

STATE OF CALIFORNIA  
REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

STAFF SUMMARY REPORT (Max Shahbazian)  
Meeting Date: January 23, 2007

ITEM: 6C

SUBJECT: **International Business Machines Corporation, for the property located at 5600 Cottle Road, San Jose, Santa Clara County – Amendment of Site Cleanup Requirements**

CHRONOLGY: October 1988 - Final Site Cleanup Requirements adopted.  
August 2002 - Final Site Cleanup Requirements revised.

DISCUSSION: This item was continued from the December 13, 2006, Board meeting due to the lack of a Board quorum. This amendment incorporates groundwater recharge requirements into the International Business Machine (IBM) site cleanup requirements. The recharge was previously permitted by IBM's individual NPDES permit, which the Board is considering to rescind via item 6A on the Board agenda.

The IMB site is located in south San Jose near the intersection of US-101 and Blossom Hill Road. The Water Board has overseen cleanup of this site since early 1980's. The current groundwater cleanup system consists of 11 groundwater extraction wells and an onsite air stripping system for treating groundwater polluted by volatile organic compounds. After treating the groundwater, IBM reinjects it back into an aquifer beneath the site. This recharge process has been ongoing since 1994. The Tentative Order (Appendix A) contains recharge water cleanup standards, flow limits, and monitoring requirements.

We received only one significant comment from IBM on the Tentative Order (Appendix B). IBM was concerned about its ability to meet tougher effluent limits in the NPDES general permit in the event it needs to resume operation of its off-site extraction wells. We met with IBM representatives in early December 2006 and discussed alternative approaches. We agreed on an approach that we believe addresses their and our concerns. It involves minor changes, which are reflected in the permit-rescission item (item 6A). IBM also requested that we eliminate some other wells from the Self-Monitoring Program (SMP) and revise the SMP to reflect the recent changes in site groundwater monitoring network. As such, we will review IBM's requested changes to the SMP and prepare

a tentative revision to the SMP for public review and comment. We expect the Tentative Order to remain uncontested.

RECOMMEN-  
DATION

Adopt the Tentative Order

File No:

43S0056 (MS)

Appendices:

A. Tentative Order

B. Correspondence

C. Location Map

**Appendix A**  
**Tentative Order**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SAN FRANCISCO BAY REGION

TENTATIVE ORDER

AMENDMENT OF SITE CLEANUP REQUIREMENTS (ORDER NO. R2-2002-0082) FOR:

INTERNATIONAL BUSINESS MACHINES located at  
5600 COTTLE ROAD, SAN JOSE, SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Water Board) finds that:

1. **Water Board Order:** The Water Board adopted Site Cleanup Requirements for this site on August 20, 2002 (Order No. R2-2002-0082).
2. **Reason for Amendment:** Order No. R2-2002-0082 requires International Business Machines (IBM) to implement its remedial action plan, which includes recharge of extracted and treated groundwater. The Water Board formerly permitted the groundwater recharge under IBM's individual National Pollutant Discharge Elimination System (NPDES) permit (Order No. 99-094, NPDES Permit No. CAO027961). The Water Board rescinded IBM's individual NPDES permit on January 23, 2007. This amendment incorporates groundwater recharge requirements into Order No. R2-2002-0082.
3. **CEQA:** This action is an amendment of an order to enforce the laws and regulations administered by the Water Board. As such, this action is categorically exempt from the provision of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.
4. **Notification:** The Water Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to amend site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.
5. **Public Hearing:** The Water Board, at a public meeting, heard and considered all comments pertaining to this Tentative Order.

**IT IS HEREBY ORDERED**, pursuant to Section 13304 of the California Water Code, that Order No. R2-2002-0082 shall be amended as follows:

1. Add the following new paragraph at the end of finding 4:

The site is subject to the General NPDES VOC Permit No. CAG912003 (Order No. R2-2004-0055) adopted on July 21, 2004, with respect to any surface water discharges from the groundwater extraction and treatment system.

2. The last paragraph of finding 12b is revised to read:

The current groundwater extraction system consists of six onsite and three off site A-aquifer zone extraction wells (RA-02, RA-25, RA-27, RA-30, RA-31, RA-32 and 12-A, ORA-4, ORA-5, respectively), one onsite B-aquifer zone extraction well (RB-08), and one offsite B-aquifer zone extraction well (ORB-6). Groundwater from the extraction wells is treated at the onsite air stripper treatment system and reinjected into the B-aquifer zone through two onsite recharge wells BR-1 and BR-2. Both recharge wells are located up-gradient of onsite extraction wells. The treated groundwater pH is adjusted prior to recharge to prevent recharge-well fouling, and a chemical is added to the air stripper influent to prevent scaling. The average and maximum recharge flow rates for both wells combined are 0.65 million gallons per day (mgd) and 1 mgd, respectively.

3. Add new Prohibition A.4:

Total recharge volume shall not exceed 1 million gallons per day.

4. Add new Cleanup Standard B.3:

### B.3 Groundwater Recharge Specifications

a. The following limitations apply to the organic constituents in the recharge water after full treatment but before reinjecting into the existing and future recharge wells:

**Table 4. Recharge Water Cleanup Standards**

<b>Organic Constituent</b>	<b>Maximum Limit (ug/l)</b>	<b>Basis of Cleanup Standard</b>
1,1,1-Trichloroethane	5	BAT
1,1- Dichloroethene	5	BAT
1,1-Dichloroethane	5	BAT
Cis-1,2-Dichloroethene	5	BAT
Methylene Chloride	5	BAT
Perchloroethylene	5	BAT
Trichloroethylene	3	Order
Benzene	1	MCL
Chloroform	5	BAT
Freon 113	5	BAT
Xylenes (total)	5	BAT

Table Notes:

BAT = Best Available Technology.

MCL = Maximum Contaminant Levels, California Department of Health Services, September 2006.

Order = Water Board Order No. R2-2002-0082.

b. The pH of the recharge water shall not exceed 8.5 nor be less than 6.5.

5. The Self-Monitoring Program shall be updated to reflect the recent changes in the groundwater monitoring network of the site and include the following new paragraph:

Samples of recharge water shall be collected at the wellhead of each recharge well or at a point in the onsite groundwater treatment system immediately following treatment but before it is reinjected into the recharge wells. The recharge water samples shall be collected, measured and analyzed on a monthly basis for the following parameters and constituents:

- a. Flow rate (gpm and gpd)
- b. pH (units)
- c. VOCs (ug/l) EPA test method 8260B (only the VOCs that are identified in Table 4 above should be reported).

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the Water Board on January 23, 2007.

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Bruce H. Wolfe  
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13268 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY.

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**Appendix B**  
**Correspondence**



November 20, 2006

5600 Cottle Road  
San Jose, CA 95193 0001

Stephen A. Hill  
Regional Water Quality Control Board  
San Francisco Bay Region  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

**Subject: Tentative Order Amending Site Cleanup Requirements, Order R2-2002-0082**

Dear Mr. Hill:

In response to the letter from Stephen Hill dated October 24, 2006, IBM is providing the following comments to the proposed Site Cleanup Requirements modifications. The comments primarily relate to the impact of modifying the current Order on IBM's ability to effectively manage its' overall groundwater remediation operations. IBM is also requesting an update of the current Self-Monitoring Program to incorporate recent changes in the groundwater monitoring well network which have resulted from the Hitachi redevelopment activities and Board approval of proposed changes in overall offsite groundwater monitoring.

Incorporation of groundwater recharge requirements within Order No. R2-2002-0082 does not directly impact IBM's ability to effectively manage its' groundwater remediation program and IBM concurs with this proposed change. However, the Board's proposed coverage of IBM's groundwater remediation discharges under General NPDES (National Pollution Discharge Elimination System) VOC Permit No. CAG912003 does impact our ability to meet the proposed requirements of paragraph 12b.

### **Paragraph 12b Revisions**

The proposed revision states that "Groundwater extracted by wells ORB-1 and ORB-7 would be discharged directly to the storm sewer under General NPDES VOC Permit No. CAG912003." In fact, the discharges from these wells could not be directly discharged to the storm sewer without violating the discharge limits established by Permit No. CAG912003. The discharge from these wells, even after being processed by the installed spray aeration systems, do not meet the discharge standards specified in Permit No. CAG912003 for 1,1,2-trichloro-1,2,2 trifluoroethane (Freon 113) and 1,1,1-trichloroethane (TCA). As such, these wells cannot feasibly be operated for groundwater capture or even to allow for maintenance and sampling activities.

As explained in our November 14, 2006 letter to Ms. Lila Tang related to the proposed incorporation of IBM's discharges under Permit No. CAG912003, the following is the basis for our concern:

When the Board approved the cessation of groundwater extraction from wells ORB-1 and ORB-7, IBM was required to maintain these wells in operable condition so that they could be reactivated in response to unanticipated increases in offsite groundwater chemical concentrations. Due to this requirement, IBM is concerned that the 5 ug/L discharge limits for Freon 113 and TCA stipulated in Permit No. CAG912003 would prohibit use of these wells should it become necessary to reactivate the wells in order to re-establish hydraulic control of chemical migration.

When last operated, flow from wells ORB-1 and ORB-7 was approximately 75,000 and 150,000 gallons per day respectively. Discharges of Freon 113 from wells ORB-1 and ORB-7 were approximately 4 ug/L and 11 ug/L, respectively. Discharges of TCA from wells ORB-1 and ORB-7 were approximately 11 ug/L from each well.

Wells ORB-1 and ORB-7 are installed in residential areas and therefore it is not feasible to install treatment facilities such as air stripping or carbon adsorption systems. This is due to space limitations, traffic concerns, and potential noise impacts on the nearby homeowners. Extracted groundwater is currently treated by simple spray nozzle aeration with subsequent discharge to surface water via the City of San Jose storm sewer system.

Additionally, due to the size of these wells, it is necessary to discharge in excess of 1,000 gallons of water in order to simply obtain a representative sample from these wells. Given the location and logistical constraints associated with these extraction wells, it is not feasible to collect this volume of water and transport it for treatment prior to discharge.

In summary, discharges from these wells during normal operation, sampling, and maintenance operations do not meet the Freon 113 and TCA limits established in the General Permit and it is infeasible to treat the discharges to meet the proposed limits.

Therefore, IBM requests that the discharge limits for Freon 113 and TCA be maintained at the current 50 ug/L value which should be sufficient to allow the wells to be operated in the event unanticipated increases in offsite groundwater concentrations of these two chemicals should occur.

Alternatively, IBM requests that it be allowed to place wells ORB-1 and ORB-7 in an inactive status based on Santa Clara Valley Water District requirements such that the wells will no longer be required to be operated for sampling or maintenance. In the event that chemical concentrations in the offsite area increase to a level above established cleanup criteria, IBM will request Board approval for the temporary discharge to surface water of groundwater from these wells in order to prevent undesired chemical migration.

#### **Self-Monitoring Program Revisions:**

Since Order R2-2002-0082 was issued, many changes have occurred to the IBM monitoring and extraction well network, most recently closure of 44 wells completed in response to Hitachi's site redevelopment activities. These and other changes have

resulted in significant changes to wells currently listed in Table 1 of the Self-Monitoring Program. IBM requests that Table 1 be modified to update the well listing and monitoring requirements.

As Table 1 is updated to reflect current conditions, IBM is also requesting the Board to approve cessation of monitoring of the majority of offsite wells. The offsite monitoring wells being proposed for removal from Table 1 have not exceeded the current cleanup standards for many years and in some cases have never exceeded current cleanup standards. Wells proposed for removal include the public and private wells located in Region II beyond the Edenvale Gap area since these wells have never exceeded the current groundwater cleanup standards for the B- and deeper aquifer zones and meet current drinking water standards. It should also be noted that during the past year following cessation of pumping by wells ORB-1 and ORB-7, no significant changes in chemical concentrations have been observed in any offsite monitoring well.

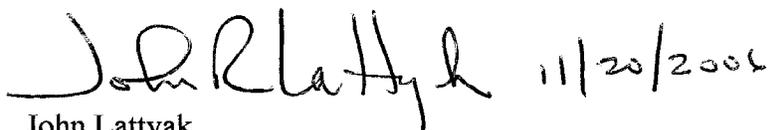
IBM is proposing to maintain monitoring of several offsite wells to assure that key areas of the offsite groundwater aquifers continue to be monitored to detect any unanticipated increases in chemical concentrations. These wells would be used to determine whether or not wells ORB-1 and ORB-7 would need to be reactivated.

In support for our request to remove offsite monitoring wells from the Self-Monitoring Program, Table 2 is attached which presents monitoring data collected during 2004 to 2006 from the offsite monitoring wells. As can be seen from the data, all wells have been below current cleanup standards during this time period for the chemicals which have been detected above the established laboratory analytical detection limits.

The proposed Table 1 Self-Monitoring Plan is attached for Board consideration. Making these modifications to the Self-Monitoring Program at this time is warranted, especially since the wells that are being proposed for removal have either already been approved for closure, closed, or have been below established cleanup levels for many years.

As you conduct your review of the above comments and the attached proposed Self-Monitoring Program, if you have any questions or concerns, please contact Jim Dumanowski at (408) 284-4739.

Sincerely yours,



John Lattyak  
Manager, Site Operations

Attachments

Table 1. Chemical Analysis Schedule for Groundwater Samples  
 Groundwater Self-Monitoring Program  
 IBM  
 San Jose, California

Onsite Monitoring Wells			Onsite Monitoring Wells		
Well No.	Sampling Frequency	Analytical Method	Well No.	Sampling Frequency	Analytical Method
A-01	Q	8260B, 8015B (S.Sol), Cr/Cr+6	RA-22	Q	8260B, 8270 (Isoph & 1,4-dioxane), 8015B (S.Sol 7 Pet Nap), Cr/Cr+6
A-07	SA	8021B	RA-24	Q	8260B, 8015B (S.Sol)
A-10	SA	8021B	RA-26	Q	8021B
A-11	Q	8260B	RA-29	Q	8260B
A-17	Q	8260B,8015B (Pet Nap)	RB-07	Q	8021B
A-18	SA	8260B, 8015B (S.Sol)			
A-20	SA	8021B			
A-21	A	8021B			
A-22	A	8260B, 8270 (Isoph only), 8015B (S.Sol & Pet Nap)			
A-24	SA	8260B			
A-28	SA	8021B, 8015B (S.Sol), Cr/Cr+6			
A-30	SA	8021B			
A-31	SA	8021B			
A-32	A	8021B, 8015B (S.Sol), Cr/Cr+6			
A-38	SA	8260B, 8015B (S.Sol)			
A-39	Q	8260B, 8015B (S.Sol)			
A-40	A	8021B			
A-41	Q	8260B, 8015B (S.Sol)			
A-45	SA	8021B			
A-49	A	8021B			
A-53	Q	8260B			
A-61	SA	8260B, 8270 (NMP only)			
A-64	A	8021B			
A-71	A	8260B, 8015B (S.Sol), Cr/Cr+6			
A-72	A	8260B, 8015B (S.Sol)			
A-77	A	8021B			
A-79	A	8021B			
A-81	A	8021B			
B-02	A	8021B			
B-04	Q	8021B			
B-05	A	8021B			
B-10	SA	8260B			
B-13	A	8021B			
B-16	A	8021B			
B-22	Q	8260B			
B-24	Q	8260B			
B-35	SA	8021B			
B-47	SA	8021B			
B-49	SA	8260B, 8015B (S.Sol)			
B-50	A	8021B			
B-51	SA	8021B			
C-09	A	8021B			
C-21	SA	8021B			
C-23	SA	8021B			
RA-05	SA	8021B, Cr/Cr+6			
RA-06	SA	8021B			
RA-11	Q	8260B			
RA-12	Q	8260B			
RA-13	SA	8021B			
RA-14	Q	8260B			

Offsite Monitoring Wells		
Well No.	Sampling Frequency	Analytical Method
01-B	A	8021B
02-A	A	8021B
02-B	Q	8021B
05-B	SA	8021B
09-B	SA	8021B
13-B	Q	8021B
24-B	A	8021B
29-B	A	8021B
30-BC	A	8021B

Onsite Extraction Wells		
Well No.	Sampling Frequency	Analytical Method
RA-02	Q	8260B
RA-25	Q	8260B, 8015B (S.Sol)
RA-27	Q	8260B
RA-30	Q	8260B
RA-31	Q	8021B
RA-32	Q	8021B
RB-08	Q	8021B

Onsite Recharge Wells		
Well No.	Sampling Frequency	Analytical Method
BR-1	Q	8021B
BR-2	Q	8021B

Offsite Extraction Wells		
Well No.	Sampling Frequency	Analytical Method
12-A	Q	8021B
ORA-4	Q	8021B
ORA-5	Q	8021B
ORB-6	Q	8021B & MTBE

Public/Private Wells (Offsite)		
Well No.	Sampling Frequency	Analytical Method
03	A	8021B
37	A	8021B

Table 1. Chemical Analysis Schedule for Groundwater Samples  
 Groundwater Self-Monitoring Program  
 IBM  
 San Jose, California

<b>Production Wells (Onsite)</b>		
<b>Well No.</b>	<b>Sampling Frequency</b>	<b>Analytical Method</b>
W-3	A	8021B
W-4	A	8021B
W-5	A	8021B
W-6	A	8021B
W-7	A	8021B
W-8	A	8021B

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**NOTES:**

Water levels will be measured in all these wells quarterly

Abbreviations for frequencies are:  
 Q                      Quarterly  
 SA                     Semiannually (2 times a year)  
 A                        Annually

Abbreviations for chemicals are:  
 Cr                      Chromium  
 Cr+6                  Hexavalent Chromium  
 Isoph                  Isophorone  
 MTBE                  Methyl tert-Butyl Ether  
 NMP                    n-Methyl-2-Pyrrolidone  
 Pet Nap                Petroleum Naptha  
 S.Sol                    Shell Sol 140

Test Methods:  
 8015B                  Leaking Underground Fuel Tank Manual, Petroleum Hydrocarbons (TPH) in the range C6-C22  
 8021B                  EPA Test Method 8021B, Volatile Organic Compounds by Gas Chromotography (GC); may be replaced by 8260B  
 8260B                  EPA Test Method 8260B, Volatile Organic Compounds by Gas Chromotography/Mass Spectrometry (GC/MS)  
 8270C                  EPA Test Method 8270C, Semivolatile Organic Compounds by GC/MS, for isophorone or n-methyl-2-pyrrolidone  
 Cr/Cr+6                EPA Test Mehtod 6010B, Chromium by Inductively Coupled Plasma – Atomic Emission Spectrometry (ICP) and EPA Test Method 7196A – Hexavalent Chromium by Colorimetric

Table 2. IBM Offsite Monitoring Well Data – 2004 to 2006

Well	Date	Freon 113	TCA	TCE	DCE	DCA
01-B	10/18/04	1.3 A/J	ND(0.50)A	ND(0.50)A	ND(0.50)A	ND(0.50)A
01-B	10/24/05	3.8 A	ND(0.50)A	ND(0.50)A	ND(0.50)A	ND(0.50)A
02-A	10/24/05	ND(2.0)A	ND(0.50)A	ND(0.50)A	ND(0.50)A	ND(0.50)A
02-B	10/19/04	14. A	3.1 A	ND(0.50)A	2.4 A	0.46 A/J
02-B	01/11/05	12. A	6.6 A	ND(0.50)A	5.1 A	0.70 A
02-B	04/19/05	11. A	9.5 A	ND(0.50)A	5.0 A	0.83 A
02-B	07/27/05	10. A	9.2 A	ND(0.50)A	4.9 A	0.77 A
02-B	10/25/05	12. J	7.8 J	ND(0.50)J	4.6 J	0.80 J
02-B	01/25/06	4.6 A	3.4 A	ND(0.50)A	2.0 A	0.38 A/J
02-B	05/01/06	21. A	4.9 A	ND(0.50)A	4.7 A	0.68 A
02-B	08/02/06	5.6 A	0.70 A	ND(0.50)A	0.94 A	ND(0.50)A
02-C	10/19/04	2.3 A	ND(0.50)A	ND(0.50)A	ND(0.50)A	ND(0.50)A
02-C	10/25/05	18. J	ND(0.50)J	ND(0.50)J	ND(0.50)J	ND(0.50)J
05-B	10/19/04	2.0 A	2.8 A	0.15 U/JH	1.0 A	0.19 A/J
05-B	01/11/05	4.6 A	5.5 A	ND(0.50)A	2.5 A	0.26 A/J
05-B	04/19/05	3.2 A	4.6 A	ND(0.50)A	1.4 A	0.24 A/J
05-B	07/28/05	5.3 A	6.8 A	ND(0.50)A	2.3 A	0.37 A/J
05-B	10/25/05	10. J	13. J	ND(0.50)J	4.4 J	0.37 J/J
05-B	01/25/06	9.1 A	11. A	ND(0.50)A	3.5 A	ND(0.50)A
05-B	05/01/06	5.1 A	6.4 A	ND(0.50)A	2.8 A	0.29 A/J
05-B	08/03/06	8.4 A	11. A	ND(0.50)A	4.6 A	0.38 A/J
05-C	10/19/04	36. A	1.1 A	ND(0.50)A	ND(0.50)A	ND(0.50)A
05-C	04/20/05	40. A	1.6 A	ND(0.50)J	ND(0.50)A	ND(0.50)A
05-C	10/25/05	74. J	2.1 J	ND(0.50)J	0.51 J	ND(0.50)J
05-C	05/02/06	54. A	1.7 A	ND(0.50)A	0.45 A/J	ND(0.50)A
09-B	10/19/04	8.9 A	13. A	ND(0.50)A	2.0 A	0.22 A/J
09-B	01/11/05	12. A	14. A	ND(0.50)A	2.8 A	0.23 A/J
09-B	04/19/05	9.9 A	14. A	ND(0.50)A	2.1 A	0.23 A/J
09-B	07/28/05	11. A	16. A	ND(0.50)A	2.5 A	0.26 A/J
09-B	10/25/05	13. J	17. J	ND(0.50)J	2.8 J	ND(0.50)J
09-B	01/25/06	12. A	14. A	ND(0.50)A	1.8 A	ND(0.50)A
09-B	05/01/06	8.6 A	10. A	ND(0.50)A	1.9 A	0.18 A/J
09-B	08/03/06	11. A	14. A	ND(0.50)A	2.9 A	0.25 A/J
09-D	10/19/04	6.4 A	0.68 A	ND(0.50)A	ND(0.50)A	ND(0.50)A
09-D	10/25/05	30. J	2.5 J	ND(0.50)J	ND(0.50)J	ND(0.50)J
10-B	10/18/04	3.0 A	1.2 A	ND(0.50)A	ND(0.50)A	ND(0.50)A
10-B	10/24/05	5.2 A	1.5 A	ND(0.50)A	ND(0.50)A	ND(0.50)A
13-B	10/19/04	2.5 A	3.1 A	0.13 U/JH	1.1 A	0.41 A/J
13-B	01/11/05	11. A	9.9 A	ND(0.50)A	5.3 A	0.49 A/J
13-B	04/19/05	9.6 A	11. A	ND(0.50)A	4.3 A	0.52 A
13-B	07/27/05	10. A	12. A	ND(0.50)A	5.4 A	0.52 A
13-B	10/25/05	13. J	13. J	ND(0.50)J	5.4 J	0.54 J
13-B	01/25/06	10. A	10. A	ND(0.50)A	4.1 A	0.42 A/J
13-B	05/01/06	9.1 A	9.3 A	ND(0.50)A	5.0 A	0.46 A/J
13-B	08/02/06	10. A	10. A	ND(0.50)A	5.2 A	0.51 A
13-D	10/18/04	2.4 A	1.4 A	ND(0.50)A	ND(0.50)A	ND(0.50)A
13-D	10/24/05	10. A	5.9 A	ND(0.50)A	0.82 A	ND(0.50)A
15-B	10/19/04	10. A	1.4 A	ND(0.50)A	ND(0.50)A	ND(0.50)A
15-B	04/20/05	11. A	1.6 A	ND(0.50)J	ND(0.50)A	ND(0.50)A
15-B	10/25/05	7.2 J	0.94 J	ND(0.50)J	ND(0.50)J	ND(0.50)J
15-B	05/01/06	11. A	1.2 A	ND(0.50)A	ND(0.50)A	ND(0.50)A
18-B	10/20/04	79. A	ND(0.50)A	ND(0.50)A	ND(0.50)A	ND(0.50)A
18-B	10/25/05	80. A	ND(0.50)A	ND(0.50)A	ND(0.50)A	ND(0.50)A

Table 2. IBM Offsite Monitoring Well Data – 2004 to 2006 (cont'd)

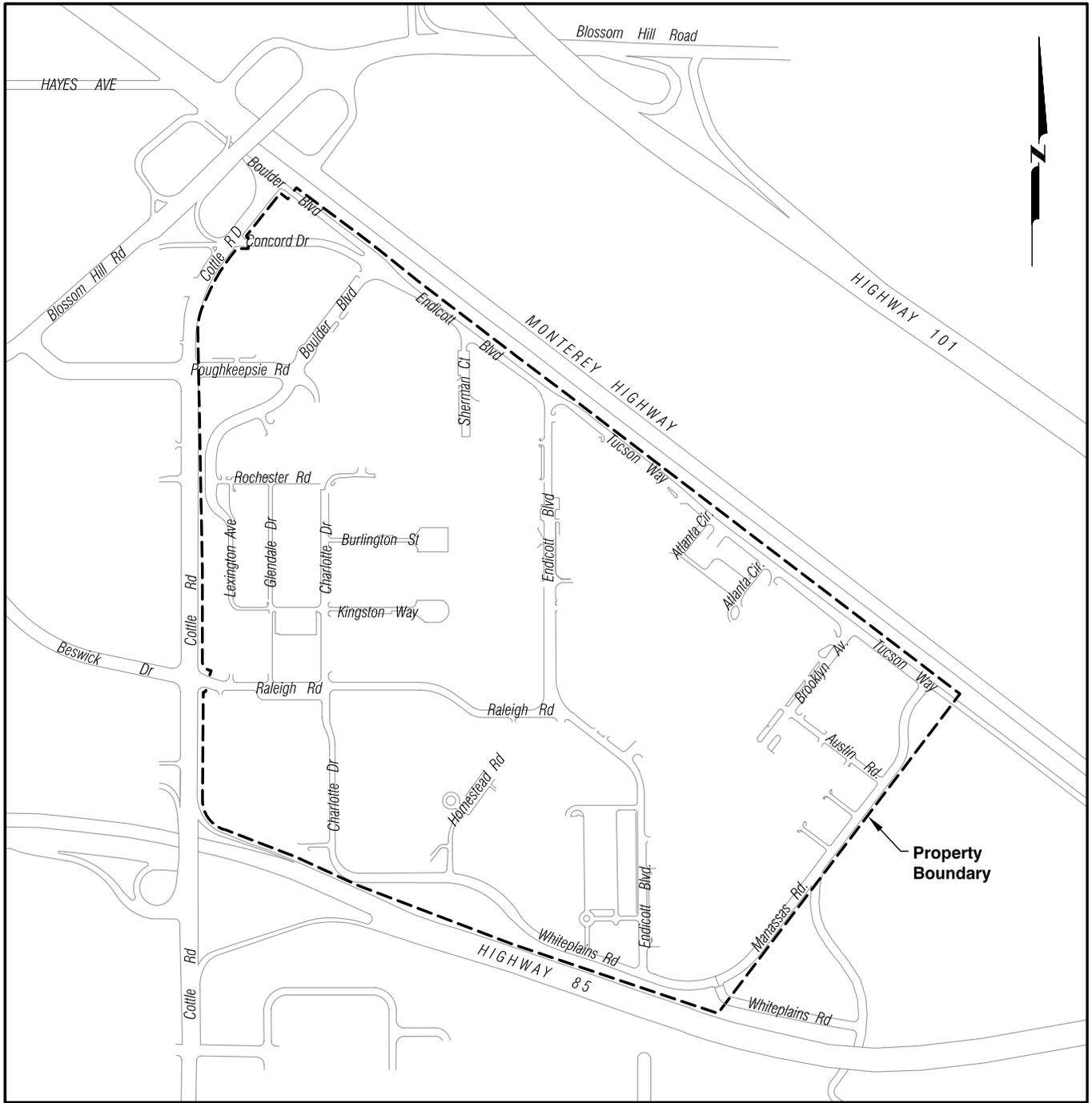
Well	Date	Freon 113	TCA	TCE	DCE	DCA
20-B	10/19/04	1.0 A/J	3.6 A	0.18 U/JH	ND (0.50)A	ND (0.50)A
20-B	01/11/05	0.65 A/J	1.6 A	ND (0.50)A	ND (0.50)A	ND (0.50)A
20-B	04/19/05	ND (2.0) A	0.93 A	ND (0.50)J	ND (0.50)A	ND (0.50)A
20-B	07/27/05	ND (4.0) A	ND (1.0) A	ND (1.0) A	ND (1.0) A	ND (1.0) A
20-B	10/25/05	4.0 J	3.9 J	ND (0.50)J	0.40 J/J	ND (0.50)J
20-B	01/25/06	ND (2.0) A	0.23 A/J	ND (0.50)A	ND (0.50)A	ND (0.50)A
20-B	05/01/06	ND (2.0) A	ND (0.50)A	ND (0.50)A	ND (0.50)A	ND (0.50)A
20-B	08/02/06	1.0 A/J	0.99 A	ND (0.50)A	ND (0.50)A	ND (0.50)A
23-B	10/19/04	46. A	13. A	ND (0.50)A	1.0 A	ND (0.50)A
23-B	01/11/05	5.8 A	1.8 A	ND (0.50)A	ND (0.50)A	ND (0.50)A
23-B	04/20/05	11. A	2.8 A	ND (0.50)J	ND (0.50)A	ND (0.50)A
23-B	07/27/05	7.7 A	1.7 A	ND (0.50)A	ND (0.50)A	ND (0.50)A
23-B	10/25/05	34. J	8.2 J	ND (0.50)J	0.63 J	ND (0.50)J
23-B	01/25/06	6.9 A	1.5 A	ND (0.50)A	ND (0.50)A	ND (0.50)A
23-B	05/02/06	38. A	10. A	ND (0.50)A	0.81 A	0.15 A/J
23-B	08/02/06	41. A	11. A	ND (0.50)A	ND (0.50)A	ND (0.50)A
24-B	10/18/04	4.9 A	4.5 A	ND (0.50)A	0.77 A	ND (0.50)A
24-B	01/11/05	5.1 A	4.0 A	ND (0.50)A	0.76 A	ND (0.50)A
24-B	04/19/05	4.6 A	3.9 A	ND (0.50)A	0.63 A	ND (0.50)A
24-B	07/28/05	1.6 A/J	1.3 A	ND (0.50)A	ND (0.50)A	ND (0.50)A
24-B	10/24/05	15. A	13. A	ND (0.50)A	1.7 A	ND (0.50)A
24-B	01/25/06	12. A	9.5 A	ND (0.50)A	1.3 A	ND (0.50)A
24-B	05/01/06	12. A	7.7 A	ND (0.50)A	1.7 A	ND (0.50)A
24-B	08/02/06	9.4 A	7.1 A	ND (0.50)A	1.2 A	ND (0.50)A
29-B	10/18/04	0.73 A/J	0.45 A/J	ND (0.50)A	ND (0.50)A	ND (0.50)A
29-B	01/11/05	1.1 A/J	1.1 A	ND (0.50)A	ND (0.50)A	ND (0.50)A
29-B	04/19/05	3.2 A	8.7 A	ND (0.50)A	0.52 A	ND (0.50)A
29-B	07/27/05	0.70 A/J	2.0 A	ND (0.50)A	ND (0.50)A	ND (0.50)A
29-B	10/24/05	1.4 A/J	1.3 A	ND (0.50)A	ND (0.50)A	ND (0.50)A
29-B	01/25/06	4.9 A	11. A	ND (0.50)A	0.52 A	ND (0.50)A
29-B	05/01/06	5.1 A	6.6 A	ND (0.50)A	0.52 A	ND (0.50)A
29-B	08/02/06	10. A	8.8 A	ND (0.50)A	0.79 A	ND (0.50)A
29-B	10/18/04	0.73 A/J	0.45 A/J	ND (0.50)A	ND (0.50)A	ND (0.50)A
30-BC	10/19/04	15. A	7.1 A	ND (0.50)A	0.57 A	ND (0.50)A
30-BC	01/11/05	16. A	6.4 A	ND (0.50)A	0.59 A	ND (0.50)A
30-BC	04/19/05	18. A	8.1 A	ND (0.50)A	0.63 A	ND (0.50)A
30-BC	07/28/05	17. A	7.0 A	ND (0.50)A	0.57 A	ND (0.50)A
30-BC	10/25/05	18. J	6.4 J	ND (0.50)J	0.54 J	ND (0.50)J
30-BC	01/25/06	21. A	11. A	ND (0.50)A	0.55 A	ND (0.50)A
30-BC	05/01/06	14. A	7.4 A	ND (0.50)A	0.63 A	ND (0.50)A
30-BC	08/02/06	10. A	5.6 A	ND (0.50)A	0.52 A	ND (0.50)A
38-BC	10/19/04	4.6 A	2.1 A	ND (0.50)A	ND (0.50)A	ND (0.50)A
38-BC	10/24/05	3.3 A	1.3 A	ND (0.50)A	ND (0.50)A	ND (0.50)A
45-BC	10/18/04	ND (2.0) A	ND (0.50)A	ND (0.50)A	ND (0.50)A	ND (0.50)A
45-BC	10/24/05	ND (2.0) A	ND (0.50)A	ND (0.50)A	ND (0.50)A	ND (0.50)A
46-BC	10/18/04	0.54 A/J	0.30 A/J	ND (0.50)A	ND (0.50)A	ND (0.50)A
46-BC	10/24/05	4.1 A	2.5 A	ND (0.50)A	ND (0.50)A	ND (0.50)A

All values in ug/L

- A, J – Laboratory qualifiers
- TCA – 1,1,1-trichloroethane
- TCE – trichloroethene
- DCE – 1,1-dichloroethene
- DCA – 1,1-dichloroethane

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**Appendix C**  
**Location Map**



**IBM Facility** - 5600 Cottle Road, San Jose, California

