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NAS PENSACOLA
5090.3a

JULY 1998 MONTHLY OPERATION AND MAINTENANCE REPORT ON THE DOMESTIC
WASTEWATER TREATMENT PLANT GROUNDWATER REMEDIATION PROJECT FOR NAS
PENSACOLA FL
8/5/1998
HRP SPECTRUM INC

HRP / *Spectrum*, Inc.

August 5, 1998

Commanding Officer
Attn: Mr. Tom Kelley
Naval Public Works Center, Code 423.4
310 John Tower Road, Building 3887
Naval Air Station
Pensacola, Florida 32507-2170

RE: JULY 1998 MONTHLY OPERATION AND MAINTENANCE REPORT ON THE DOMESTIC WASTEWATER TREATMENT PLANT (DWTP) GROUNDWATER REMEDIATION PROJECT FOR NAVAL AIR STATION (NAS) PENSACOLA, FLORIDA, (JOB #NAV0303.FE)

Dear Sir:

HRP/Spectrum is pleased to submit the July 1998 Monthly and 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 July 1998, and Attachment #1 contains a time series graph of the calculated biweekly 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 have been forwarded to Commander, Naval Air Station, Environmental Division, Attention: Mr. Bill Taylor. **HRP/Spectrum** has the following comments for the month of July 1998, and overall for the Second Quarter of 1998:

RECOVERY WELL SYSTEM OPERATION STATUS

RW-1, 2 AND 3

- On July 14, 1998, Pump B for RW-1, 2, and 3 was shut down to perform RW rehabilitation on RW-1, 2, 3, 4, 5A, 6, and 7. RW-3 was cleaned according to the steps listed on the enclosed "Rehabilitation Procedures for Recovery Systems RW-1, 2, 3, and RW-7.
- Upon departure, RW-1, 2, and 3 was not in operation. No leaks were detected on either the recovery wells or pumps.
- No second operation and maintenance site visit was performed during the month of July. Our site contact, Mr. Tom Kelley, is maintaining the pumps until a decision is made by the Florida DEP to shut the recovery well system down.

RW-4 AND 6

- On July 14, 1998, Pump A for RW-4 and RW-6 was shut down to perform RW rehabilitation on RW- 1, 2, 3, 4, 5A, 6, and 7. Recovery Wells 4 and 6 were cleaned according to the steps listed on the enclosed "Rehabilitation Procedures for Recovery Systems RW-4, RW-6 and RW-5A".
- On July 16, 1998, Pump A for RW-4 and RW-6 was restarted. Upon departure, RW-4 and RW-6 were operating, producing normal flow and pressure. No leaks were detected on either the recovery wells or pumps.
- No second operation and maintenance site visit was performed during the month of July. Our site contact, Mr. Tom Kelley, is maintaining the pumps until a decision is made by the Florida DEP to shut the recovery well system down.

RW-5A

- Upon arrival to the site on July 14, 1998, Pump B for RW-5A was not in operation. Recovery Well 5A was cleaned according to the steps listed on the enclosed "Rehabilitation Procedures for Recovery Systems RW-4, 6, and RW-5A".
- On July 16, 1998, Pump B for RW-5A was restarted. Upon departure, RW-5A was operating, producing normal flow and pressure. No leaks were detected on either the recovery well or pump.
- No second operation and maintenance site visit was performed during the month of July. Our site contact, Mr. Tom Kelley, is maintaining the pumps until a decision is made by the Florida DEP to shut the recovery well system down.

RW-7

- On July 14, 1998, RW-7 was shut down to perform RW rehabilitation on RW-1, 2, 3, 4, 5A, 6, and 7. Recovery Well 7 was cleaned according to the steps listed on the enclosed "Rehabilitation Procedures for Recovery Systems, RW-1, 2, 3, and RW-7.
- On July 16, 1998, Pump A for RW-7 was restarted and operating with normal pressure and flow. Upon departure, no leaks were detected at the recovery well or pump.
- No second operation and maintenance site visit was performed during the month of July. Our site contact, Mr. Tom Kelley, is maintaining the pumps until a decision is made by the Florida DEP to shut the recovery well system down.



PRE-TREATMENT AIR STRIPPER

- On July 14, 1998, the Air Stripper was taken off-line to perform RW rehabilitation on Wells 1, 2, 3, 4, 5A, 6, and 7, as well as the quarterly cleaning of the Air Stripper. The Air Stripper was cleaned on July 15, 1998 using the steps listed on the enclosed "Cleaning Procedures for the Air Stripper Unit". The Air Stripper was brought back on-line July 16, 1998. Prior to cleaning the Air Stripper, samples were collected from the influent and effluent sample ports. Upon departure, no leaks were detected.

LABORATORY RESULTS - AIR STRIPPER ANALYTICAL RESULTS

During the July sampling event, samples were collected from the influent and effluent ports of the Air Stripper. A copy of the laboratory results for the month of July is provided as Attachment #3 to this report. The Air Stripper was found to be working effectively as the outlet sample yielded non detectable levels of contaminants. Specific chemicals present in the inlet samples are provided below:

AIR STRIPPER ANALYTICAL RESULTS NAS-PENSACOLA July 1998		
CHEMICAL	INLET	OUTLET
Chlorobenzene (ug/l)	43	N/D
1,2-Dichlorobenzene (ug/l)	30	N/D
1,3-Dichlorobenzene (ug/l)	20	N/D
1,4-Dichlorobenzene (ug/l)	26	N/D
1,1-Dichloroethane	4	N/D
Benzene (ug/l)	11	N/D

*N/D=Not detected.

GROUNDWATER LEVELS

- On July 14, 1998, the quarterly groundwater levels in all previously designated monitoring wells were measured. The results from these measurements are provided as Attachment #4. An electronic meter measuring device was used to measure the water level in each well.

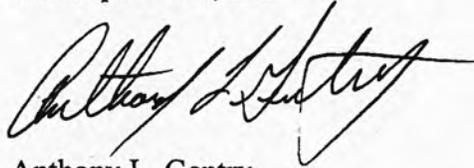


(f:\p\alg\pensacola\nav0303\qtrlygwm.wpd)

If you have questions regarding this report or other matters pertaining to this project, please contact Tad Goetcheus or myself at (864) 289-0311.

Sincerely,

HRP/Spectrum, Inc.



Anthony L. Gentry
Project Engineer

Enclosure

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



(f:\plalg\pensacola\nav0303\qtrlygwm.wpd)

**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)	CALCULATE D 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	7/14/98	9:10	15,292,780	8	17	6.7	6.67	B	504	201690	N/A, N/A, 4.62
RW 4&6	7/14/98	9:26	5,951,690	5	12	4.7	4.42	A	504	133710	3.53, 5.18
RW 5A	7/14/98	N/A	N/A	N/A	N/A	N/A	0.00	N/A	504	0	N/A
RW 7	7/14/98	9:42	7,512,620	5	22	2.4	2.40	A	504	72570	21.21

* Flow meter not reading flow.

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.

INSPECTOR'S NAME	ANTHONY L. GENTRY
DATE	7/14/98
AMBIENT TEMPERATURE	90
WEATHER CONDITIONS	SUNNY

ITEM	INSPECTION CHECK	INSPECTION FREQUENCY	DATA/ COMMENTS
INFLUENT PIPING	OPERATION OF BALL CHECK VALVE	MONTHLY	OK
	SAMPLE PORT OPERATION	MONTHLY	OK
	FLOW METER READING	BI-WEEKLY	19,713,680
	SAMPLE COLLECTION	QUARTERLY	YES
AIR STRIPPER	PRESSURE GAUGE READING	BI-WEEKLY	25.0" 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	QUARTERLY	YES
SYSTEM COMPONENTS	EXPOSED PIPING CONNECTIONS	MONTHLY	OK

SYSTEM DESCRIPTION:

ACTIVITIES PERFORMED: Cleaned Air Stripper according to the "Cleaning Procedures for the Air Stripper Unit, Naval Air Station, Groundwater Pretreatment System, Pensacola, Florida".

Attachment #1
Time Series Graphs

**ATTACHMENT 1
GROUNDWATER FLOW READINGS**

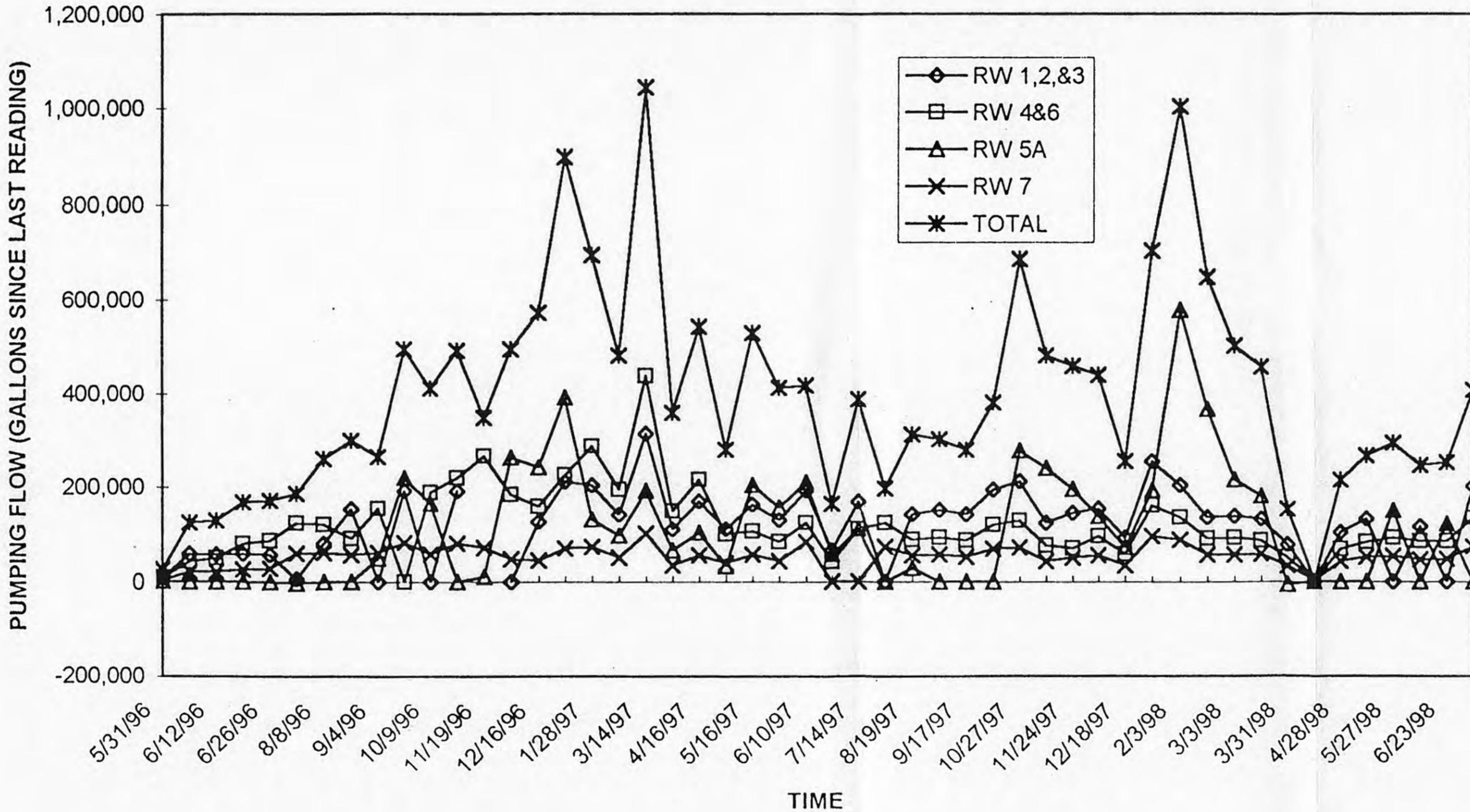
DATE	RW 1,2,&3	RW 4&6	RW 5A	RW 7	TOTAL
5/31/96	9,722	10,033	2,577	4,760	27,092
6/6/96	59,060	42,822	439	22,325	124,646
6/12/96	56,952	49,788	460	21,626	128,826
6/19/96	59,513	80,468	1,555	26,465	168,001
6/26/96	56,512	86,242	0	28,001	170,755
7/11/96	6,264	123,432	-3,289	59,241	185,648
8/8/96	80,000	120,000	0	60,000	260,000
8/21/96	153,290	90,540	0	55,670	299,500
9/4/96	0	154,470	49,184	60,980	264,634
9/23/96	192,330	0	220,336	82,000	494,666
10/9/96	0	188,940	164,420	57,760	411,120
10/28/96	191,710	220,050	0	79,580	491,340
11/19/96		266,730	10,080	70,950	347,760
12/3/96	0	184,490	262,710	47,130	494,330
12/16/96	125,560	158,840	242,580	44,410	571,390
1/6/97	211,440	225,360	391,290	69,570	897,660
1/28/97	203,820	286,830	130,110	72,700	693,460
2/11/97	140,470	194,330	95,910	49,490	480,200
3/14/97	313,290	437,710	191,710	101,070	1,043,780
3/25/97	110,100	147,810	65,650	34,540	358,100
4/16/97	169,240	215,640	102,140	55,370	542,390
4/29/97	109,650	98,960	32,710	38,680	280,000
5/16/97	161,300	105,890	204,190	56,590	527,970
5/29/97	129,190	83,640	156,490	43,120	412,440
6/10/97	192,010	123,890	209,690	83,390	416,970
6/26/97	65,640	41,840	56,390	0	163,870
7/14/97	167,630	109,340	109,800	0	386,770
8/5/97	290	123,010	0	72,580	195,880
8/19/97	141,650	86,850	28,060	54,660	311,220
9/3/97	150,690	92,500	176	56,910	300,276
9/17/97	140,450	85,610	0	51,390	277,450
10/6/97	193,180	118,120	0	68,230	379,530
10/27/97	210,410	127,460	275,934	70,980	684,784
11/10/97	122,530	75,330	240,020	42,840	480,720
11/24/97	143,590	69,310	195,400	49,930	458,230
12/9/97	153,410	95,070	136,140	54,790	439,410
12/18/97	92,110	57,360	71,100	33,470	254,040
1/12/98	254,880	160,220	193,520	94,190	702,810
2/3/98	203,280	135,340	577,670	86,880	1,003,170
2/17/98	135,540	90,420	365,580	55,780	647,320
3/3/98	137,580	91,680	216,120	56,350	501,730
3/17/98	131,720	86,380	180,970	58,250	457,320
3/31/98	77,450	50,180	-7,020	32,970	153,580

**ATTACHMENT 1
GROUNDWATER FLOW READINGS**

DATE	RW 1,2,&3	RW 4&6	RW 5A	RW 7	TOTAL
4/17/98	0	810	0	790	1,600
4/28/98	104,510	67,690	0	42,700	214,900
5/12/98	132050	83210	0	51960	267,220
5/27/98	0	91990	149,360	52790	294,140
6/9/98	116080	83840	0	46350	246,270
6/23/98	0	84190	121,850	47260	253,300
7/14/98	201690	133710	0	72570	407,970

NOTE: Large peak on 3/14/97 is due to no second site visit during the month of February.

NAS PENSACOLA GROUNDWATER RECOVERY WELL FLOW RATES



Attachment #2

**Recovery Well and Air Stripper
REHAB Procedures**

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.

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.

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**

July 1998

Lab Report

HRP/Spectrum Sample I.D. AB00897 (continued)

Page: 2

July 28, 1998

Full Service Analytical & Environmental Solutions

Data for VOLATILES BY 601/602 (continued):

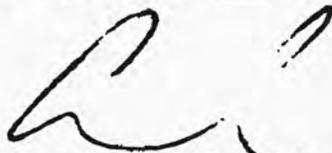
Component Name	Result	Component MDL
METHYLENE CHLORIDE	Not detected	5
1, 1, 2, 2-TETRACHLOROETHANE	Not detected	1
TETRACHLOROETHENE	Not detected	1
1, 1, 1-TRICHLOROETHANE	Not detected	1
1, 1, 2-TRICHLOROETHANE	Not detected	1
TRICHLOROETHENE	Not detected	1
TRICHLOROFLUOROMETHANE	Not detected	5
VINYL CHLORIDE	Not detected	5
BENZENE	11	1
ETHYLBENZENE	Not detected	1
IPE	Not detected	5
MTBE	Not detected	5
TOLUENE	Not detected	1
TOTAL XYLENES	Not detected	3
CIS-1, 2-DICHLOROETHENE	Not detected	1

Sample comments:

Project Name: NAS Pensacola

PO# NAV0303.FE

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



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



July 28, 1998

To: HRP/Spectrum
 Attn: Tad A. Goetcheus
 7001 Pelham Rd. Suite J
 Greenville, SC 29615
 Proj: NAS Pensacola

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

Sample I.D. AB00898 Customer Code: HRPSPEC
 Login Group #: 6384D2 Customer Reference: NAS PENS
 Phone Number: (864)289-0311/fax(864)281-9846
 Customer Sample I.D#: EFFLUENT
 Sample collection date: 07/14/98 Time: 09:20
 Lab submittal date: 07/15/98 Time: 10:30
 Received by: TLM Validated by: ADO

Parameter: VOLATILES BY 601/602
 Method reference: EPA 601/602
 Result: see below
 Date started: 07/22/98
 Time started: 18:51

Unit: ug/L
 Date finished: 07/28/98
 Analyst: JMV

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
DICHLORODIFLUOROMETHANE	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	5
EDB	Not detected	1

Lab Report

HRP/Spectrum Sample I.D. AB00898 (continued)

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July 28, 1998

Full Service Analytical & Environmental Solutions

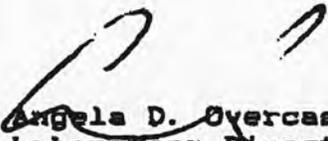
Data for VOLATILES BY 601/602 (continued):

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
CIS-1, 2-DICHLOROETHENE	Not detected	1

Sample comments:

Project Name: NAS Pensacola
PO# NAV0303.FE

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


Angela D. Overcash
Laboratory Director

CHAIN OF CUSTODY RECORD

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

LAB USE ONLY			
	YES	NO	NA
Samples INTACT upon arrival?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received ON WET ICE? Temp <u>5.2°C</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER PRESERVATIVES indicated?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Received WITHIN HOLDING TIMES?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CUSTODY SEALS INTACT?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
VOLATILES rec'd W/O HEADSPACE?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROPER CONTAINERS used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Full Service Analytical & Environmental Solutions

Client HRP/Spectrum
 Physical Address 7001 - J Kline Rd
Greenville SC 29615
 Phone 864.249.0311 Fax
 P.O./Billing Reference NAV0303 FE
 Project Name NAS Pensacola

PRESS DOWN FIRMLY - 3 COPIES

REPORT TO: Name Ted A. Goetzhaus
 Address same
 BILL TO: Name
 Address
 Requested Due Date

State Certification
 Requested NC SC Other FLA NA
 Water Chlorinated Yes No X NA X
 Sample Iced Upon Collection Yes X No
 CMUD NPDES OTHER

(SEE REVERSE SIDE FOR RUSH TURNAROUND FEES)

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						
<u>influent tapent</u>	<u>7/14/98</u>	<u>9:20</u>	<u>water</u>	<u>G</u>	<u>3</u>	<u>40ml</u>	<u>HCL</u>	<u>X</u>	<u>X</u>						
<u>effluent</u>	<u>11</u>	<u>11</u>		<u>G</u>	<u>3</u>	<u>40ml</u>	<u>HCL</u>	<u>X</u>	<u>X</u>						

Sampler's Signature Jason W Davis Sampled By (Print Name) Jason W Davis Affiliation HRP

Relinquished By: (Signature) <u>Jason W Davis</u>	Received By: (Signature) <u> </u>	Date <u> </u>	Military/Hours <u> </u>
Relinquished By: (Signature) <u> </u>	Received By: (Signature) <u> </u>	Date <u> </u>	
Relinquished By: (Signature) <u> </u>	Received For Prism Laboratories By: <u> </u>	Date <u>7/15/98 10:30</u>	Log-In Group No. <u> </u>

Additional Comments:
Airstripper
influent & effluent

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

CONTAINER TYPE CODES: A - Amber C - Clear G - Glass P - Plastic T1 - Teflon-lined Can VOA - Volatile Organics Analysis (Zero Head Space) SEE REVERSE FOR TERMS & CONDITIONS

AUG 04 '98 07:58 TO 8642819846 FROM PRISM LABS 1-243 P.04

Attachment #4

Quarterly Ground Water Level Measurements

July 1998

PROJECT: WATER LEVEL MEASUREMENTS	DATE: <u>July 14, 1998</u>
LOCATION: NAS - PENSACOLA FLORIDA	TIDE: <u>Warrington High Tide 13:51</u>
JOB NUMBER: NAV0303.FE	MEASURED BY: <u>ALG/JWD</u>
MEASURING DEVICE: Electronic Meter	

Measuring Point						
Well Number	Description	Elevation (ft)	Depth to Water (ft)	Elevation of Water (ft)	Time	Comments
GM-70	TOC	6.96				DESTROYED
GM-71	TOC	6.60	6.70	-0.10	16:07	Well Casing Damaged
GM-72	TOC	7.25	6.40	0.85	14:59	
GM-73	TOC	12.23	11.59	0.64	14:39	
GM-76	TOC	8.12	6.61	1.51	14:09	
GM-77	TOC	5.27	4.38	0.89	14:05	
GM-78	TOC	6.86	5.89	0.97	13:56	
GM-79	TOC	4.60	3.90	0.70	13:45	
GM-80	TOC	4.56	3.77	0.79	13:35	
GM-81	TOC	4.21	3.41	0.80	13:41	
GM-82	TOC	3.59	3.82	-0.23	13:50	
GM-83	TOC	4.74	3.98	0.76	13:37	
GM-84R	TOC	12.26	11.48	0.78	14:37	
33G01	TOC	7.35	6.45	0.90	16:05	
33G02	TOC	7.82	6.94	0.88	15:56	
33G03	TOC	6.28	5.22	1.06	13:59	
33G04	TOC	11.78	10.94	0.84	14:48	
33G05	TOC	7.44	6.55	0.89	15:04	
33G08	TOC	6.02	5.02	1.00	13:58	
33G09	TOC	7.53	6.01	1.52	15:14	
33G10	TOC	10.73	8.98	1.75	14:15	
33G11	TOC	7.60	6.39	1.21	14:23	
33G12	TOC	7.33	6.45	0.88	15:06	
33G14	TOC	10.51	9.61	0.90	14:35	
33G15	TOC	5.28	4.52	0.76	13:52	
33G16	TOC	7.84	6.98	0.86	15:55	
33G17	TOC	7.75	6.83	0.92	16:00	
33G18	TOC	12.05	13.70	-1.65	14:50	
33G20	TOC	3.73	2.10	1.63		Well Lock Cut
13G06	TOC	6.99	6.03	0.96	14:30	Well Casing Damaged
13G07	TOC	10.59	10.00	0.59	13:30	
13G19	TOC	7.35		7.35		DESTROYED

