

**SITE IR-1/21 INDUSTRIAL LANDFILL
GROUNDWATER EXTRACTION SYSTEM
HUNTERS POINT NAVAL SHIPYARD
NOVEMBER 2001 MONTHLY REPORT**

**Environmental Remedial Action
Contract Number N62474-98-D-2076
Contract Task Order 0082**

**Document Control Number 3055
Revision 0**

December 5, 2001

Submitted to:

**U. S. Department of the Navy
Southwest Division
Naval Facilities Engineering Command
Environmental Division
1220 Pacific Highway
San Diego, California 92132-5190**

Submitted by:

**IT Corporation
4005 Port Chicago Highway
Concord, California 94520-1120**



IT CORPORATION
A Member of The IT Group

IT TRANSMITTAL/DELIVERABLE RECEIPT

CONTRACT : N62474-98-D-2076

DOCUMENT CONTROL NUMBER : 3055.0

TO: Administrative Contract Officer
 Navy Regional Environmental Contracts
 NAVFACENCOM-SWDIV
 Michelle Crook, 02R1.MC
 1230 Columbia St., Suite 1100
 San Diego, CA 92101

Date : December 04, 2001

CTO : 0082

Location: Hunter's Point Shipyard

FROM:

Bol / M. Cet For

 Karnig Ohannessian
 Project Manager

DESCRIPTION *Site IR-1/21 Industrial Landfill Groundwater Extraction System, Hunters Point Naval Shipyard*
OF *November 2001 Monthly Report, Dated December 5, 2001*

ENCLOSURE :

TYPE : CTO Deliverable

VERSION : Final

REVISION No : 0

ADMIN RECORD : Yes

SCHEDULED DELIVERY DATE December 05, 2001

ACTUAL DELIVERY DATE December 04, 2001

NUMBER OF COPIES SUBMITTED TO THE NAVY: 1/O, 5/C, 8/E
 [AS REQUIRED/DIRECTED BY THE SOW]

COPIES TO :

SWDIV

IT CORPORATION

Other

Basic Contract Files, 02R1 (10/1E)
 Pat Brooks, (1C/1E)
 David DeMars, 06CH.DD (1C/1E)
 William Radzewich, N/A (1C/1E)
 Diane Silva, 4MGDS (1C/3E)
 Andy Uehisa, 1025.AU (1C/1E)

Chron
 IT Project File, Concord (1C/1E)
 Concord Library, Concord (1C/1E)
 Karnig Ohannessian, Irvine (1C/1E)
 Benjamin Porter, Concord (1C/1E)

Date/Time Received _____ / _____

Table of Contents

List of Appendices.....	i
1.0 Introduction.....	1-1
2.0 Summary of Field Activities	2-1
2.1 Operation and Maintenance.....	2-1
2.2 Field Data	2-1
2.2.1 Groundwater Level Measurements	2-1
2.2.2 Groundwater Extraction System Measurements.....	2-2
2.2.3 Rectifier Inspection	2-2
3.0 References.....	3-1

List of Appendices

Appendix A	Groundwater Level Measurements and Map of the Potentiometric Surface
Appendix B	Extraction Well and System Readings
Appendix C	Rectifier Inspection Record

1.0 Introduction

This monthly report was prepared by IT Corporation (IT) on behalf of the U.S. Navy under Contract No. N62474-98-D-2076, Contract Task Order 0082 to document activities associated with the operation and maintenance (O&M) of the groundwater extraction system (GES) at Hunters Point Shipyard, Site IR-1/21 Industrial Landfill. This report includes a summary of activities from October 15, 2001 through November 14, 2001.

The objective of the GES is to prevent mounding of the groundwater behind a containment wall at a limited portion of the landfill, thereby reducing the potential for migration of groundwater, which contains landfill constituents, into the San Francisco Bay. The GES collects groundwater from seven extraction wells and one extraction trench, and discharges the groundwater into the City and County of San Francisco sanitary sewer. The GES works in conjunction with a downgradient sheet pile containment barrier to prevent groundwater mounding and subsequent flow around the containment barrier. The installation of the containment barrier was completed in December 1997, and the GES began operations in February 1999 (IT, 1999). A cathodic protection system, commissioned in June 1999, protects the sheet pile barrier from corrosion.

Operation of the GES and scheduled monitoring events are conducted in accordance with the Operation and Maintenance Manual (IT, 2000) and with the City and County of San Francisco Industrial Wastewater Discharger Class I Permit No. 98-0301. This permit was issued on December 14, 1998, and expires on December 14, 2001.

2.0 Summary of Field Activities

Field activities performed during this reporting period of October 15, 2001 through November 14, 2001 included various O&M activities and the collection of field data. The field data collected included groundwater levels, pressure and flow readings throughout the system, and voltage and amperage readings at the cathodic protection system rectifiers.

2.1 Operation and Maintenance

Based on an evaluation of the GES that was performed on November 14, 2001, the system needs the following repairs. These repairs will be performed during the week of November 25:

- The EW-122 groundwater sensors that are not working properly will be replaced.
- The EW- 134 box, which was flooded, will be repaired.
- EW-146, which can not be turned on or off, will be repaired.

2.2 Field Data

Data collected during this period to support O&M of the GES and cathodic protection system include the following:

- Groundwater levels were measured at the extraction wells, monitoring wells, and piezometers.
- Pressure and flow readings were recorded at the extraction wells and at the collection and monitoring pad.
- Voltage and amperage readings were recorded at the cathodic protection system rectifiers.

These readings and results are included as Appendices A, B, and C. These data are used to monitor the performance of the system.

2.2.1 Groundwater Level Measurements

During this reporting period, water levels were measured at the extraction wells, monitoring wells, and piezometers on November 14, 2001. Depth to groundwater was measured to the nearest 0.01 foot. These measurements are provided in Appendix A. Also included in Appendix A are the groundwater elevations associated with the groundwater level measurements and a map of the potentiometric surface.

2.2.2 Groundwater Extraction System Measurements

Pressure and flow readings were taken at the extraction wells on November 14, 2001. These measurements are provided in Appendix B. The total flow for the 30-day discharge period from October 15 through November 14, 2001 was 370,048 gallons, with an average flow rate of 8.57 gallons per minute. The total flow was calculated by adding the flows at each extraction well. The accuracy of this flow reading was confirmed by the monthly flow reading at the discharge pipe. The flow reading at the discharge pipe was 385,623 gallons, which is 4.2 percent larger than the total from the extraction wells. This deviation is within the 10 percent accuracy range specified by the permit (No. 98-0301).

2.2.3 Rectifier Inspection

The rectifiers were inspected on November 14, 2001. A record of this inspection is provided in Appendix C. The output at Rectifier 1 was 10 volts and 41.0 amperes (amps). The output at Rectifier 2 was 16 volts and 41.0 amps.

3.0 References

IT Corporation, 2000, *Operation and Maintenance Manual, Groundwater Extraction System/Containment Barrier, Site IR-1/21 Industrial Landfill, Hunters Point Shipyard, San Francisco, California, Delivery Order #0083, Revision 0, Concord, California.*

IT Corporation, 1999, *Contractor Quality Control Plan, Environmental Protection Plan, Sampling and Analysis Plan, Health and Safety Plan, Long Term Groundwater Extraction and Monitoring, Site IR-1/21 Industrial Landfill, Hunters Point Shipyard, San Francisco, California, Delivery Order #0083, Revision 0, Martinez, California.*

**APPENDIX A
GROUNDWATER LEVEL MEASUREMENTS AND
MAP OF THE POTENTIOMETRIC SURFACE**

Monthly Monitoring Well, Extraction Well, and Piezometer Water Levels
Contract No. N62474-98-D-2076
Contract Task Order 0082
Hunters Point Shipyard, Site IR-1/21 Industrial Landfill
U. S. Navy Southwest Division

IT Corporation
 Project No. 831667

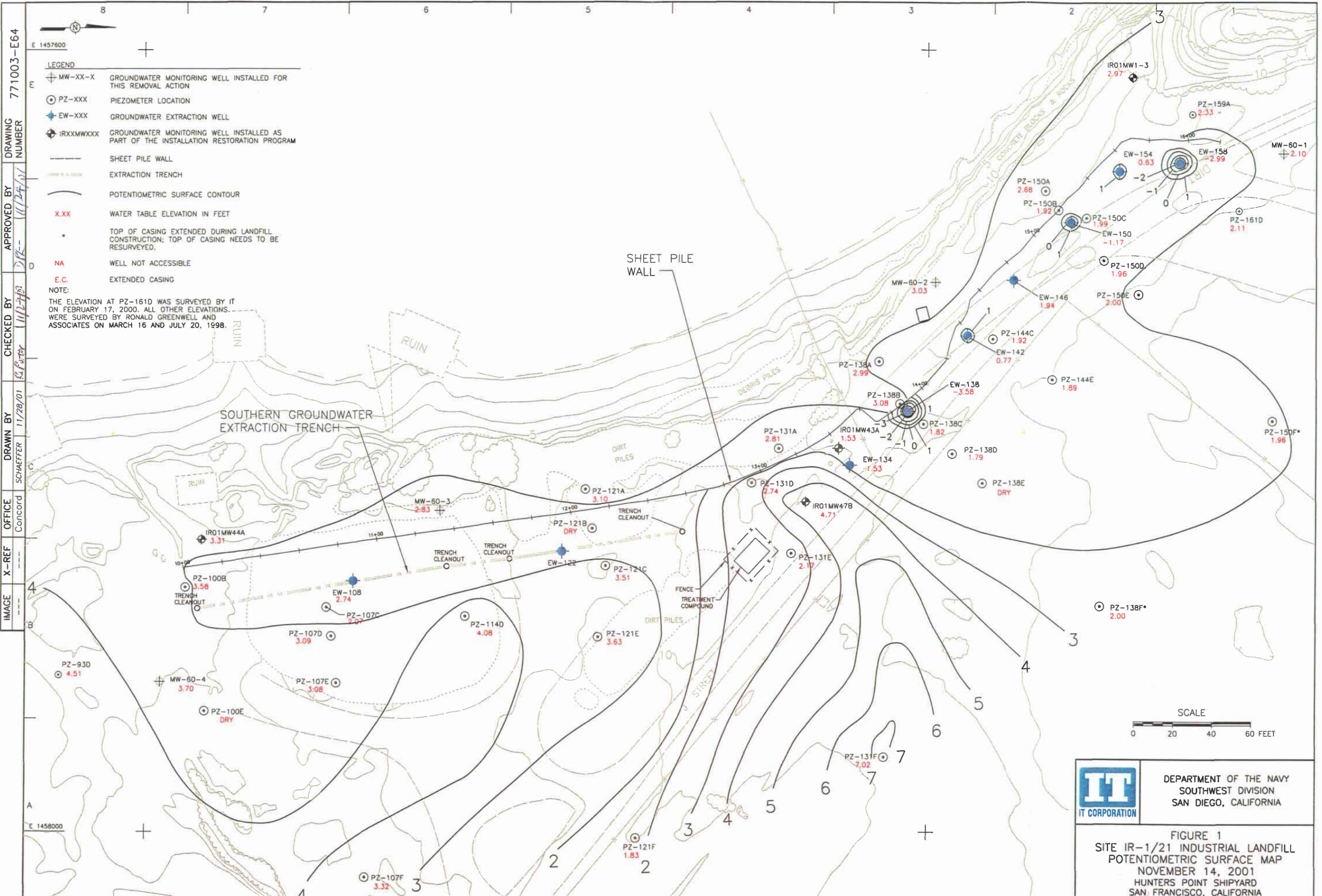
Date Recorded: 14/11/01
 Operator: Rob Rust

Location	Time	Depth to Water Level (ft TOC)	Groundwater Elevation (ft)
EW-108	0:00	4.11	2.74
EW-122	0:00	7.58	*** 0.70
EW-134	1150	7.34	1.53
EW-138	1142	12.98	-3.53
EW-142	1135	9.28	0.77
EW-146	1128	7.90	1.94
EW-150	1114	1.91	-1.17
EW-154	1107	9.67	0.63
EW-158	1103	13.49	-2.99
IR01MW1-3	1050	11.21	2.57
IR01MW43A	1059	10.69	1.53
IR01MW44A	1101	5.81	3.31
IR01MW47B	1102	7.57	4.71
MW-60-1	1057	12.59	2.10
MW-60-2	1027	10.56	3.03
MW-60-3	0916	7.17	2.83
MW-60-4	0924	5.68	3.70
PZ-93D	0920	5.86	4.51
PZ-100B	0918	6.29	3.58
PZ-100E	0926	dry	dry
PZ-107C	0928	7.83	2.07
PZ-107D	0932	7.15	3.09
PZ-107E	0934	7.71	3.08
PZ-107F	0938	8.27	3.32
PZ-114D	0940	6.30	4.08

Location	Time	Depth to Water Level (ft TOC)	Groundwater Elevation (ft)
PZ-121A	0953	8.07	3.10
PZ-121B	0950	dry	dry
PZ-121C	0948	9.12	3.51
PZ-121E	0945	8.06	3.63
PZ-121F	0942	11.77	1.83
PZ-131A	0956	10.41	2.81
PZ-131D	0959	9.32	2.74
PZ-131E	1002	11.96	2.17
PZ-131F	1005	6.48	7.02
PZ-138A	1024	10.60	2.99
PZ-138B	1021	10.96	3.08
PZ-138C	1018	12.53	1.82
PZ-138D	1015	12.98	1.79
PZ-138E	0:00	dry	dry
PZ-138F	1008	17.88	2.00
PZ-144C	1030	12.83	1.92
PZ-144E	1032	13.19	1.89
PZ-150A	1047	12.83	2.68
PZ-150B	1045	12.75	1.92
PZ-150C	1043	12.84	1.99
PZ-150D	1041	13.19	1.96
PZ-150E	1038	13.30	2.00
PZ-150F	1035	20.57	1.96
PZ-159A	1052	11.76	2.33
PZ-161D	1055	13.15	2.11

NOTES:

- NA: Well not accessible
- : Not applicable
- TOC: Top of Casing
- ft: Feet
- E.C. Extended Casing (the wells height has been changed but not yet surveyed)
- *** Data questionable



DRAWING NUMBER: 771003-E64
 APPROVED BY: [Signature]
 CHECKED BY: [Signature]
 DRAWN BY: SCHAEFFER
 OFFICE: Concord
 X-REF: 4
 IMAGE: B

- LEGEND**
- ⊕ MW-XX-X GROUNDWATER MONITORING WELL INSTALLED FOR THIS REMOVAL ACTION
 - ⊙ PZ-XXX PIEZOMETER LOCATION
 - ⊕ EW-XXX GROUNDWATER EXTRACTION WELL
 - ⊕ IRXXMWXXX GROUNDWATER MONITORING WELL INSTALLED AS PART OF THE INSTALLATION RESTORATION PROGRAM
 - SHEET PILE WALL
 - EXTRACTION TRENCH
 - POTENTIOMETRIC SURFACE CONTOUR
 - X.XX WATER TABLE ELEVATION IN FEET
 - TOP OF CASING EXTENDED DURING LANDFILL CONSTRUCTION; TOP OF CASING NEEDS TO BE RESURVEYED.
 - NA WELL NOT ACCESSIBLE
 - E.C. EXTENDED CASING

NOTE:
 THE ELEVATION AT PZ-161D WAS SURVEYED BY IT ON FEBRUARY 17, 2000. ALL OTHER ELEVATIONS WERE SURVEYED BY RONALD GREENWELL AND ASSOCIATES ON MARCH 16 AND JULY 20, 1998.



DEPARTMENT OF THE NAVY
SOUTHWEST DIVISION
SAN DIEGO, CALIFORNIA

FIGURE 1
 SITE IR-1/21 INDUSTRIAL LANDFILL
 POTENTIOMETRIC SURFACE MAP
 NOVEMBER 14, 2001
 HUNTERS POINT SHIPYARD
 SAN FRANCISCO, CALIFORNIA

N00217.000538
HUNTERS POINT
SSIC NO. 5090.3

APPENDIX B
EXTRACTION WELL AND SYSTEM READINGS

INDUSTRIAL LANDFILL GROUNDWATER
EXTRACTION SYSTEM

DATED 5 DECEMBER 2001

Monthly Extraction Well and System Readings
Contract Task Order 0082
Hunters Point Shipyard, Site IR-1/21 Industrial Landfill
Contract No. N62474-98-D-2076

IT Corporation
 Project No. 831667

Date Recorded:
 Operator:

11/14/01
 Ben Porter

Location	Time	Pressure (psi)	Flow Rate (gpm)	Total Flow (gal) (Since 02/20/99)	Change in Flow (gal) (10/15/01-11/14/01)
EW-108	1200	60	7	268,456	3,911
EW-122	1155	54	9	149,414	5
EW-134	1148	0	0	186,066	0
EW-138	1142	65	2	2,270,412	58,933
EW-142	1135	60	8	240,088	1,036
EW-146	1130	0	0	721,400	12
EW-150	1115	80	4	2,141,810	32,912
EW-154	1108	12	10	185,722	2,257
EW-158	1103	21	6	8,287,843	270,982
Total Change in Flow at the Wells					370,048
Collection and Monitoring Pad	1220	5	8.3	12,253,953	385,623

Conductivity at Monitoring Pad: 7.33 mS/CM

Average Monthly Flow Rate, Using Readings at the Wells (gpm)	8.57
Average Monthly Flow Rate, Using Readings at Monitoring Pad (gpm)	8.93
Error of Flowmeter at the Monitoring Pad (%)	4.2%

Abbreviations:

psi = pounds per square inch
 gpm = gallons per minute
 gal = gallon
 EW = extraction well
 mS/CM = millisiemens/centimeter

**APPENDIX C
RECTIFIER INSPECTION RECORD**

Cathodic Protection System Monthly Inspection Record
Contract No. N62474-98-D-2076
Contract Task Order 0082
Hunters Point Shipyard, Site IR-1/21 Industrial Landfill
U. S. Navy Southwest Division

IT Corporation

Project No. 831667

Date	Rectifier 1 Output		Rectifier 2 Output		Taps	
	Volts	Amperes	Volts	Amperes	C	F
6/1/99	10.5	41.4	10.3	44.8	1	3
8/19/99	10.8	44.0	10.2	48.2	1	3
9/9/99	10.8	44.1	10.2	48.8	1	3
10/28/99	10.6	47.4	10.0	≥ 50.0	1	3
11/18/99	11.8	46.3	9.9	≥ 50.0	1	3
12/16/99	11.5	46.1	8.7	48.6	1	3
1/13/00	11.5	45.3	10.1	48.5	1	3
2/3/00	11.4	46.5	10.0	48.2	1	3
3/9/00	11.3	46.2	9.9	48.9	1	3
4/6/00	10.8	45.3	10.1	48.9	1	3
5/10/00	11.3	45.5	10.0	48.3	1	3
6/7/00	10.7	44.5	10.0	48.0	1	3
7/6/00	11.0	44.0	10.0	47.5	1	3
8/23/00	12	44	10	48	1	3
9/12/00	12	44	10	47.5	1	3
10/9/00	11	45	10	48	1	3
11/2/00	11	44	10	47.5	1	3
12/6/00	10.5	46	10	49.5	1	3

Cathodic Protection System Monthly Inspection Record
Contract No. N62474-98-D-2076
Contract Task Order 0082
Hunters Point Shipyard, Site IR-1/21 Industrial Landfill
U. S. Navy Southwest Division

IT Corporation

Project No. 831667

Date	Rectifier 1 Output		Rectifier 2 Output		Taps	
	Volts	Amperes	Volts	Amperes	C	F
6/7/00	10.7	44.5	10.0	48.0	1	3
12/6/00	10.5	46	10	49.5	1	3
1/9/01	11	46.5	10	≥ 50.0	1	3
2/6/01	11	48	10	≥ 50.0	1	3
3/23/01	11	45	10	48.5	1	3
4/6/01	12	46.5	10	≥ 50.0	1	3
5/17/01	11	47.0	10	≥ 50.0	1	3
6/18/01	10	41.0	16	41.0	1	3
7/19/01	10	41.0	16	41.0	1	3
8/15/01	10	42.0	16	42.0	1	3
9/00/01	no readings	no readings	no readings	no readings	1	3
10/9/01	10	42.0	16	42.0	1	3
11/14/01	10	41.0	16	41.0	1	3

≥ = greater than or equal to (gauge was maxed out)