\_  
 Sample Iced Upon Collection Yes  No \_\_\_  
 Requested Due Date Standard

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED				REMARKS	SUB LAB CERT. ID NO.	PRISM LAB ID NO.	
				*TYPE SEE BELOW	NO.	SIZE		601	602						
INLET	9-4-96	14:25	Water	G	3	40ml	(HCL2)	X	X					5370	
OUTLET	9-4-96	14:25	Water	G	3	40ml	(ICE)	X	X					5371	

Sampler's Signature Brian W Hill Sampled By (Print Name) Brian W Hill Affiliation HRP/Spectrum Inc

Relinquished By: (Signature) <u>Brian W Hill</u>	Received By: (Signature)	Date	Military/Hours
Relinquished By: (Signature)	Received By: (Signature)	Date	
Relinquished By: (Signature)	Received For Prism Laboratories By: <u>A. Bates</u>	Date <u>9/5/96</u>	Military/Hours <u>10:25</u>
Method of Shipment: <u>Fedex</u>		Date	

Additional Comments:  
7605B2

NPDES: NC \_\_\_ UST: NC \_\_\_ GROUNDWATER: ~~NC~~ DRINKING WATER: NC \_\_\_ SOLID WASTE: NC \_\_\_ OTHER: NC \_\_\_  
 SC \_\_\_ SC \_\_\_ OTHER: SC \_\_\_  
 OTHER \_\_\_ OTHER: OTHER \_\_\_



# Lab Report

HRP/Spectrum Sample I.D. AA57527 (continued)

Page: 2

October 17, 1996



Data for VOLATILES BY 601/602 (continued):

Component Name	Result	Component MDL
METHYLENE CHLORIDE	Not detected	5
1,1,2,2-TETRACHLOROETHANE	Not detected	1
TETRACHLOROETHENE	Not detected	1
1,1,1-TRICHLOROETHANE	Not detected	1
1,1,2-TRICHLOROETHANE	Not detected	1
TRICHLOROETHENE	Not detected	1
TRICHLOROFLUOROMETHANE	Not detected	5
VINYL CHLORIDE	Not detected	5
BENZENE	36	1
ETHYLBENZENE	Not detected	1
IPE	Not detected	5
MTBE	Not detected	5
TOLUENE	Not detected	1
TOTAL XYLENES	Not detected	3

Sample comments:

PO# NAV0227.GE

Project Name: NAS-Pensacola

If there are any questions regarding this data, please call.

A handwritten signature in black ink, appearing to read "A. Overcash", is written over the printed name.

Angela D. Overcash  
Laboratory Director

# Lab Report

From: NC Certification No. 402  
SC Certification No. 99012  
NC Drinking Water Cert. No. 37735  
FL Certification No. E87519



October 17, 1996

To: HRP/Spectrum  
Attn: Mr. Tad A. Goetcheus  
5 Century Dr. Suite 230  
Greenville, SC 29607

The following analytical results have been obtained for the indicated sample which was submitted to this laboratory:

Sample I.D. AA57528 Customer Code: HRPSPEC  
Login Group #: 8345B2 Customer Reference: PENSACOL  
Phone Number: (803)298-0231/fax(803)242-6243  
Customer Sample I.D#: OUTLET  
Sample collection date: 10/09/96 Time: 15:35  
Lab submittal date: 10/10/96 Time: 09:00  
Received by: ADO Validated by: ADO

Parameter: VOLATILES BY 601/602  
Method reference: EPA 601/602  
Result: see below  
Date started: 10/16/96  
Time started: 03:22

Unit: ug/L

Date finished: 10/16/96  
Analyst: MJB

Data for VOLATILES BY 601/602 ug/L:

Component Name	Result	Component MDL
BROMODICHLOROMETHANE	Not detected	1
BROMOFORM	Not detected	1
BROMOMETHANE	Not detected	5
CARBON TETRACHLORIDE	Not detected	1
CHLOROBENZENE	Not detected	1
CHLOROETHANE	Not detected	5
CHLOROFORM	Not detected	1
CHLOROMETHANE	Not detected	5
DIBROMOCHLOROMETHANE	Not detected	1
1,2-DICHLOROBENZENE	Not detected	1
1,3-DICHLOROBENZENE	Not detected	1
1,4-DICHLOROBENZENE	Not detected	1
DICHLOROFLUOROMETHANE	Not detected	5
1,1-DICHLOROETHANE	Not detected	1
1,2-DICHLOROETHANE	Not detected	1
1,1-DICHLOROETHENE	Not detected	1
TRANS-1,2-DICHLOROETHENE	Not detected	1
1,2-DICHLOROPROPANE	Not detected	1
CIS-1,3-DICHLOROPROPENE	Not detected	1
TRANS-1,3-DICHLOROPROPENE	Not detected	1
EDB	Not detected	1

# Lab Report

HRP/Spectrum Sample I.D. AA57528 (continued)

Page: 2

October 17, 1996



Data for VOLATILES BY 601/602 (continued):

Component Name	Result	Component MDL
METHYLENE CHLORIDE	Not detected	5
1, 1, 2, 2-TETRACHLOROETHANE	Not detected	1
TETRACHLOROETHENE	Not detected	1
1, 1, 1-TRICHLOROETHANE	Not detected	1
1, 1, 2-TRICHLOROETHANE	Not detected	1
TRICHLOROETHENE	Not detected	1
TRICHLOROFLUOROMETHANE	Not detected	5
VINYL CHLORIDE	Not detected	5
BENZENE	Not detected	1
ETHYLBENZENE	Not detected	1
IPE	Not detected	5
MTBE	Not detected	5
TOLUENE	Not detected	1
TOTAL XYLENES	Not detected	3

Sample comments:

PN# NAV0227.GE

Project Name: NAS-Pensacola

If there are any questions regarding this data, please call.

A handwritten signature in black ink, appearing to read "A. Overcash".

Angela D. Overcash  
Laboratory Director



# CHAIN OF CUSTODY RECORD

449 Springbrook Road ▲ Charlotte, NC 28217  
 P.O. Box 240543 ▲ Charlotte, NC 28224-0543  
 Phone: 704/529-6364 ▲ Fax: 704/525-0409

Full Service Analytical & Environmental Solutions

Client HRP / Spectrum Inc  
 Address 5 century Drive  
Suite 230 Greenville SC  
 Phone (864) 298-0231 29607

Report To Tad A. Goetzhus  
 Bill To Tad A Goetzhus  
 P.O.#/Billing Reference NAV 0227, FE  
 Project Name NAS - Bensaldg

**PRESS DOWN FIRMLY - 3 COPIES**

Lab Location Requested for Certified Analysis NC  SC  Other FLA  
 Water Chlorinated Yes  No  NA   
 Sample Iced Upon Collection Yes  No   
 Requested Due Date Standard

CLIENT SAMPLE DESCRIPTION	DATE COLLECTED	TIME COLLECTED MILITARY HOURS	MATRIX (SOIL, WATER OR SLUDGE)	SAMPLE CONTAINER			PRESERVATIVES	ANALYSES REQUESTED				REMARKS	SUB LAB CERT. ID NO.	PRISM LAB ID NO.
				*TYPE SEE BELOW	NO.	SIZE		601	602					
INLET	10-9-96	15:30	Water	G	3	40ml	HG1	X	X					57527
OUTLET	10-9-96	15:35	Water	G	3	40ml	COOL	X	X					57528

Sampler's Signature Brian W Hill Sampled By (Print Name) Brian W Hill Affiliation HRP / Spectrum

Relinquished By: (Signature) <u>Brian W Hill</u>	Received By: (Signature)	Date	Military/Hours
Relinquished By: (Signature)	Received By: (Signature)	Date	
Relinquished By: (Signature)	Received For Prism Laboratories By: <u>Carmon E. Lane</u>	Date <u>10/16/16</u>	Hours <u>6:00</u>
Method of Shipment:		Date	

Additional Comments:  
  
834532

NPDES: NC  SC  OTHER  UST: NC  SC  OTHER  GROUNDWATER: NC  SC  OTHER  DRINKING WATER: NC  SC  OTHER  SOLID WASTE: NC  SC  OTHER  OTHER: NC  SC  OTHER

**ATTACHMENT #4**

**QUARTERLY GROUNDWATER LEVEL MEASUREMENTS  
(OCTOBER 1996)**



PROJECT: <b>WATER LEVEL MEASUREMENTS</b>	DATE: <u>10/10/96</u>
LOCATION: <b>NAS - PENSACOLA FLORIDA</b>	TIDE: <u>11:28 High (Warrington)</u>
JOB NUMBER: <b>NAV0227.FE</b>	MEASURED BY: <u>Hill/Gentry</u>
MEASURING DEVICE: <b>Electronic Meter</b>	

Measuring Point							
Well Number	Description	Elevation (ft)	Depth to Water (ft)	Elevation of Water (ft)	Time	Comments	
GM-70	TOC	6.96				Destroyed during construction of IWTP	
GM-71	TOC	6.60	5.17	1.43	11:00	Busted and leaning	
GM-72	TOC	7.25	6.08	1.17	11:45		
GM-73	TOC	12.23	9.93	2.30	10:15		
GM-76	TOC	8.12	6.25	1.87	9:46		
GM-77	TOC	5.27	3.84	1.43	9:40		
GM-78	TOC	6.86	4.88	1.98	9:37		
GM-79	TOC	4.60	3.14	1.46	9:30		
GM-80	TOC	4.56	2.76	1.80	9:10		
GM-81	TOC	4.21	2.37	1.84	9:05		
GM-82	TOC	3.59	2.45	1.14	9:22		
GM-83	TOC	4.74	3.55	1.19	9:20		
GM-84R	TOC	12.26	11.00	1.26	10:16		
33G01	TOC	7.35	5.46	1.89	10:58		
33G02	TOC	7.82	5.69	2.13	11:11		
33G03	TOC	6.28	4.41	1.87	9:32		
33G04	TOC	11.78	10.52	1.26	10:18		
33G05	TOC	7.44	6.40	1.04	11:50		
33G08	TOC	6.02	4.21	1.81	9:33		
33G09	TOC	7.53	5.21	2.32	9:53		
33G10	TOC	10.73	7.85	2.88	9:59		
33G11	TOC	7.60	5.25	2.35	10:02		
33G12	TOC	7.33	6.23	1.10	11:53		
33G14	TOC	10.51	9.18	1.33	10:08		
33G15	TOC	5.28	3.40	1.88	9:25		
33G16	TOC	7.84	5.73	2.11	11:10		
33G17	TOC	7.75	5.76	1.99	10:50		
33G18	TOC	12.05	10.33	1.72	10:25		
33G20	TOC			0.00		Could not measure (under water)	
13G06	TOC	6.99	5.83	1.16	10:40	No lock	
13G07	TOC	10.59	8.92	1.67	8:50	Called 13GS07	
13G19	TOC	7.35		7.35		Could not find	

