

**DO #0083 Hunters Point
Site IR-1/21 Industrial Landfill
Groundwater Extraction System
January 2000 Monthly Report**

771003-ITNHC-1045

UG2444-93-D-2157

Prepared for:

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February 2000

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Attachment	Title
1	Groundwater Level Measurements and Map of the Potentiometric Surface
2	Extraction Well Readings
3	Rectifier Inspection Record

1.0 Introduction

The objective of the groundwater extraction system (GES) under Delivery Order (DO) #0083 at Hunters Point Shipyard is to prevent mounding of the groundwater at a limited portion of the Site IR-1/21 Landfill. The GES collects groundwater from seven extraction wells and one extraction trench, and discharges the groundwater into the sanitary sewer for the City and County of San Francisco. The GES works in conjunction with a down-gradient sheet pile containment barrier to prevent groundwater mounding and subsequent flow around the containment barrier. The end result of this activity is to reduce the potential for migration of groundwater, which contains landfill constituents, into the bay.

The sheet pile barrier is protected from corrosion by a cathodic protection system that was commissioned in June 1999.

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 issued on December 14, 1998. This permit expires on December 14, 2001 and must be reapplied for by September 14, 2001.

This monthly report was prepared by IT Corporation (IT) on behalf of the U.S. Navy to document activities associated with operation and maintenance of the GES. This report includes a summary of activities from January 1, 2000 through January 24, 2000.

2.0 Summary of Field Activities

2.1 Operation and Maintenance (O&M)

Several operation and maintenance activities were performed at the GES during this reporting period. On January 4, 2000 at 9:30 a.m., the GES was turned on with no problems. The GES had been off since December 30 at 8 a.m., to prevent any Y2K problems from occurring during the millennium change.

On January 6, 2000, the pump end at EW-142 was replaced. Magnesium oxide deposits in the impellers had been impeding flow through the existing pump. These deposits are likely caused by iron bacteria in the system.

Also, on January 6, 2000, the basket strainer at the collection and monitoring pad was cleaned.

On January 6, the pump motor at EW-154 was cycling repeatedly. A shorted capacitor was replaced, and the motor began functioning correctly. On January 24, the motor was cycling repeatedly again. A splice in the wire leading to the ground sensor was replaced with a superior splice that was able to better protect the splice from the water. The splice was located below the water level in the well and may have gotten wet, causing the capacitor to short out on January 6. After the splice upgrade, the motor began functioning correctly once again.

On January 13, the padlocks at the site were lubricated with low surface tension penetrant manufactured by LPS Laboratories.

On January 13, the K-factor for the flowmeter at the collection and monitoring pad was recalibrated for more accurate flow readings. During a teleconference with the manufacturer, it had been determined that the K-factor that was set at the factory was producing incorrect flow readings, because the K-factor did not account for the site-specific hydrodynamic conditions in the piping. The presence of a basket strainer upstream of the flowmeter, combined with the low-flow situation, led to conditions that differed from those present during factory calibration. The K-factor was field calibrated to account for these conditions.

On January 24, the vaults at EW-108 and EW-138 were halfway submerged, and the vaults at EW-122 and EW-134 were completely submerged, due to the ongoing rainstorm that had begun on January 22. Attempts were made to pump the water out of the vaults, but the water recharged in the vaults as quickly as it was pumped out. Methods of protecting the electrical components in the vaults during rainstorms are currently being evaluated.

2.2 Field Data

Data collected during this period to support O&M of the GES and cathodic protection system includes groundwater levels taken at the extraction wells, at the monitoring wells, and at the piezometers; pressure and flow readings taken at the extraction wells and at the collection and monitoring pad; and voltage and amperage readings at the rectifiers. These readings are included as Attachments 1, 2, and 3. This data is used to monitor the performance of the system.

2.2.1 Groundwater Level Measurements

Water levels were taken at the extraction wells, monitoring wells and piezometers on January 27, 2000. Depth to groundwater measurements were obtained with a Slope Indicator Co. water level indicator, model 51453, and measured to the nearest 0.01 ft. Though these measurements were taken after the time period covered by this report, they are provided for informational purposes in

Attachment 1 of this document. Also included in Attachment 1 are the groundwater elevations associated with the groundwater level measurements and a map of the potentiometric surface.

2.2.2 GES Measurements

Pressure and flow readings were taken at the extraction wells on January 24, 2000. These measurements are provided in Attachment 2. The total flow for the 39-day discharge period from December 16, 1999 to January 24, 2000 was 301,292 gallons, with an average flowrate of 5.4 gpm. The total flow was calculated by adding the flows at each extraction well.

2.2.3 Rectifier Inspection

An inspection of the rectifiers was performed on January 13, 2000. A record of this inspection is provided in Attachment 3. The output at Rectifier One was 11.5 volts and 45.3 amps. The output at Rectifier Two was 10.1 volts and 48.5 amps.

2.3 Sample Collection

The City and County of San Francisco Industrial Wastewater Discharger Class I Permit No. 98-0301 requires a quarterly sample to be collected from the GES effluent. No sample was required in January 2000. The next quarterly sample will be collected in February 2000.

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.*

ATTACHMENT 1

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

U.S. Navy, Southwest Division
Contract No. N62474-93-D-2151
Delivery Order #0083
Hunters Point Shipyard, Site IR-1/21 Industrial Landfill
Monthly Monitoring Well, Extraction Well, and Piezometer Water Levels

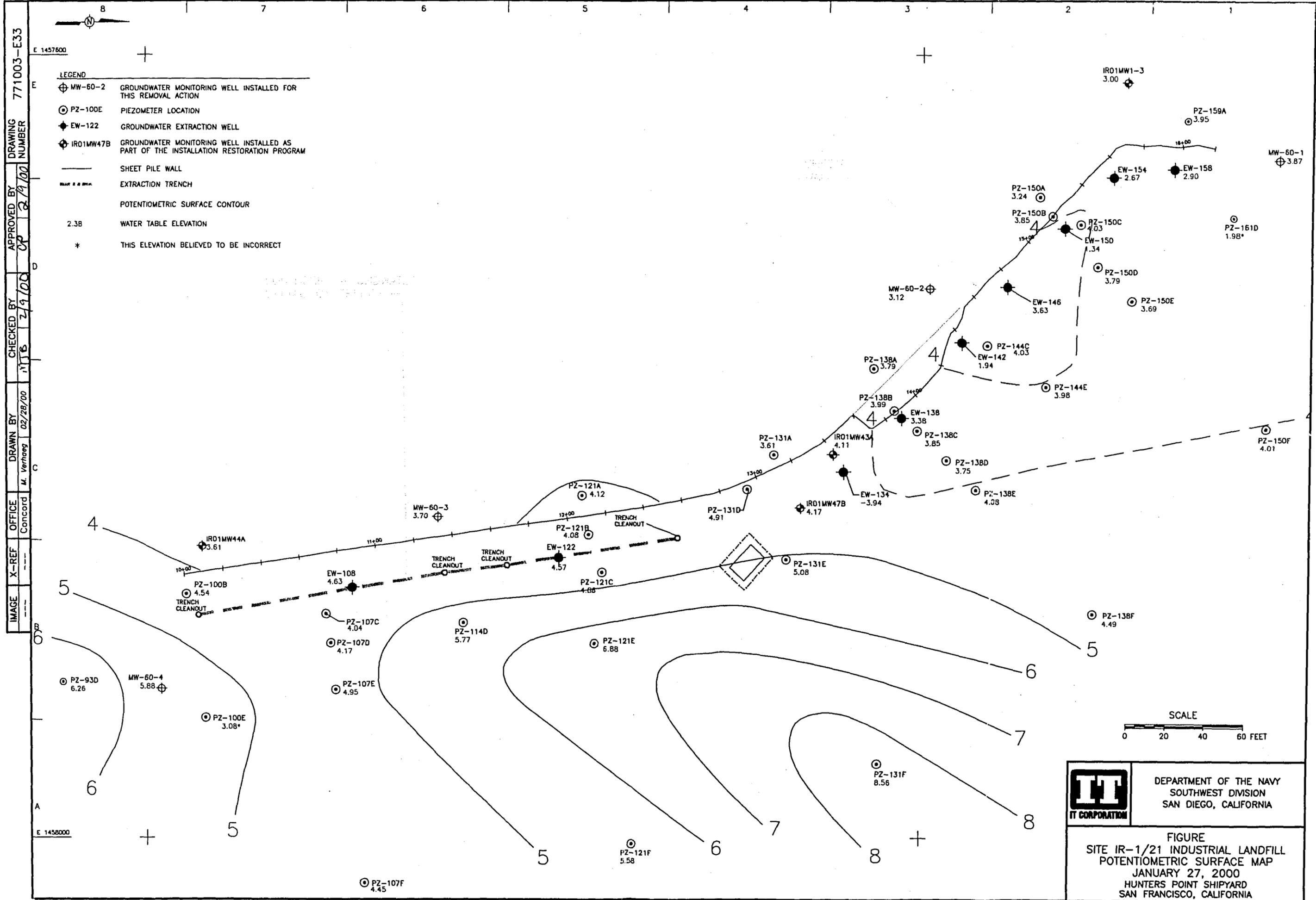
IT Corporation
 Project No. 771003

Date Recorded: 01/27/00
 Operators: Cathy Polityka and Brian Schoenneman

Location	Time	Water Level TOC (ft)	Groundwater Elevation (ft)
EW-108	1659	2.22	4.63
EW-122	1657	3.71	4.57
EW-134	1656	12.81	-3.94
EW-138	1655	6.07	3.38
EW-142	1654	8.11	1.94
EW-146	1653	6.21	3.63
EW-150	1652	8.40	1.34
EW-154	1651	7.63	2.67
EW-158	1648	7.60	2.90
IR01MW1-3	1645	10.78	3.00
IR01MW43A	1620	8.11	4.11
IR01MW44A	1501	5.51	3.61
IR01MW47B	1622	8.11	4.17
MW-60-1	1647	10.82	3.87
MW-60-2	1640	10.47	3.12
MW-60-3	1602	6.30	3.70
MW-60-4	1457	3.50	5.88
PZ-93D	1455	4.11	6.26
PZ-100B	1500	5.33	4.54
PZ-100E	1459	8.51	3.08
PZ-107C	1504	5.86	4.04
PZ-107D	1550	6.07	4.17
PZ-107E	1552	5.84	4.95
PZ-107F	1554	7.14	4.45
PZ-114D	1600	4.61	5.77
PZ-121A	1604	7.05	4.12
PZ-121B	1606	7.54	4.08
PZ-121C	1609	7.75	4.88
PZ-121E	1611	4.81	6.88
PZ-121F	1558	8.02	5.58
PZ-131A	1617	9.61	3.61
PZ-131D	1615	7.15	4.91
PZ-131E	1629	9.05	5.08
PZ-131F	1631	4.94	8.56
PZ-138A	1639	9.80	3.79
PZ-138B	1638	10.05	3.99
PZ-138C	1636	10.50	3.85
PZ-138D	1635	11.02	3.75
PZ-138E	1634	10.31	4.08
PZ-138F	1632	11.27	4.49
PZ-144C	1641	10.72	4.03
PZ-144E	1642	11.10	3.98
PZ-150A	1645	12.27	3.24
PZ-150B	1644	10.82	3.85
PZ-150C	1644	10.80	4.03
PZ-150D	1643	11.36	3.79
PZ-150E	1643	11.61	3.69
PZ-150F	1642	13.08	4.01
PZ-159A	1646	10.14	3.95
PZ-161D	1646	11.30	1.98

ATTACHMENT 2

EXTRACTION WELL READINGS



DRAWING NUMBER 771003-E33
 APPROVED BY [Signature]
 CHECKED BY [Signature]
 DRAWN BY M. Verlaag
 OFFICE Concord
 X-REF
 IMAGE

- LEGEND**
- ⊕ MW-60-2 GROUNDWATER MONITORING WELL INSTALLED FOR THIS REMOVAL ACTION
 - ⊙ PZ-100E PIEZOMETER LOCATION
 - ◆ EW-122 GROUNDWATER EXTRACTION WELL
 - ⊕ IR01MW47B GROUNDWATER MONITORING WELL INSTALLED AS PART OF THE INSTALLATION RESTORATION PROGRAM
 - SHEET PILE WALL
 - EXTRACTION TRENCH
 - POTENTIOMETRIC SURFACE CONTOUR
 - 2.3B WATER TABLE ELEVATION
 - * THIS ELEVATION BELIEVED TO BE INCORRECT

	DEPARTMENT OF THE NAVY SOUTHWEST DIVISION SAN DIEGO, CALIFORNIA
	FIGURE SITE IR-1/21 INDUSTRIAL LANDFILL POTENTIOMETRIC SURFACE MAP JANUARY 27, 2000 HUNTERS POINT SHIPYARD SAN FRANCISCO, CALIFORNIA

U.S. Navy, Southwest Division
Contract No. N62474-93-D-2151
Delivery Order #0083
Hunters Point Shipyard, Site IR-1/21 Industrial Landfill
Monthly Extraction Well and System Readings
Operator Checklist 1

IT Corporation
 Project No. 771003

Date Recorded: 01/24/00
 Operators: Cathy Polityka and Greg Mason

Location	Time	Pressure (psi)	Flowrate (gpm)	Total Flow (gal)	Monthly Flow (gal) (12/16/99-01/24/00)
EW-108	1230	75	0.5	52,725	5,452
EW-122	1240	0	0	78,306	26
EW-134	1245	0	0	111,293	13,087
EW-138	1250	92	0.9	155,261	70,063
EW-142	1255	95	1.0	93,642	13,012
EW-146	1300	91	2.0	122,532	51,418
EW-150	1305	88	2.0	984,872	88,317
EW-154	1500	71	1.2	78,475	8,484
EW-158	1325	90	2.0	1,389,883	51,433
System Total	1510	6	8.3	3,066,989	301,292

ATTACHMENT 3

RECTIFIER INSPECTION RECORD

U.S. Navy, Southwest Division
Contract No. N62474-93-D-2151
Delivery Order #0083
Hunters Point Shipyard, Site IR-1/21 Industrial Landfill
Cathodic Protection System Monthly Inspection Record
Operator Checklist 4

IT Corporation
Project No. 771003

Rectifier Number: 1
Operator: Cathy Polityka

Date	Output		Checked By (Operator's Name)	Taps		Comments
	Volts	Amperes		C	F	
06/01/1999	10.5	41.4	JD/REC	1	3	
08/19/1999	10.8	44.0	CP	1	3	
09/09/1999	10.8	44.1	CP	1	3	
10/28/1999	10.6	47.4	CP	1	3	
11/18/1999	11.8	46.3	CP	1	3	
12/16/1999	11.5	46.1	CP	1	3	
01/13/2000	11.5	45.3	CP	1	3	

U.S. Navy, Southwest Division
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Cathodic Protection System Monthly Inspection Record
Operator Checklist 4

IT Corporation
Project No. 771003

Rectifier Number: 2
Operator: Cathy Polityka

Date	Output		Checked By (Operator's Name)	Taps		Comments
	Volts	Amperes		C	F	
06/01/1999	10.3	44.8	JD/REC	1	3	
08/19/1999	10.2	48.2	CP	1	3	
09/09/1999	10.2	48.8	CP	1	3	
10/28/1999	10.0	> 50.0	CP	1	3	
11/18/1999	9.9	> 50.0	CP	1	3	
12/16/1999	8.7	48.6	CP	1	3	
01/13/2000	10.1	48.5	CP	1	3	