N65928.AR.000987
NTC ORLANDO
5090.3a

QUARTERLY GROUNDWATER SAMPLING STUDY AREA 52 WITH TRANSMITTAL LETTER
NTC ORLANDO FL
1/10/2000
TETRA TECH

TETRA TECH NUS, INC.
800 Oak Ridge Turr
(423) 483-9900

08.04.52.0002
00263

00-A002

January 10, 2000

Commanding Officer
SOUTHNAVFACENGCOM
ATTN: Ms. Barbara Nwokike, Code 1873
P.O. Box 190010
2155 Eagle Drive
North Charleston, SC 29419-9010

Subject: Study Area 52 Quarterly Groundwater Sampling – October 1999
McCoy Annex, NTC, Orlando

Dear Ms. Nwokike:

Enclosed are the results from the quarterly groundwater sampling conducted at SA 52 on October 24, 1999. The results for the October 1999, and previous sampling events, are summarized in the attached tables and figures. Copies of the field log sheets are included in Attachment A.

There was only one detection (Dieldrin in well OLD-52-13) in the October 1999 samples. Dieldrin had been detected in well OLD-52-12 at 0.081/0.069 µg/L in July 1999, but was not detected (<0.05 µg/L) in October 1999. Conversely, Dieldrin was detected in well OLD-52-13 at 0.027 J µg/L (estimated) in the October 1999 sample after decreasing from 0.2 µg/L in February 1998 to <0.05 µg/L in July 1998. Upgradient well OLD-52-11 remains free of Dieldrin contamination.

The next sampling at SA 52 will be performed in January 2000. If you have any questions, please contact me at (423) 220-4730.

Sincerely,

Steven B. McCoy

Steven B. McCoy, P.E.
Task Order Manager

SBM:ckf

Enclosure

c: Mr. Rick Allen, Harding Lawson Associates
Mr. David Grabka, FDEP
Mr. Wayne Hansel, SOUTHNAVFACENGCOM
Ms. Nancy Rodriguez, USEPA Region IV
Mr. Steve Tsangaris, CH2M Hill
Mr. Michael Campbell, Tetra Tech NUS
Mr. Mark Perry, Tetra Tech NUS (unbound)
Ms. Debbie Wroblewski, Tetra Tech NUS (cover letter only)
File/db

GROUNDWATER SAMPLING AT STUDY AREA 52

Trip Date: October 24, 1999

Site Name: Study Area 52
McCoy Annex, Naval Training Center, Orlando, Florida

TO Manager: Steve McCoy

Field Team: Jason McCann
Gary Sparks
Jerry Krieger

Prepared by: Ches Lyon

1. PURPOSE

Quarterly groundwater sampling was conducted at Study Area (SA) 52 in October 1999. The fieldwork was performed in accordance with the *Work Plan for Groundwater Sampling* (Tetra Tech NUS, 1999), and the *Project Operations Plan* (POP) (ABB-ES, 1997).

2. ACTIVITIES

Sampling - Sampling activities began on October 24, 1999 with measurements of groundwater elevations. Wells OLD-52-11, OLD-52-12, and OLD-52-13 were then purged using the low-flow method described in the POP. Purging of wells consisted of removing groundwater with a peristaltic pump at a rate of approximately 100 ml/min until field parameters, temperature, pH, conductivity, turbidity, dissolved oxygen, and oxidation-reduction potential, had stabilized. Water levels in the 2-in wells were monitored every 3 to 5 minutes to ensure that drawdown was less than 0.3 feet. However, in well OLD-52-11 (a 0.5-inch microwell), the small diameter of the well precluded measurement of the depth to water while tubing was installed.

Samples were collected with the peristaltic pump using the vacuum jug method. All samples were placed in ice-cooled coolers and shipped overnight to Quanterra Environmental Services in North Canton, Ohio for analysis. Quanterra analyzed the samples for pesticides using SW 846 Method 8081A.

Sample Turbidity – The turbidity readings for all three wells stabilized during low-flow purging within the ±5% criterion specified in the POP, but only the sample for OLD-52-12 (3.09 NTU) met the <10 NTU criterion. The turbidity readings for microwell OLD-52-11 (695 NTU) and 2-inch monitoring well OLD-52-13 (29.5 NTU)

significantly exceeded the turbidity criterion, but should not have affected the pesticide analytical results. The turbidity readings for the July and October 1999 sampling events are shown below:

Sample Date	OLD-52-11	OLD-52-12	OLD-52-13
07/27/99	160 NTU	25 NTU	1.1 NTU
10/24/99	695 NTU	3.09 NTU	29.5 NTU

3. PROBLEMS ENCOUNTERED

The sample turbidity problem described above was the only significant difficulty encountered.

4. RESULTS

Water Level Survey - Water levels measured in wells OLD-52-11, OLD-52-12, and OLD-52-13 on October 24, 1999, are presented in Table 1 and Figure 1. The water level data are consistent with the northeasterly groundwater flow direction presented in the SA 52 Environmental Site Screening Report (HLA, 1999).

Data Validation - All sample analyses were subjected to data validation in accordance with the guidance document *Navy Installation Restoration Chemical Data Quality Assurance Guide* (NFESC, 1996). Qualification of the data was performed using the *USEPA Contract Laboratory Program: National Functional Guidelines for Organic Data Review* (USEPA, 1994). The data validation evaluated data completeness, holding time compliance, calibration compliance, laboratory blank contamination, surrogate spike recovery, matrix spike recovery, blank spike recovery, internal standard response, sample quantitation, and detection limits. Qualifiers resulting from the validation process are shown with the analyte concentrations in Tables 2, 3, and 4.

Analytical Results - Table 2 presents the contaminant detections in this round of sampling. Historical detections are summarized in Table 3 and a complete listing of validated analytical data for the October 1999 sampling event is included as Table 4. Shaded cells indicate analyte concentrations above Florida Groundwater Cleanup Target Levels (GCTLs). The distribution of contaminants exceeding the GCTLs is shown on Figure 2.

There was only one detection (Dieldrin in well OLD-52-13) in the October 1999 samples. Dieldrin had been detected in well OLD-52-12 at 0.081/0.069 µg/L in July 1999, but was not detected (<0.05 µg/L) in October 1999. Conversely, Dieldrin was detected in well OLD-52-13 at 0.027 J µg/L (estimated) in the October 1999 sample after decreasing from 0.2 µg/L in February 1998 to <0.05 µg/L in July 1999. Upgradient well OLD-52-11 remains free of Dieldrin contamination.

Reporting and Method Detection Limits

The laboratory reporting limit for Dieldrin in the October 1999 samples was 0.05 µg/L. The reporting limit was established by the calibration standards (concentrations of 0.05 µg/L) used by the lab in analyzing these samples. According to Quanterra's "detection limit study", the lab's Method Detection Limit (MDL) for Dieldrin is 0.01 µg/L. Thus, concentrations approaching 0.01 µg/L should be detected and reported as "J" or estimated values. For example, the concentration in sample NTC52G1111 is reported as 0.027J. It should be noted, however, that the MDL of 0.01 µg/L is higher than the GCTL of 0.005 µg/L.

5. REFERENCES

ABB-ES (ABB Environmental Services, Inc.), 1997. *Project Operations Plan for Site Investigations and Remedial Investigations*. Naval Training Center, Orlando, Florida, Unit Identification Code N65928, Navy CLEAN District 1, Contract No. N62467-89-D-0317, August.

HLA (Harding Lawson Associates), 1999. *Base Realignment and Closure, Environmental Site Screening Report, Interim Remedial Action, Study Area 52.* Naval Training Center, Orlando, Florida, Unit Identification Code N65928, Navy CLEAN District 1, Contract No. N62467-89-D-0317/107, March.

NFESC (Naval Facilities Engineering Service Center), 1996. *Navy Installation Restoration Laboratory Quality Assurance Guide (Interim Guidance Document),* February.

Tetra Tech NUS, 1999. *Work Plan for Groundwater Sampling*. Document No. R4707995, September.

USEPA, 1994. *Contract Laboratory Program Nation Functional Guidelines for Organic Data Review.* EPA/540/R-94/012, Office of Solid Waste and Emergency Response, Washington, D.C., February.

FIGURES

No.

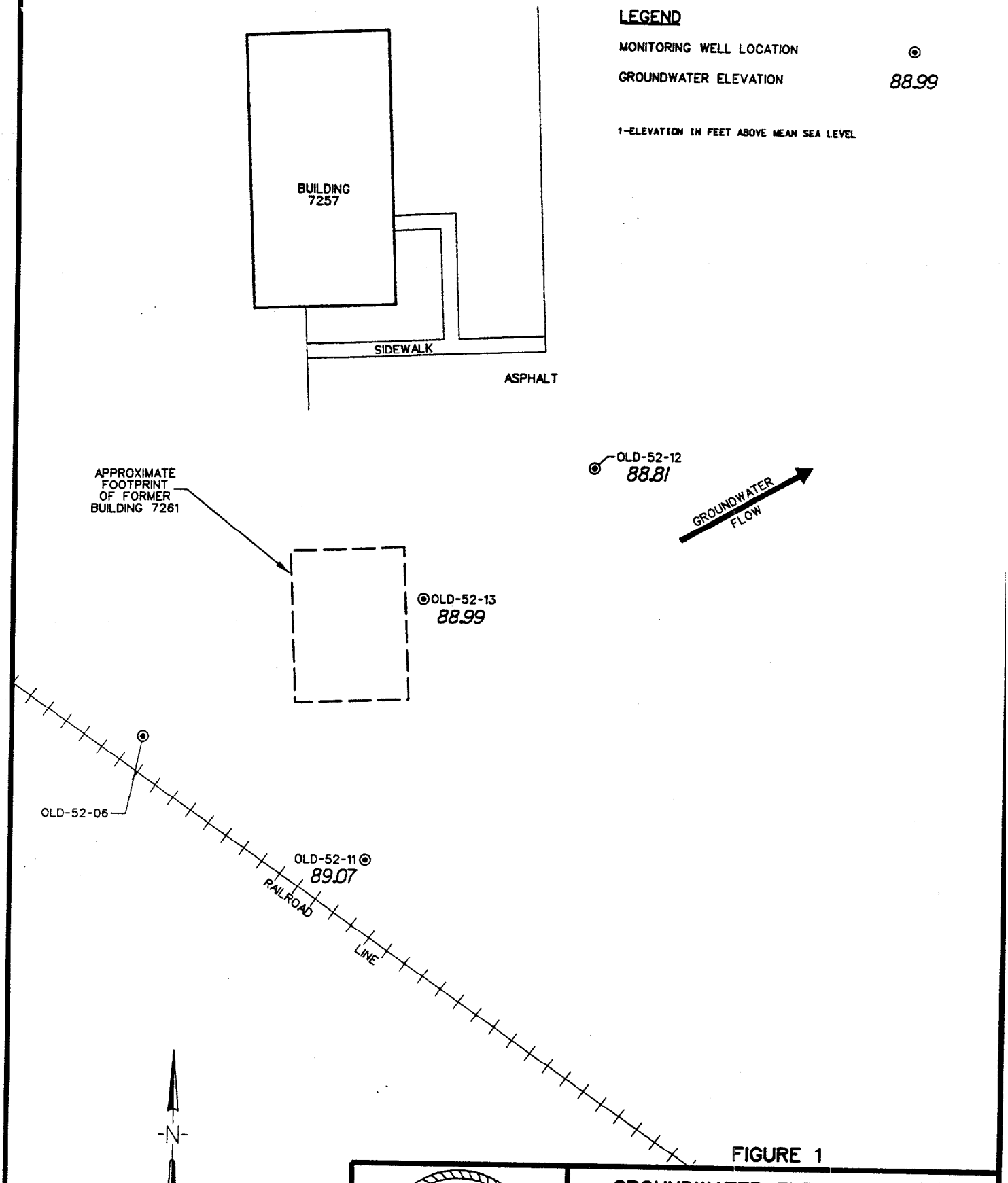

FIGURE 1

GROUNDWATER ELEVATION MAP
OCTOBER 24, 1999
QUARTERLY
GROUNDWATER SAMPLING REPORT
STUDY AREA 52 - McCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

n8-5x11v.dgn

CAD FILE NO./DATE: 74570023.dgn/11-24-99

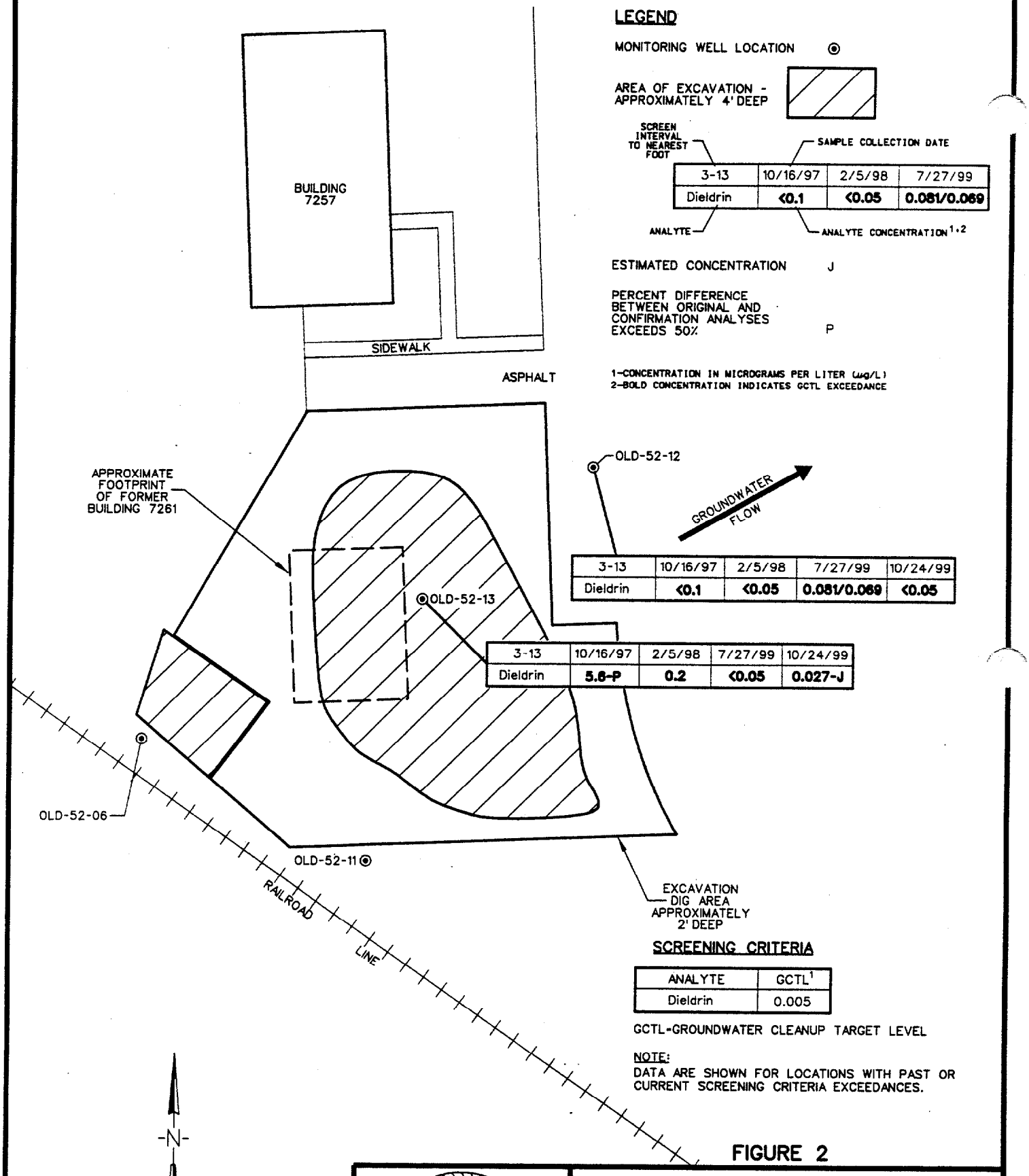

FIGURE 2

GROUNDWATER EXCEEDANCES OCTOBER 1999 QUARTERLY GROUNDWATER SAMPLING REPORT STUDY AREA 52 - McCOY ANNEX

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

n8-5x11v.dgn

CAD FILE NO./DATE: 74570031.dgn/1-7-2000

TABLES

TABLE 1

WATER LEVEL ELEVATIONS SUMMARY
STUDY AREA 52

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Number	Well Type	Screen Interval (BGS)	TOC Elevation (AMSL)	7/18/99		7/27/98		10/24/99	
				Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)
OLD-52-11	½ " μ well	4 - 14	93.14	NM	NM	NM	NM	4.07	89.07
OLD-52-12	2" well	3 - 13	91.73	2.59	89.14	2.89	88.84	2.92	88.81
OLD-52-13	2" well	3 - 13	91.36	3.11	88.25	3.35	88.01	2.37	88.99

Notes:
All measurements are in units of feet.
AMSL - Above mean sea level
BGS - Below ground surface
BTOC - Below top of casing
NM - Not measured
TOC - Top of Casing

TABLE 2

POSITIVE DETECTIONS IN GROUNDWATER
STUDY AREA 52

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Designation	Screening Criteria[a]	OLD-52-11	OLD-52-12	OLD-52-13
Sample ID	Florida GCTL[b]	NTC52G1111	NTC52G1211	NTC52G1311
Lab ID		A9J260203004	A9J260203005	A9J260203003
Sample Date		10/24/99	10/24/99	10/24/99
Pesticides (µg/L)				
Dieldrin	0.005			0.027 J

Notes:

"J" qualifier indictes an estimated value.

Values in shaded cells exceed the screening criteria.

Empty cells indicate non-detects.

(a) For an organic analyte the screening criterion is the GCTL.

(b) Groundwater Cleanup Target Level [Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999].

R4701001

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 52

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Designation	Screening Criteria[a]		OLD-52-01		OLD-52-02		OLD-52-11				OLD-52-12				
Sample ID	Florida	NTC	52G00101	52H00101	52G00201	52H00201	52G01101	52G01102	NTC52G01110	NTC52G1111	52G01201	52G01202	NTC52G01210	NTC52G01210-D	NTC52G1211
Lab ID	GCTL[b]	BGSV[c]	MA801003	MA801004	MA801005	MA801006	S775908*1	A8B060161001	A9G280200003	A9J260203004	S775908*2	A8B060161002	A9G280200002	A9G280200004	A9J260203005
Sample Date			4/23/96	4/23/96	4/23/96	4/23/96	10/16/97	2/5/98	7/27/99	10/24/99	10/16/97	2/5/98	7/27/99	7/27/99	10/24/99
Volatiles (µg/L)				NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	2.7		0.5 J												
Semi-Volatiles (µg/L)				NA		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pesticides (µg/L)				NA		NA									
Dieldrin	0.005		0.11		2.3 D								0.061 J	0.068 J	
Endrin Aldehyde	*								0.03 J					0.018 J	
gamma-Chlordane[d]	2												0.011 J	0.007 J	
Inorganics (µg/L)							NA	NA	NA	NA	NA	NA	NA	NA	NA
Aluminum	200	4067		3920 J	4750 J	8630 J									
Arsenic	50	5				1.4 J									
Cadmium	5	5.6		2.7 J											
Calcium	*	36830	20900	21200	19200	18800									
Chromium	100	7.8		6.7 B	7.1 B	13.7									
Copper	1000	5.4			3.1 B										
Iron	300	1227	79.4 J	251 J	202 J	304 J									
Magnesium	*	4560	627 B	675 B	483 B	469 B									
Manganese	50	17	5.8 B												
Mercury	2	0.12		0.12 J	0.09 J	0.25 J									
Selenium	50	9.7			2.9 B	5.7									
Sodium	160000	18222	2140 J	1970 J	1140 J	1040 J									
Vanadium	49	20.6	4 B	6.1 B	4.5 B	8.2 B									
General Chemistry (mg/L)				NA		NA	NA	NA	NA		NA	NA	NA	NA	
Total Suspended Solids	*				57										

CTO 0024

01/10/00

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 52

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Designation	Screening Criteria[a]		OLD-52-13			
Sample ID	Florida	NTC	52G01301	52G01302	NTC52G01310	NTC52G1311
Lab ID	GCTL[b]	BGSV[c]	S775908*3	A8B060161003	A9G280200001	A9J260203003
Sample Date			10/16/97	2/5/98	7/27/99	10/24/99
Volatiles (µg/L)			NA	NA	NA	NA
Chloromethane	2.7					
Semi-Volatiles (µg/L)			NA	NA	NA	NA
Pesticides (µg/L)						
Dieldrin	0.005		5.6 P	0.2		0.027 J
Endrin Aldehyde	*					
gamma-Chlordane[d]	2					
Inorganics (µg/L)			NA	NA	NA	NA
Aluminum	200	4067				
Arsenic	50	5				
Cadmium	5	5.6				
Calcium	*	36830				
Chromium	100	7.8				
Copper	1000	5.4				
Iron	300	1227				
Magnesium	*	4560				
Manganese	50	17				
Mercury	2	0.12				
Selenium	50	9.7				
Sodium	160000	18222				
Vanadium	49	20.6				
General Chemistry (mg/L)			NA	NA	NA	NA
Total Suspended Solids	*					

Notes:

* indicates that there is no GCTL.
"B" qualifier indicates that reported value is greater than the instrument detection limit but less than the Contract Required Detection Limit (inorganic analytes only).
"D" qualifier indicates the reported value is from a dilution.
"J" qualifier indicates an estimated value.
"P" qualifier indicates a greater than 25% difference in concentration between columns.
NA Not analyzed.
Values in shaded cells exceed the screening criteria.
Empty cells indicate non-detects.
[a] For an organic analyte, the screening criterion is the GCTL; for an inorganic analyte with an established GCTL and BGSV, the screening criterion is the greater of the GCTL or the BGSV.
[b] Groundwater Cleanup Target Level [Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999].
[c] Background Screening Value (Background Sampling Report for NTC, Orlando, Florida; ABB Environmental Services, August 1995) for inorganics only.
[d] Screening criteria substitution – Chl e for gamma-Chlordane.

TABLE 4

VALIDATED GROUNDWATER ANALYTICAL RESULTS - OCTOBER 1999
STUDY AREA 52

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

Well Designation	Screening Criteria[a]		OLD-52-11	OLD-52-12	OLD-52-13
Sample ID	Florida GCTL[b]	CAS Numbers	NTC52G1111	NTC52G1211	NTC52G1311
Lab ID			A9J260203004	A9J260203005	A9J260203003
Sample Date			10/24/99	10/24/99	10/24/99
Pesticides (µg/L)					
4,4'-DDD	0.1	72-54-8	0.05 U	0.05 U	0.05 U
4,4'-DDE	0.1	72-55-9	0.05 U	0.05 U	0.05 U
4,4'-DDT	0.1	50-29-3	0.05 U	0.05 U	0.05 U
Aldrin	0.005	309-00-2	0.05 U	0.05 U	0.05 U
alpha-BHC	0.2	319-84-6	0.05 U	0.05 U	0.05 U
alpha-Chlordane[c]	2	5103-71-9	0.05 U	0.05 U	0.05 U
Beta-BHC	0.02	319-85-7	0.05 U	0.05 U	0.05 U
Delta-BHC	2.1	319-86-8	0.05 U	0.05 U	0.05 U
Dieldrin	0.005	60-57-1	0.05 U	0.05 U	0.027 J
Endosulfan I	42	115-29-7	0.05 U	0.05 U	0.05 U
Endosulfan II[c]	42	33213-65-9	0.05 U	0.05 U	0.05 U
Endosulfan Sulfate	*	1031-07-8	0.05 U	0.05 U	0.05 U
Endrin	2	72-20-8	0.05 UJ	0.05 UJ	0.05 UJ
Endrin Aldehyde	*	7421-93-4	0.05 U	0.05 U	0.05 U
Endrin Ketone	*	53494-70-5	0.05 U	0.05 U	0.05 U
gamma-BHC (Lindane)	0.2	58-89-9	0.05 U	0.05 U	0.05 U
gamma-Chlordane[c]	2	12789-03-6	0.05 U	0.05 U	0.05 U
Heptachlor	0.4	76-44-8	0.05 U	0.05 U	0.05 U
Heptachlor Epoxide	0.2	1024-57-3	0.05 U	0.05 U	0.05 U
Methoxychlor	40	72-43-5	0.1 UJ	0.1 UJ	0.1 UJ
Toxaphene	3	8001-35-2	2 U	2 U	2 U

Notes:

* Indicates that the GCTL is not available.
"J" qualifier indicates an estimated value.
"U" qualifier indicates analyte not detected.
Values in shaded cells exceed screening criteria.
[a] For an organic analyte, the screening criterion is the GCTL.
[b] Groundwater Cleanup Target Level [Development of Soil Cleanup Target Levels (SCTLs) for Chapter 62-777, F.A.C., May 26, 1999].
[c] Screening criteria substitutions - Chlordane for alpha-Chlordane and gamma-Chlordane, and Endosulfan for Endosulfan II.

ATTACHMENT A

GROUNDWATER SAMPLE LOG SHEETS

Date 10-24-99

GROUNDWATER PURGING AND SAMPLING LOG

Page 1 of 1

Project Site Name: NTC Orlando
Project No.: CTO 0024

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

Sample ID No.: NTC52G1111
Sample Location: OLD 5211
Sampled By: Gary Sparks
C.O.C. No.:

PURGING DATA

Casing Size (in.)	Gals/Ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	11:35	5.26	51.00	23.24	758	2.87	62.8	NA	100
2	0.163	11:43	5.19	51.00	22.57	704	.96	43.2		100
3	0.367	11:51	5.27	53.00	22.93	643	.77	31.1		100
4	0.653	12:00	5.37	56.00	22.90	603	.85	30.2		100
5	1.020	12:07	5.47	58.00	23.02	641	1.19	48.0		100
6	1.469	12:15	5.45	60.00	23.17	657	1.02	51.5		100
8	2.611	12:18	5.46	61.00	23.22	664	.99	53.1		100
10	4.080	12:21	5.47	61.00	23.57	677	.98	55.5		100
		12:24	5.49	61.00	23.55	679	.98	56.1		100
		12:27	5.48	61.00	23.44	688	.96	56.8		100
		12:30	5.47	61.00	23.69	695	.97	57.6	↓	100

Adjc if to 100

Well Casing Diameter: 2"
Total Well Depth (TD): 14.3
Static Water Level (WL): 4.07
One Casing Volume(gal/L):

[3.78 L/gal]

Start Purge (hrs): 11:35
End Purge (hrs): 12:30
Total Purge Time (min): 55
Total Vol. Purged (gal/L): 5.5

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: 10-24-99									
Time: 12:30	Dirty	5.47	61.00	23.69	695	.97	57.6	4.09	100

SAMPLE COLLECTION INFORMATION

NA GS

Analysis	Preservative	Container Requirements	Collected
Pesticides		2, Glass Liters	✓

ADDITIONAL INFORMATION

OVA Reading (ppm): 0.0 ppm

Method:
[✓] Peristaltic Pump
[ ] Centrifugal Pump
[ ] Bladder Pump
[ ] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[✓] Teflon
[ ] Teflon-lined Polyethylene

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): Gary Sparks

Turbidity increasing but stable, so sampled.

GROUNDWATER PURGING AND SAMPLING LOG

Date 10-24-99

Page 1 of 1

10:45
9:40

Project Site Name: NTC Orlando
Project No.: CTO 0024

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

Sample ID No.: NTC526121
Sample Location: OLD5212
Sampled By: Gary Sparks
C.O.C. No.:

PURGING DATA

Casing Size (in.)	Gals/Ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	14:14	6.20	283.00	26.76	335	2.77	48.9	2.92	100
2	0.163	14:20	6.21	283.00	26.63	138	~~2.17~~	50.9	2.92	100
3	0.367	14:26	6.28	282.00	27.15	11.00	1.50	64.7	2.92	100
4	0.653	14:24	6.26	282.00	27.18	7.96	1.41	66.2	2.92	100
5	1.020	14:32	6.27	281.00	27.07	5.43	1.24	69.5	2.92	100
6	1.469	14:35	6.27	281.00	27.01	4.17	1.21	70.9	2.92	100
8	2.611	14:38	6.27	281.00	26.97	3.57	1.13	73.5	2.92	100
10	4.080	14:41	6.28	280.00	27.05	2.79	1.07	76.4	2.92	100
		14:44	6.29	280.00	27.20	3.09	1.03	76.7	2.92	100

Well Casing Diameter:	2
Total Well Depth (TD):	13.4
Static Water Level (WL):	2.92
One Casing Volume(gal/L):	
[3.78gals/L]	
Start Purge (hrs):	14:14
End Purge (hrs):	14:44
Total Purge Time (min):	30
Total Vol. Purged (gal/L):	3.0

.1
.05

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date: 10-24-99									
Time: 14:44	clear	6.29	280.00	27.20	3.09	1.03	76.7	2.92	100

6.5-8.5

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
~~Gross Alpha/Gross Beta/Total Uranium/Radium 226~~	~~HNO3 (pH < 2)~~	1 - 1 gal plastic cubitainer	
Pesticides		2 glass Liters	✓

ADDITIONAL INFORMATION

OVA Reading (ppm): 0.0 ppm

Method:
[ ] ~~Peristaltic~~ Pump
[ ] Centrifugal Pump
[ ] Bladder Pump
[ ] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[ ] ~~Teflon~~
[ ] Teflon-lined Polyethylene

Circle if Applicable:

MS/MSD | Duplicate ID No.:

Signature(s): Gary Sparks

GROUNDWATER PURGING AND SAMPLING LOG

Date 10/24/99

Project Site Name: NTC Orlando
Project No.: CTO 0024

Sample ID No.: NTC526-1311
Sample Location: OLD 52 13
Sampled By: J Kriegman
C.O.C. No.:

[ ] Domestic Well Data
[X] Monitoring Well Data
[ ] Other Well Type:

PURGING DATA

Casing Size (in.)	Gals/Ft. of Water	Time Hr:Min	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
1	0.041	0940	7.44	37	20.70	253	5.11	107.1	1.34	100
2	0.163	0945	6.88	36	18.63	136	5.43	125.0	1.34	100
3	0.367	0950	6.20	36	18.52	103.6	5.37	134.8	1.34	100
4	0.653	0955	5.99	35	18.78	82.6	5.26	142.4	1.34	100
5	1.020	1000	5.97	35	18.90	70.3	5.25	143.5	1.34	100
6	1.469	1005	5.89	35	20.32	54.8	5.13	149.3	1.34	100
8	2.611	1010	5.84	35	19.23	46.4	5.12	155.2	1.34	100
10	4.080	1015	5.81	35	18.65	39.0	5.09	159.1	1.34	100
		1020	5.81	35	18.67	36.6	5.06	159.6	1.34	100
		1025	5.80	35	18.53	36.3	4.90	162.1	1.34	100
		1030	5.80	35	18.91	34.6	4.90	163.0	1.34	100
		1035	5.79	35	19.57	31.8	4.88	164.7	1.34	100
Well Casing Diameter: 2"		1040	5.80	35	19.40	30.9	4.84	165.6	1.34	100
Total Well Depth (TD): 13.4		1045	5.79	35	19.61	29.5	4.81	166.2	1.34	100
Static Water Level (WL): 2.37										
One Casing Volume(~~gal~~): 6.8										
[3.78gals/L]										
Start Purge (hrs): 0940										
End Purge (hrs): 1045										
Total Purge Time (min): 65										
Total Vol. Purged (~~gal~~/L): ~~14~~ CRL	6.5									

SAMPLE PARAMETERS

	Color Description	pH pH units	S.C. mS/cm	Temp. °C	Turbidity NTU	DO mg/L	ORP mV	DTW ft BTOC	Flow Rate ml/min
Date 10/24/99									
Time 1045	Clear	5.79	35	19.61	29.5	4.81	166.2	1.34	100

SAMPLE COLLECTION INFORMATION

Analysis	Preservative	Container Requirements	Collected
Gross Alpha/Gross Beta/Total Uranium/Radium 226	HNO3 (pH < 2)	1 - 1 gal plastic cubitainer	
Pesticides 8181		2 1 L Glass	✓

ADDITIONAL INFORMATION

OVA Reading (ppm): 0 PPM

Method:
[X] Peristaltic Pump
[ ] Centrifugal Pump
[ ] Bladder Pump
[ ] Tube Evacuation
[ ] Vacuum Jug Assembly
[ ] Bailer

Tubing Type:
[ ] Polyethylene
[X] Teflon
[ ] Teflon-lined Polyethylene

Circle if Applicable:
MS/MSD | Duplicate ID No.:

Signature(s): J Kriegman