

N65928.AR.001055
NTC ORLANDO
5090.3a

QUARTERLY GROUNDWATER SAMPLING STUDY AREA 52 WITH TRANSMITTAL LETTER
NTC ORLANDO FL
7/7/2000
TETRA TECH



TETRA TECH NUS, INC.

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(865) 483-9900 ■ FAX: (865) 483-2014 ■ www.tetrattech.com

08.04.52.0003

00264

0600-A102

July 7, 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, April 2000
McCoy Annex, NTC, Orlando

Dear Ms. Nwokike:

Enclosed are the results from the quarterly groundwater sampling conducted at SA 52 in April 2000. The results for this and previous sampling events, are summarized in the attached tables and figures. Copies of the field log sheets are included in Attachment A.

The next sampling at SA 52 will be completed in July 2000, and the results will be issued in October 2000. If you have any questions please contact me at (865) 220-4730.

Sincerely,

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 Sangaris, CH2M Hill
Mr. Michael Campbell, Tetra Tech NUS
Mr. Mark Perry, Tetra Tech NUS (unbound)
Ms. Jacque Van Audenhove, Tetra Tech NUS (2)
Ms. Debbie Wroblewski, Tetra Tech NUS (cover letter only)
File/db

GROUNDWATER SAMPLING AT STUDY AREA 52

Trip Dates: April 10 - 19, 2000

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

TO Manager: Steve McCoy

Field Team: Bobby Bobo
Roger Franklin
Bob Knight
Cher Morrison
Greg Sisco

Prepared by: Greg Sisco
Renna Warren

1. PURPOSE

Quarterly groundwater sampling was conducted at Study Area (SA) 52 in April 2000. The fieldwork was performed in accordance with the *Work Plan for Groundwater Sampling* (Tetra Tech NUS, 1999a), and the Project Operations Plan (POP) (ABB-ES, 1997).

2. ACTIVITIES

Tetra Tech NUS, Inc. mobilized to the field on April 10, 2000, to perform quarterly monitoring at SA 2, SA 52, and Operable Unit (OU) 3. Work at SA 52 was performed on April 12, 2000, and included a water level survey and groundwater sampling. Groundwater levels were measured in wells OLD-52-11, OLD-52-12, OLD-52-13, and OLD-52-06 (microwell). Groundwater elevations for this field event and previous events are summarized in Table 1.

Sampling – Three wells at SA 52 were purged and sampled on April 12, 2000. All wells were purged using the low-flow method described in the POP. Purging of the 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 ORP) had stabilized. Water levels in the wells were continuously monitored to ensure that drawdown was less than 0.3 feet. At the lowest pump setting well

OLD-52-11 exceeded the drawdown goal of 0.3 feet with a final level of 1.66 feet below the original water level. Groundwater sample log sheets are included in Attachment A.

Sample Turbidity – Turbidity in wells OLD-52-11 and OLD-52-13 was 616 and 11.2 NTU, respectively, which did not meet the goal of less than 10 NTU. The turbidity readings for the last four 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
01/21/00	800 NTU	<1 NTU	50 NTU
04/12/00	616 NTU	8.63 NTU	11.2 NTU

All groundwater samples were collected using vacuum jug methods to ensure that the sample water did not contact non-Teflon-lined tubing surfaces. Groundwater samples from SA 52 were analyzed for pesticides using USEPA Method 8081A. All samples were placed on ice in coolers and shipped overnight to Severn-Trent Laboratories in North Canton, Ohio, for analysis.

3. PROBLEMS ENCOUNTERED

Other than the problems lowering turbidity in two of the three wells and drawdown greater than 0.3 feet in well OLD-52-11, no problems were encountered at the site during the purging/sampling.

4. RESULTS

Water Level Survey – Groundwater elevation data measured at SA 52 on April 12, 2000, are presented in Table 1 and on Figure 1. Current water level data are consistent with the northeasterly groundwater flow direction presented in the SA 52 Environmental Site Screening Report (HLA, 1999) and the previous quarterly sampling reports (Tetra Tech NUS, 1999b, 2000a and 2000b).

Data Validation – Qualification of the data was performed using the *USEPA Contract Laboratory Program: National Functional Guidelines for Organic Data Review* (USEPA, 1999). 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. The sample from well OLD-52-11 was rejected

because surrogate recovery was not within acceptable limits. Qualifiers resulting from the validation process are shown with the analyte concentrations in Tables 2, 3, and 4.

Analytical Results – Table 2 presents a summary of the groundwater positive detections for SA 52 for the April 2000 monitoring event. The historical groundwater data are presented in Table 3. A complete listing of the validated analytical data for April 2000 is included as Table 4. Shaded cells indicate concentrations equal to or greater than Florida Groundwater Cleanup Target Levels (GCTLs). The distribution of pesticides detected above the GCTLs is shown on Figure 2.

Analytical results for well OLD-52-11 were rejected, however, no pesticides have ever been detected above GCTLs in this well. Analytical laboratory results from groundwater collected from monitoring well OLD-52-12 did not indicate the presence of any pesticides. This is the third consecutive quarter that pesticides were not detected in this well. Groundwater from monitoring well OLD-52-13 contained one pesticide (dieldrin) of the 21 pesticide compounds analyzed. The dieldrin concentration of 0.43 $\mu\text{g/L}$ was above its Florida GCTL (0.005 $\mu\text{g/L}$).

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.

Tetra Tech NUS, Inc., 1999a. *Work Plan for Groundwater Sampling*. Document No. R4707995, November 9, 1999.

Tetra Tech NUS, Inc., 1999b. *Groundwater Sampling at Study Area 52*. Document No. R471991, November 23, 1999.

Tetra Tech NUS, Inc., 2000a. *Groundwater Sampling at Study Area 52*. Document No. R4701001, January 10, 2000.

Tetra Tech NUS, Inc., 2000b. *Groundwater Sampling at Study Area 52*. Document No. R4705013, May 16, 2000.

USEPA, 1999. *Contract Laboratory Program: National Functional Guidelines for Organic Data Review*. EPA/540/R-99/008, Office of Solid Waste and Emergency Response, Washington, D.C., October.

FIGURES

No.

- 1 Groundwater Elevation Map, April 12, 2000
- 2 Groundwater Exceedances, April 2000

LEGEND

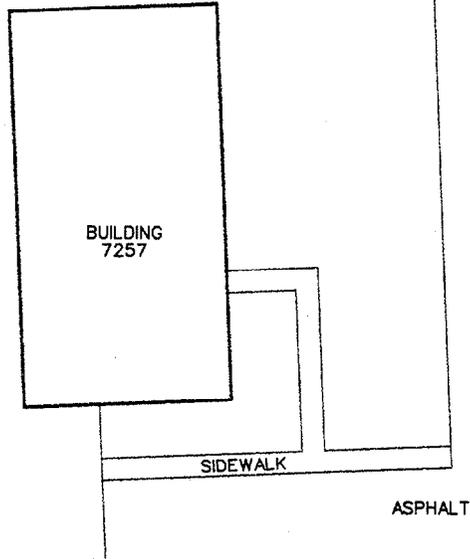
MONITORING WELL LOCATION



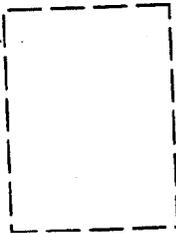
GROUNDWATER ELEVATION

86.44

1-ELEVATION IN FEET ABOVE MEAN SEA LEVEL



APPROXIMATE
FOOTPRINT
OF FORMER
BUILDING 7261



● OLD-52-13
86.41

○ OLD-52-12
86.33



○ OLD-52-06
86.72

● OLD-52-11
86.44

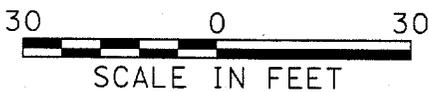
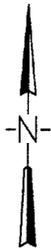
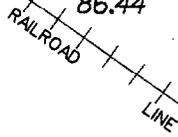
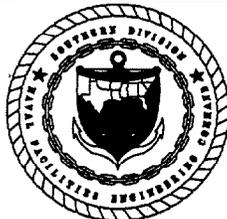


FIGURE 1



**GROUNDWATER ELEVATION MAP
APRIL 12, 2000
QUARTERLY MONITORING REPORT
STUDY AREA 52 - McCOY ANNEX**

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

LEGEND

MONITORING WELL LOCATION

AREA OF EXCAVATION - APPROXIMATELY 4' DEEP

SCREEN INTERVAL TO NEAREST FOOT

SAMPLE COLLECTION DATE

3-13	10/16/97	2/5/98	7/27/99
Dieldrin	<0.1	<0.05	0.061/0.069

ANALYTE

DUPLICATE SAMPLE

ANALYTE CONCENTRATION 1+2

ESTIMATED CONCENTRATION J

1-CONCENTRATION IN MICROGRAMS PER LITER (µg/L.)
2-BOLD CONCENTRATION INDICATES GCTL EXCEEDANCE

APPROXIMATE FOOTPRINT OF FORMER BUILDING 7261

BUILDING 7257

SIDEWALK

ASPHALT

GROUNDWATER FLOW

OLD-52-12

3-13	2/5/98	7/27/99	10/24/99	1/21/00	4/12/00
Dieldrin	<0.05	0.081/0.089	<0.05	<0.05	<0.05/<0.05

ASPHALT

OLD-52-13

3-13	2/5/98	7/27/99	10/24/99	1/21/00	4/12/00
4,4'-DDD	<0.05	<0.05	<0.05	0.28-J	<1
Aldrin	<0.05	<0.05	<0.05	0.021-J	<1
Dieldrin	0.2	<0.05	0.027-J	0.19	0.43-J

OLD-52-06

OLD-52-11

EXCAVATION DIG AREA APPROXIMATELY 2' DEEP

RAILROAD LINE

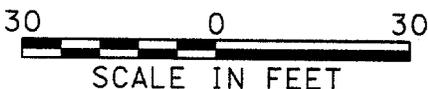
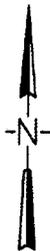
SCREENING CRITERIA

ANALYTE	GCTL ¹
4,4'-DDD	0.1
Aldrin	0.005
Dieldrin	0.005

GCTL-GROUNDWATER CLEANUP TARGET LEVEL

NOTE:
DATA ARE SHOWN FOR LOCATIONS WITH PAST OR CURRENT SCREENING CRITERIA EXCEEDANCES.

FIGURE 2



**GROUNDWATER EXCEEDANCES
APRIL 2000
QUARTERLY MONITORING REPORT
STUDY AREA 52 - McCOY ANNEX**

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

TABLES

No.

- 1 Water-Level Elevations Summary
- 2 Positive Detections in Groundwater – April 2000
- 3 Historical Detections In Groundwater
- 4 Validated Groundwater Analytical Results – April 2000

TABLE 1

**WATER-LEVEL ELEVATIONS SUMMARY
STUDY AREA 52**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

PAGE 1 OF 1

Well	Well Type	Screen Interval (BGS)	TOC Elevation (AMSL)	7/27/99		10/24/99		1/21/00		4/12/00	
				Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)	Depth to Water (BTOC)	Groundwater Elevation (AMSL)
OLD-52-06	0.5" well	6 - 10	94.22	NM	NM	NM	NM	6.39	87.83	7.50	86.72
OLD-52-11	2" well	4 - 14	93.14	NM	NM	4.07	89.07	5.70	87.44	6.70	86.44
OLD-52-12	2" well	3 - 13	91.73	2.89	88.84	2.92	88.81	4.42	87.31	5.40	86.33
OLD-52-13	2" well	3 - 13	91.36	3.35	88.01	2.37	88.99	3.95	87.41	4.95	86.41

Notes:

AMSL - Above mean sea level

BGS - Below ground surface

BTOC - Below top of casing

NM - Not measured

TOC - Top of casing

*All measurements are in units of feet.

TABLE 2

**POSITIVE DETECTIONS IN GROUNDWATER- APRIL 2000
STUDY AREA 52**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

PAGE 1 OF 1

WELL DESIGNATION	CAS Number	Florida GCTL ^(a)	OLD-52-11	OLD-52-12		OLD-52-13
SAMPLE ID					NTC52G01113	NTC52G01213
LAB ID			A0D130261012	A0D130261013	A0D130261015	A0D130261014
SAMPLE DATE			4/12/00	4/12/00	4/12/00	4/12/00
Pesticides ($\mu\text{g/L}$)						
Dieldrin	60-57-1	0.005				0.43 J

^(a)Groundwater Cleanup Target Level [Development of Soil Cleanup Target Levels (SCTLs)

for Chapter 62-777, F.A.C., May 26, 1999]

Empty cells indicate non-detects.

"J" - qualifier indicates an estimated concentration.

Only chemicals detected in at least one sample are shown.

Values in shaded cells are equal to or exceed the GCTL.

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 52

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

PAGE 1 OF 3

Well Designation	Florida GCTL ^(a)	OLD-52-11					
Sample ID		52G01101	52G01102	NTC52G01110	NTC52G1111	NTC52G01112	NTC52G01113
Lab ID		S775908*1	A8B060161001	A9G280200003	A9J260203004	A0A240127002	A0D130261012
Sample Date		10/16/97	2/5/98	7/27/99	10/24/99	1/21/00	4/12/00
Pesticides (mg/L)							
4,4'-DDD	0.1						
Aldrin	0.005						
alpha-Chlordane ^(b)	2						
Dieldrin	0.005						
Endosulfan I	42						
Endrin Aldehyde	*			0.03J			
gamma-Chlordane ^(b)	2						
Heptachlor Epoxide	0.2						

R47060020

CTO 0024

07/07/00

TABLE 3

HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 52

NAVAL TRAINING CENTER
ORLANDO, FLORIDA

PAGE 2 OF 3

Well Designation	Florida GCTL ^(a)	OLD-52-12							
		52G01201	52G01202	NTC52G01210	NTC52G01210-D	NTC52G1211	NTC52G01212	NTC52G01213	NTC52G01213-D
Sample ID		S775908*3	A8B060161003	A9G280200002	A9G280200004	A9J260203005	A0A240127003	A0D130261013	A0D130261015
Lab ID									
Sample Date		10/16/97	2/5/98	7/27/99	7/27/99	10/24/99	1/21/00	4/12/00	4/12/00
Pesticides (mg/L)									
4,4'-DDD	0.1								
Aldrin	0.005								
alpha-Chlordane ^(b)	2								
Dieldrin	0.005			0.081	0.069				
Endosulfan I	42								
Endrin Aldehyde	*				0.018J				
gamma-Chlordane ^(b)	2			0.011J	0.007J				
Heptachlor Epoxide	0.2								

R47060020

CTO 0024

07/07/00

TABLE 3

**HISTORICAL DETECTIONS IN GROUNDWATER
STUDY AREA 52**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

PAGE 3 OF 3

Well Designation	Florida GCTL ^(a)	OLD-52-13					
Sample ID		52G01301	52G01302	NTC52G01310	NTC52G1311	NTC52G01312	NTC52G01313
Lab ID		S775908*3	A8B060161003	A9G280200001	A9J260203003	A0A240127004	A0D130261014
Sample Date		10/16/97	2/5/98	7/27/99	10/24/99	1/21/00	4/12/00
Pesticides (mg/L)							
4,4'-DDD	0.1					0.28 J	
Aldrin	0.005					0.021 J	
alpha-Chlordane ^(b)	2					0.044 J	
Dieldrin	0.005	5.6 P	0.2		0.027 J	0.19	0.43 J
Endosulfan I	42					0.032 J	
Endrin Aldehyde	*						
gamma-Chlordane ^(b)	2						
Heptachlor Epoxide	0.2					0.044 J	

Footnotes:

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

^(b) GCTL substitution: Chlordane for alpha- and gamma-Chlordane.

Empty cells indicate non-detects.

"J" qualifier indicates an estimated value.

Only chemicals detected in at least one sample are shown.

"P" qualifier indicates a greater than 25% difference in concentration between columns.

Values in shaded cells are equal to or exceed the GCTL.

* Indicates that the GCTL is not available.

TABLE 4

**VALIDATED GROUNDWATER ANALYTICAL RESULTS - APRIL 2000
STUDY AREA 52**

**NAVAL TRAINING CENTER
ORLANDO, FLORIDA**

PAGE 1 OF 1

WELL DESIGNATION	CAS Number	Screening Criteria	OLD-52-11	OLD-52-12		OLD-52-13
SAMPLE ID			NTC52G01113	NTC52G01213	NTC52G01213-D	NTC52G01313
LAB ID			A0D130261012	A0D130261013	A0D130261015	A0D130261014
SAMPLE DATE		Florida GCTL ^(a)	4/12/00	4/12/00	4/12/00	4/12/00
Pesticides ($\mu\text{g/L}$)						
4,4'-DDD	72-54-8	0.1	0.05 UR	0.05 U	0.05 U	1 U
4,4'-DDE	72-55-9	0.1	0.05 UR	0.05 U	0.05 U	1 U
4,4'-DDT	50-29-3	0.1	0.05 UR	0.05 U	0.05 U	1 UJ
Aldrin	309-00-2	0.005	0.05 UR	0.05 U	0.05 U	1 U
alpha-BHC	319-84-6	0.2	0.05 UR	0.05 U	0.05 U	1 U
alpha-Chlordane ^(b)	5103-71-9	2	0.05 UR	0.05 U	0.05 U	1 U
beta-BHC	319-85-7	0.02	0.05 UR	0.05 U	0.05 U	1 U
Delta-BHC	319-86-8	2.1	0.05 UR	0.05 U	0.05 U	1 U
Dieldrin	60-57-1	0.005	0.05 UR	0.05 U	0.05 U	0.43 J
Endosulfan I	959-98-8	42	0.05 UR	0.05 U	0.05 U	1 U
Endosulfan II ^(b)	33213-65-9	42	0.05 UR	0.05 U	0.05 U	1 U
Endosulfan Sulfate	1031-07-8	*	0.05 UR	0.05 U	0.05 U	1 U
Endrin	72-20-8	2	0.05 UR	0.05 U	0.05 U	1 U
Endrin Aldehyde	7421-93-4	*	0.05 UR	0.05 U	0.05 U	1 U
Endrin Ketone	53494-70-5	*	0.05 UR	0.05 U	0.05 U	1 U
gamma-BHC (Lindane)	58-89-9	0.2	0.05 UR	0.05 U	0.05 U	1 U
gamma-Chlordane ^(b)	5103-74-2	2	0.05 UR	0.05 U	0.05 U	0.63 R
Heptachlor	76-44-8	0.4	0.05 UR	0.05 U	0.05 U	1 U
Heptachlor Epoxide	1024-57-3	0.2	0.05 UR	0.05 U	0.05 U	1 U
Methoxychlor	72-43-5	40	0.1 UR	0.1 U	0.1 U	0.87 R
Toxaphene	8001-35-2	3	2 UR	2 U	2 U	40 U

Notes:

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

^(b) GCTL substitutions: Chlordane for alpha-Chlordane and gamma-Chlordane; and Endosulfan I for Endosulfan II.

* Indicates that the GCTL is not available.

"J" qualifier indicates an estimated value.

"U" qualifier indicates analyte not detected.

"R" qualifier indicates that the data were rejected.

Values in shaded cells are equal to or exceed the GCTL.

ATTACHMENT A
GROUNDWATER SAMPLE LOG SHEETS

Date 4/12/00

Groundwater Purging and Sampling Log
Tetra Tech NUS

Project Site Name: NTC Orlando
Project No.: 74571

SA52
Sample Location: OLD-52-11

Domestic Well Data

Flow-Thru Cell

Sample ID No.: NTC52601113

Monitoring Well Data

Make/Model: HORIBA U-22

Sampled By: BK

Serial Nos. 9272097/927121

Other Well Type: _____

C-O-C No.: _____

PURGING DATA

Casing Size (in.)	Gals. per ft. of Water	Liters per 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
0.5	0.01	0.038	1340	5.17	5.00	24.3	407	2.10	-2	7.2	95
1	0.041	0.155	1345	5.18	5.00	24.5	443	0.27	-4	7.25	75
<u>2</u>	<u>0.163</u>	<u>0.617</u>	<u>1350</u>	<u>5.18</u>	<u>5.00</u>	<u>24.9</u>	<u>456</u>	<u>0.18</u>	<u>-5</u>	<u>7.30</u>	<u>50</u>
4	0.653	2.47	1355	5.19	5.00	25.2	402	0.15	-9	7.50	60
6	1.469	5.56	1400	5.17	5.00	25.4	497	0.10	-8	7.63	45 on LOS
8	2.611	9.88	1405	5.10	5.00	25.5	512	0.12	-10	7.77	50 on LOS
10	4.08	15.44	1410	5.19	5.00	25.5	522	0.10	-11	7.95	60
	[1 gal. = 3.785 L]		1415	5.17	5.00	25.0	528	0.13	-11	8.03	75
			1420	5.19	5.00	25.8	555	0.14	-13	8.10	100
PID Reading (ppm):			1425	5.17	5.00	25.9	579	0.13	-13	8.22	50
			1430	5.19	5.00	26.0	597	0.11	-14	8.38	75
			1435	5.16	5.00	26.2	616	0.10	-14	8.36	40
Well Casing Diameter:	<u>2"</u>										
Total Well Depth:	<u>14.0</u>										
Static Water Level:	<u>6.7</u> to <u>4/12/00</u>										
Tube Intake Depth:	<u>8</u>										
Start Purge (hr):	<u>1332</u>										
End Purge (hr):	<u>1437</u>										
Total Purge Time (min):	<u>105</u>										
Total Vol. Purged:	<u>4.25 L</u>										

WATER QUALITY SAMPLE PARAMETERS

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	DTW	Flow Rate
Description	pH units	mS/cm	°C	NTU	mg/L	mV	ft BTOC	ml/min	
Date: <u>4/12/00</u>									
Time: <u>1435</u>	<u>brown</u>	<u>5.10</u>	<u>5.00</u>	<u>26.2</u>	<u>610</u>	<u>0.10</u>	<u>-14</u>	<u>8.30</u>	<u>40</u>

ANALYSES INFORMATION

Analysis	Preservative	Container Requirements	Collected
TCL VOCs	8260B	HCl 3 40 ml glass vials	
SVOCs/PAHs	8270C/8310	None 2 1-liter amber glass	
Pesticides	8081A	None 1 1-liter amber glass	<input checked="" type="checkbox"/>
Herbicides	8151	None 1 1-liter amber glass	
X-tra Organic	8XXX	None 1 or 2 1-liter amber glass	<input checked="" type="checkbox"/>
TAL Metals	6000/7000	HNO ₃ 1 1-liter HDPE	
Antimony	6010B	HNO ₃ 1 0.5-liter HDPE	

ADDITIONAL INFORMATION

Comments: _____

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

Tubing Type:
 Polyethylene
 Teflon
 Teflon-lined Polyethylene

QA/QC SAMPLES

MS/MSD: _____ Duplicate ID No.: _____

Signature(s): Chris Martin
Robert D. Knight

Groundwater Purging and Sampling Log

Tetra Tech NUS

Date 4/12/00

Page 1 of 1

Project Site Name: NTC Orlando
 Project No.: 74571

Sample Location: OLD-52-12

Domestic Well Data

Flow-Thru Cell

Sample ID No.: NTC 52 G-01213

Monitoring Well Data

Make/Model: HORIBA U-22

Sampled By: R. F.

Other Well Type: _____

Serial Nos.: _____

C-O-C No.: _____

PURGING DATA

Casing Size (in.)	Gals. per ft. of Water	Liters	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
0.5	0.01	0.038	1356	5.84	0.203	27.8	7.28	1.9	-59	5.42	100
1	0.041	0.155	1405	5.99	0.201	28.2	8.12	1.78	-55	5.42	100
2	0.163	0.617	1415	6.38	0.202	28.2	7.99	1.44	-54	5.42	100
4	0.653	2.47	1425	6.40	0.200	28.5	8.15	1.41	-56	5.42	100
6	1.469	5.56	1435	6.47	0.199	28.3	8.05	1.18	-56	5.42	100
8	2.611	9.88	1445	6.36	0.196	27.7	7.71	0.93	-66	5.42	100
10	4.08	15.44	1455	6.37	0.194	27.6	8.63	0.89	-69	5.42	100
[1 gal. = 3.785 L]											

PID Reading (ppm):

Well Casing Diameter: 2"

Total Well Depth: 13'

Static Water Level: 5.4'

Tube Intake Depth: 9'

Start Purge (hr): 1341

End Purge (hr): 1455

Total Purge Time (min): 74

Total Vol. Purged:

WATER QUALITY SAMPLE PARAMETERS

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	DTW	Flow Rate
Description	pH units	mS/cm	°C	NTU	mg/L	mV	ft BTOC	ml/min	
Date: <u>4/12/00</u> Time: <u>1500</u>	<u>Clear</u>	<u>6.37</u>	<u>0.194</u>	<u>27.6</u>	<u>8.63</u>	<u>0.89</u>	<u>-69</u>	<u>5.42</u>	<u>100</u>

ANALYSES INFORMATION

Analysis	Preservative	Container Requirements	Collected
TCL VOCs	HCl	3 40 ml glass vials	
SVOCs/PAHs	None	2 1-liter amber glass	
Pesticides	None	1 1-liter amber glass	X
Herbicides	None	1 1-liter amber glass	
X-tra Organic	None	1 or 2 1-liter amber glass	X
TAL Metals	HNO ₃	1 1-liter HDPE	
Antimony	HNO ₃	1 0.5-liter HDPE	

ADDITIONAL INFORMATION

Comments:

Method:

Tubing Type:

Peristaltic Pump

Polyethylene

Centrifugal Pump

Teflon

Bladder Pump

Teflon-lined Polyethylene

Tube Evacuation

Vacuum Jug Assembly

Bailer

QA/QC SAMPLES

MS/MSD:

Duplicate ID No.:

Signature(s):

NTC 5201402

Groundwater Purging and Sampling Log

Tetra Tech NUS

Date 04/20/00

Page 1 of 1

Project Site Name: NTC Orlando

Project No.: 74571

Sample Location: 52 MW 13

Domestic Well Data

Flow-Thru Cell

Sample ID No.: NTC 601313

Monitoring Well Data

Make/Model: HORIBA U-22

Sampled By: BRB

Other Well Type: _____

Serial Nos.: _____

C-O-C No.: _____

PURGING DATA

Casing Size (in.)	Gals. per ft. of Water	Liters	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
0.5	0.01	0.038	1350	5.97	9	26.3	12.5	0.39	46	4.95	100
1	0.041	0.155	1400	5.92	8	26.2	13.8	0.94	46	4.97	100
2	0.163	0.617	1410	5.90	8	26.1	13.8	0.85	47	4.98	100
4	0.653	2.47	1420	5.88	8	25.9	11.7	0.72	50	4.97	100
6	1.469	5.56	1430	5.88	9	26.2	11.7	0.70	53	4.98	100
8	2.611	9.88	1440	5.87	9	26.1	11.4	0.66	57	4.97	100
10	4.08	15.44	1450	5.87	9	26.1	11.2	0.68	57	4.97	100
[1 gal. = 3.785 L]											
PID Reading (ppm): <u>0</u>											
Well Casing Diameter: <u>2"</u>											
Total Well Depth: <u>13</u>											
Static Water Level: <u>4.95</u>											
Tube Intake Depth: <u>8</u>											
Start Purge (hr): <u>1340</u>											
End Purge (hr): <u>1450</u>											
Total Purge Time (min): <u>60</u>											
Total Vol. Purged: <u>2 gal</u>											

WATER QUALITY SAMPLE PARAMETERS

Date:	Color	pH	S.C.	Temp.	Turbidity	DO	ORP	DTW	Flow Rate
Description	pH units	mS/cm	°C	NTU	mg/L	mV	ft BTOC	ml/min	
Date: <u>04/20/00</u>									
Time: <u>1500</u>	<u>clear</u>	<u>5.87</u>	<u>9</u>	<u>26.1</u>	<u>11.2</u>	<u>0.68</u>	<u>57</u>	<u>4.97</u>	<u>N/A</u>

ANALYSES INFORMATION

Analysis	Preservative	Container Requirements	Collected
TCL VOCs	8260B	HCl 3 40 ml glass vials	
SVOCs/PAHs	8270C/8310	None 2 1-liter amber glass	
Pesticides	8081A	None 1 1-liter amber glass	X
Herbicides	8151	None 1 1-liter amber glass	
X-tra Organic	8XXX	None 1 or 2 1-liter amber glass	X
TAL Metals	6000/7000	HNO ₃ 1 1-liter HDPE	
Antimony	6010B	HNO ₃ 1 0.5-liter HDPE	

ADDITIONAL INFORMATION

<p>Comments:</p>	<p>Method:</p> <p><input checked="" type="checkbox"/> Peristaltic Pump</p> <p><input type="checkbox"/> Centrifugal Pump</p> <p><input type="checkbox"/> Bladder Pump</p> <p><input type="checkbox"/> Tube Evacuation</p> <p><input checked="" type="checkbox"/> Vacuum Jug Assembly</p> <p><input type="checkbox"/> Bailor</p>
<p>Tubing Type:</p> <p><input type="checkbox"/> Polyethylene</p> <p><input type="checkbox"/> Teflon</p> <p><input checked="" type="checkbox"/> Teflon-lined Polyethylene</p>	

QA/QC SAMPLES

MS/MSD:	Duplicate ID No.:	Signature(s):
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