GRIBI Associates *Geological and Environmental Consulting Services*

FACSIMILE TRANSMITTAL

Date: April 3, 1998

To: MADHULLA LOGAN
ALAMEDA COUNTY HEALTH
SERVICES AGENCY

Fax No: (510)337-9335

From: JIM GRIBI
Phone/Fax: (707)864-5543

Number of pages (including this transmittal): 13

Madhulla,

Attached find addendum to recent Tier 2 RBCA for Former Oakland Tribune Site in Oakland, California. I will mail a hard copy to you tomorrow.

Please call if you have questions or need additional info.

Thanks!
JIM

884 Vintage Avenue • Suisun • California • 94585 • Phone/Fax (707)864-5543

GRIBI Associates
Geological and Environmental Consulting Services

April 3, 1998

UST Local Oversight Program
Alameda County Health Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Attention: Ms. Madhulla Logan

Subject: Addendum to Tier 2 RBCA Assessment
Former Oakland Tribune Site
2302 Valdez Street, Oakland, California
Alameda County LOP Site ID 3663
GA 125-01-02

Ladies and Gentlemen:

Pursuant to our telephone conversation on Thursday, April 2, 1998, this letter provides revisions to the recently-completed Tier 2 RBCA Assessment conducted for the subject site in Oakland, California. Your concerns, as we understand them, include: (1) The need to assess risk at the project site itself using the most current groundwater analytical data from wells located within the project site building to calculate representative groundwater concentrations; and (2) The need to address potential offsite risk to the residential apartment building located about 70 feet south from the project site. These concerns are addressed below.

Risk Assessment Within the Project Site Building

In order to provide a more representative assessment of risk, we ran the GSI RBCA computer model with the following changes:

- For representative groundwater concentrations, we used the mean BTEX concentrations from the last three sampling events for inside project site wells MW-1, MW-2, and MW-4 (the other inside project site wells, MW-3, MW-5, and MW-6, were not sampled for BTEX constituents during the last three sampling events). We used the mean, rather than the 90% UCL mean, because only nine samples were used to calculate representative COC concentrations, rather than 24 samples as was previously used.

- We used residential, rather than commercial, receptors for outdoor air and indoor air exposure pathways, thereby providing a more conservative assessment of risk at the site.

- We changed the foundation crack fraction to 0.05, rather than the default value of 0.01.

Copies of output pages from the GSI RBCA computer model incorporating these changes are included in Attachment A. These changes result in the following risk calculations:

Table 1
TOTAL PATHWAY RISK ESTIMATES
Former Oakland Tribune Site

Exposure Pathway	Carcinogenic Risk				Toxic Effects Risk			
	Individual COC Risk		Cumulative COC Risk		Individual COC Risk		Cumulative COC Risk	
	Maximum Value	Target Risk	Total Value	Target Risk	Hazard Quotient	Applicable Limit	Hazard Index	Applicable Limit
Outdoor air exposure pathways	7.0×10^{-7}	1×10^{-5}	7.0×10^{-7}	1×10^{-4}	9.7×10^{-3}	1	9.9×10^{-3}	1
Indoor air exposure pathways	5.5×10^{-6}	1×10^{-5}	5.5×10^{-6}	1×10^{-4}	7.5×10^{-2}	1	7.7×10^{-2}	1
Soil Exposure Pathways	NC	1×10^{-5}	NC	1×10^{-4}	NC	1	NC	1
Groundwater exposure pathways	5.2×10^{-22}	1×10^{-5}	5.2×10^{-22}	1×10^{-4}	6.0×10^{-11}	1	9.2×10^{-11}	1

Thus, while these changes have resulted in different risk calculations, the overall conclusions for project site risk have not changed. Model risk calculations indicate that remaining hydrocarbons in subsurface soils and groundwater at the site pose no significant risk to possible residential receptors at the project site. Note that there is no indication that the project site will ever be used as residential property.

Risk Assessment For Offsite Residential Receptors

The only identified potentially downgradient residential receptor is a residential apartment building located about 70 feet south from the project site, on the southeast corner of 23rd Street and Valdez Street. A revised site plan showing the location of this residential apartment building is included in Attachment B.

Based on groundwater analytical results from wells MW-2, MW-4, and MW-8, it does not appear that groundwater in the vicinity of the residential apartment building has been significantly impacted by hydrocarbon releases from the project site. Both historical and recent groundwater data from these wells shows extremely low to nondetectable levels of BTEX constituents in these wells. Because these wells are located in an approximately downgradient direction between the former USTs and this residential apartment building, these low to nondetectable BTEX results clearly indicate little or no impact to groundwater in the vicinity of this residential apartment building.

Groundwater analytical results from MW-9, located in 23rd Street southeast from the project site, indicate BTEX impacts to groundwater in this location. Although this well is not located upgradient from the residential apartment building, we ran the GSI RBCA computer model using the most recent groundwater analytical data from MW-9 as representative COC concentrations. Copies of

output pages from the GSI RBCA model are included in Attachment B. Using these concentrations, the only calculated risk for onsite residential receptors which exceeds the target risk value of 1.0×10^{-5} is indoor air exposure to Benzene, for which the calculated risk is 1.5×10^{-5}. Thus, even if groundwater concentrations at this residential apartment building were at levels detected in MW-9 (which they undoubtedly are not), the health risk for residential receptors would be only slightly above the target risk value.

Conclusions

Based on results of revised risk calculations, we conclude that: (1) Remaining hydrocarbons in subsurface soils and groundwater at the site pose no significant risk to any possible commercial or residential receptors at the project site; and (2) Soil and groundwater in the vicinity of the nearby offsite residential apartment building do not appear to be significantly hydrocarbon-impacted and, hence, do not pose a significant risk to this offsite residential receptor.

Based on these conclusions, we request that Alameda County Department of Environmental Health grant regulatory closure for this site.

We appreciate the opportunity to present this information for your review. Please call if you have questions or require additional information.

Very truly yours,

James E. Gribi
Registered Geologist
California No. 5843

REGISTERED GEOLOGIST
JAMES E. GRIBI
No. 5843
STATE OF CALIFORNIA

JEG/ct
Enclosure

c Mr. Chad Schwartz, Esq.
Mr. Arthur Goldman, Ritchie Commercial

File: GA-14/rc-alam lt1

ATTACHMENT A

GSI RBCA MODEL OUTPUT TABLES FOR PROJECT SITE BUILDING USING REVISED INPUT PARAMETERS

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Former Oak Trib UST Site Job Identification: Oakland Tribune RBCA Software: GSI RBCA Spreadsheet
Site Location: 2302 Valdez Street, Oakland, Date Completed: 3/9/98 Version: 1.0.1
Completed By: James E. Gribi

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined

Exposure Parameter	Definition (Units)	Residential: Adult	Residential: (1-4 yrs)	Residential: (1-16 yrs)	Commercial/Industrial: Chronic	Commercial/Industrial: Constrctn
ATc	Averaging time for carcinogens (yr)	70				
ATn	Averaging time for non-carcinogens (yr)	30	5	16	25	1
BW	Body Weight (kg)	70	15	35	70	
ED	Exposure Duration (yr)	30	5	16	25	1
[illegible]	Averaging time for vapor flux (yr)	30			25	1
EF	Exposure Frequency (days/yr)	350			250	180
EF Derm	Exposure Frequency for dermal exposure	350			250	
IRgw	Ingestion Rate of Water (L/day)	2				
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100
IRadj	Adjusted soil ing. rate (mg-yr/kg-d)	8.1E+02			9.4E+01	
IRa.in	Inhalation rate indoor (m^3/day)	15			20	
IRa.out	Inhalation rate outdoor (m^3/day)	20			20	10
SA	Skin surface areas (dermal) (cm^2)	5.8E+03		2.8E+03	5.8E+03	5.8E+03
SAadj	Adjusted dermal area (cm^2-yr/kg)	2.1E+03			1.7E+03	
M	Soil to Skin adherence factor	1				
AAFs	Age adjustment on soil ingestion	FALSE			FALSE	
AAFd	Age adjustment on skin surface area	FALSE			FALSE	
tox	Use EPA tox data for air (or PEL based)?	TRUE				
gwMCL?	Use MCL as exposure limit in groundwater?	FALSE				

Matrix of Exposed Persons to Complete Exposure Pathways		Residential	Commercial/Industrial: Chronic	Commercial/Industrial: Constrctn
Outdoor Air Pathways:				
SS.v	Volatiles and Particulates from Surface Soils	FALSE	FALSE	TRUE
S.v	Volatilization from Subsurface Soils	TRUE	FALSE	
GW.v	Volatilization from Groundwater	TRUE	FALSE	
Indoor Air Pathways:				
S.b	Vapors from Subsurface Soils	TRUE	FALSE	
GW.b	Vapors from Groundwater	TRUE	FALSE	
Soil Pathways:				
SS.d	Direct Ingestion and Dermal Contact	FALSE	TRUE	TRUE
Groundwater Pathways:				
GW.I	Groundwater Ingestion	TRUE	FALSE	
S.l	Leaching to Groundwater from all Soils	TRUE	FALSE	

Matrix of Receptor Distance and Location On- or Off-Site		Residential: Distance	Residential: On-Site	Commercial/Industrial: Distance	Commercial/Industrial: On-Site
GW	Groundwater receptor (cm)	2.4E+04	FALSE	2.4E+04	FALSE
S	Inhalation receptor (cm)		TRUE		FALSE

Matrix of Target Risks		Individual	Cumulative
TRab	Target Risk (class A/B carcinogens)	1.0E-05	
TRc	Target Risk (class C carcinogens)	1.0E-05	
THQ	Target Hazard Quotient	1.0E+00	
Opt	Calculation Option (1, 2, or 3)	3	
Tier	RBCA Tier	2	

Surface Parameters	Definition (Units)	Residential	Constrctn
A	Contaminated soil area (cm^2)	5.1E+06	5.1E+06
W	Length of affect. soil parallel to wind (cm)	1.5E+03	1.0E+00
W.gw	Length of affect. soil parallel to groundwater (cm	1.5E+03	
Uair	Ambient air velocity in mixing zone (cm/s)	2.3E+02	
delta	Air mixing zone height (cm)	2.0E+02	
Lss	Thickness of affected surface soils (cm)		
Pe	Particulate emission rate (g/cm^2/s)	6.9E-14	

Groundwater	Definition (Units)	Value
delta.gw	Groundwater mixing zone depth (cm)	2.0E+02
I	Groundwater infiltration rate (cm/yr)	3.0E+01
Ugw	Groundwater Darcy velocity (cm/yr)	2.2E+01
Ugw.tr	Groundwater seepage velocity (cm/yr)	3.6E+01
Ks	Saturated hydraulic conductivity (cm/s)	1.0E-04
grad	Groundwater gradient (cm/cm)	7.0E-03
Sw	Width of groundwater source zone (cm)	2.4E+03
Sd	Depth of groundwater source zone (cm)	4.6E+02
ph.eff	Effective porosity in water-bearing unit	3.8E-0[illegible]
foc.sat	Fraction organic carbon in water bearing unit	1.0E-03
BIO?	Is biodegradation considered?	TRUE
BC	Biodegradation Capacity (mg/L)	

Soil	Definition (Units)	Value	capillary	vadose	foundation
hc	Capillary zone thickness (cm)	5.0E+00			
hv	Vadose zone thickness (cm)	4.6E+02			
rhos	Soil density (g/cm^3)	1.7			
foc	Fraction of organic carbon in vadose zone	0.01			
phs	Soil porosity in vadose zone	0.38			
Lgw	Depth to groundwater (cm)	4.1E+02			
Ls	Depth to top of affected subsurface soil (cm)	3.4E+02			
Lsubs	Thickness of affected subsurface soils (cm)	7.4E+01			
pH	Soil/groundwater pH	6.5			
phs.w	Volumetric water content		0.342	0.12	0.12
phs.a	Volumetric air content		0.038	0.26	0.26

Building	Definition (Units)	Residential	Commercial
Lb	Building volume/area ratio (cm)	2.0E+02	3.0E+02
ER	Building air exchange rate (s^-1)	1.4E-04	2.3E-04
Lcrk	Foundation crack thickness (cm)	1.5E+01	
eta	Foundation crack fraction	0.03	

Transport Parameters	Definition (Units)	Residential	Commercial
Groundwater			
ax	Longitudinal dispersivity (cm)	2.4E+03	
ay	Transverse dispersivity (cm)	8.0E+02	
az	Vertical dispersivity (cm)	1.2E+02	
Vapor			
dcy	Transverse dispersion coefficient (cm)		
dcz	Vertical dispersion coefficient (cm)		

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RBCA SITE ASSESSMENT | **Input Screen 7**

REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

CONSTITUENT	Representative COC Concentration					
	In Groundwater		In Surface Soil		In Subsurface Soil	
	value (mg/L)	note	value (mg/kg)	note	value (mg/kg)	note
Benzene	6.5E-3	mean			9.7E-2	UCL
Ethylbenzene	7.8E-3	mean			1.1E-1	UCL
Toluene	2.2E-3	mean			1.2E-1	UCL
Xylene (mixed isomers)	6.7E-3	mean			3.5E-1	UCL

Site Name: Former Oak. Tnb.UST Site
Site Location: 2302 Valdez Street, Oakland, CA

Completed By: James E. Gribi
Date Completed: 3/9/1998

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Site Name: Former Oak Trib.UST Site
Site Location: 2302 Valdez Street, Oakland, CA

Completed By: James E. Gribi
Date Completed: 3/9/1998

TIER 2 BASELINE RISK SUMMARY TABLE

	BASELINE CARCINOGENIC RISK					BASELINE TOXIC EFFECTS				
	Individual COC Risk		Cumulative COC Risk		Risk Limit(s) Exceeded?	Hazard Quotient		Hazard Index		Toxicity Limit(s) Exceeded?
EXPOSURE PATHWAY	Maximum Value	Target Risk	Total Value	Target Risk		Maximum Value	Applicable Limit	Total Value	Applicable Limit	
[illegible]										
Complete:	7.0E-9	1.0E-5	7.0E-9	N/A	☐	9.7E-5	1.0E+0	9.9E-5	N/A	☐
[illegible]										
Complete:	5.5E-6	1.0E-5	5.5E-6	N/A	☐	7.5E-2	1.0E+0	7.7E-2	N/A	☐
[illegible]										
Complete:	NC	1.0E-5	NC	N/A	■	NC	1.0E+0	NC	N/A	■
[illegible]										
Complete:	5.2E-22	1.0E-5	5.2E-22	N/A	☐	6.0E-37	1.0E+0	9.2E-37	N/A	☐
[illegible]										
	5.5E-6	1.0E-5	5.5E-6	N/A	☐	7.5E-2	1.0E+0	7.7E-2	N/A	☐

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Software: GSI RBCA Spreadsheet
Version: 1.0.1

Serial: G-487-QXX-168

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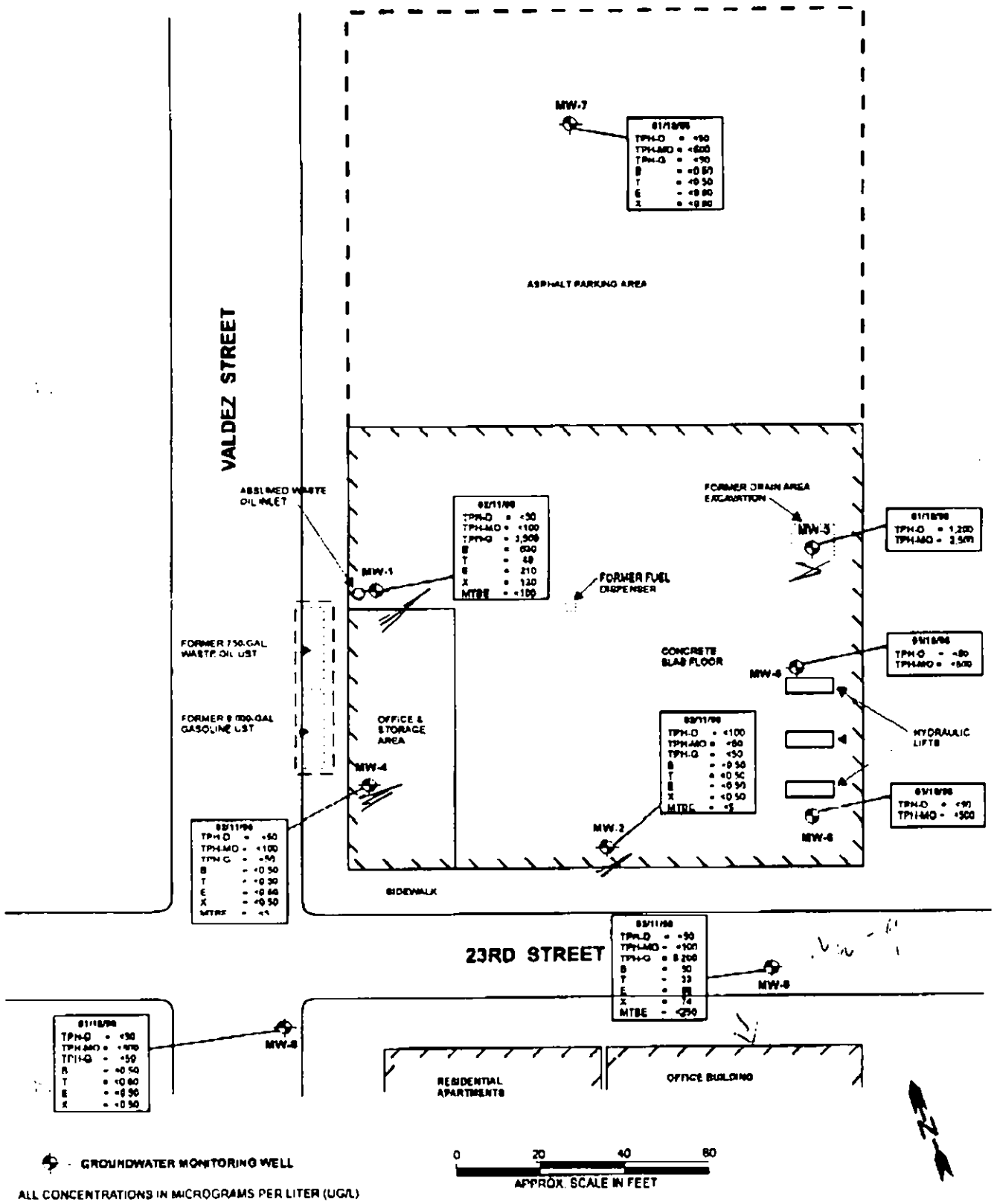
ATTACHMENT B

REVISED SITE PLAN AND GSI RBCA MODEL OUTPUT FOR OFFSITE RESIDENTIAL APARTMENT BUILDING



DESIGNED BY.	CHECKED BY	GROUNDWATER HYDROCARBON RESULTS, VARIOUS DATES FORMER OAKLAND TRIBUNE SHOP OAKLAND, CALIFORNIA	DATE: 02/27/98	FIGURE: 5
DRAWN BY. JG	SCALE.		GRIBI Associates	
PROJECT NO: 125-01-02				

RBCA TIER 1/TIER 2 EVALUATION

Output Table 1

Site Name: Former Oak. Trib UST Site Job Identification: Oakland Tribune RBCA Software: GSI RBCA Spreadsheet
Site Location: 2302 Valdez Street, Oakland, Calif Date Completed: 3/9/98 Version: 1.0 1
Completed By: James E Gribi

NOTE: values which differ from Tier 1 default values are shown in bold italics and underlined

Exposure Parameter	Definition (Units)	Residential Adult	Residential (1-6 yrs)	Residential (1-16 yrs)	Commercial/Industrial Chronic	Commercial/Industrial Constructn
ATc	Averaging time for carcinogens (yr)	70				
ATn	Averaging time for non-carcinogens (yr)	30	6	16	25	1
BW	Body Weight (kg)	70	15	35	70	
ED	Exposure Duration (yr)	30	6	16	25	1
t	Averaging time for vapor flux (yr)	30			25	1
EF	Exposure Frequency (days/yr)	350			250	180
EF Derm	Exposure Frequency for dermal exposure	350			250	
IRgw	Ingestion Rate of Water (L/day)	2			1	
IRs	Ingestion Rate of Soil (mg/day)	100	200		50	100
IRadj	Adjusted soil ing rate (mg-yr/kg-d)	1.1E+02			9.4E+01	
IRa in	Inhalation rate indoor (m^3/day)	15			20	
IRa out	Inhalation rate outdoor (m^3/day)	20			20	10
SA	Skin surface area (dermal) (cm^2)	5.8E+00		2.0E+03	5.8E+00	5.8E+03
SAadj	Adjusted dermal area (cm^2-yr/kg)	2.1E+03			1.7E+00	
M	Soil to Skin adherence factor	1				
AAFs	Age adjustment on soil ingestion	FALSE			FALSE	
AAFd	Age adjustment on skin surface area	FALSE			FALSE	
tox	Use EPA tox data for air (or PEL based)?	TRUE				
gwMCL?	Use MCL as exposure limit in groundwater?	FALSE				

Matrix of Exposed Persons to Complete Exposure Pathways		Residential	Commercial/Industrial Chronic	Commercial/Industrial Constructn
Outdoor Air Pathways:				
SS,v	Volatiles and Particulates from Surface Soils	FALSE	FALSE	TRUE
S,v	Volatilization from Subsurface Soils	TRUE	FALSE	
GW v	Volatilization from Groundwater	TRUE	FALSE	
Indoor Air Pathways:				
S,b	Vapors from Subsurface Soils	TRUE	FALSE	
GW,b	Vapors from Groundwater	TRUE	FALSE	
Soil Pathways:				
SS,d	Direct Ingestion and Dermal Contact	FALSE	TRUE	TRUE
Groundwater Pathways:				
GW,a	Groundwater Ingestion	TRUE	FALSE	
S,l	Leaching to Groundwater from all Soils	TRUE	FALSE	

Matrix of Receptor Distance and Location On- or Off-Site		Residential Distance	Residential On-Site	Commercial/Industrial Distance	Commercial/Industrial On-Site
GW	Groundwater receptor (cm)	2.4E+04	FALSE	2.4E+04	FALSE
S	Inhalation receptor (cm)		TRUE		FALSE

Matrix of Target Risks		Individual	Cumulative
TRa	Target Risk (class A&B carcinogens)	1.0E-05	
TRc	Target Risk (class C carcinogens)	1.0E-05	
THQ	Target Hazard Quotient	1.0E+00	
Opt	Calculation Option (1, 2, or 3)	3	
Tier	RBCA Tier	2	

Surface Parameters	Definition (Units)	Residential	Constructn
A	Contaminated soil area (cm^2)	5.1E+09	5.1E+09
W	Length of affect. soil parallel to wind (cm)	1.5E+05	1.0E+00
W gw	Length of affect. soil parallel to groundwater (cm	1.5E+02	
Uair	Ambient air velocity in mixing zone (cm/s)	2.3E+02	
delta	Air mixing zone height (cm)	2.0E+02	
Lss	Thickness of affected surface soils (cm)		
Pe	Particulate areal emission rate (g/cm^2/s)	6.9E-14	

Groundwater	Definition (Units)	Value
delta gw	Groundwater mixing zone depth (cm)	2.0E+02
I	Groundwater infiltration rate (cm/yr)	3.0E+01
Ugw	Groundwater Darcy velocity (cm/yr)	2.2E+01
Ugw,s	Groundwater seepage velocity (cm/yr)	5.6E+01
Ks	Saturated hydraulic conductivity(cm/s)	1.0E-04
grad	Groundwater gradient (cm/cm)	7.0E-02
Sw	Width of groundwater source zone (cm)	2.4E+03
Sd	Depth of groundwater source zone (cm)	4.6E+02
phi eff	Effective porosity in water-bearing unit	3.8E-01
foc sat	Fraction organic carbon in water-bearing unit	1.0E-03
BIO?	Is biattenuation considered?	TRUE
BC	Biodegradation Capacity (mg/L)	

Soil	Definition (Units):	Value		
hc	Capillary zone thickness (cm)	5.0E+00		
hv	Vadose zone thickness (cm)	4.0E+02		
rho	Soil density (g/cm^3)	1.7		
foc	Fraction of organic carbon in vadose zone	0.01		
phs	Soil porosity in vadose zone	0.38		
Lgw	Depth to groundwater (cm)	4.1E+02		
Ls	Depth to top of affected subsurface soil (cm)	3.4E+02		
Lsubs	Thickness of affected subsurface soils (cm)	7.4E+01		
pH	Soil/groundwater pH	6.5		
		capillary	vadose	foundation
phi w	Volumetric water content	0.342	0.12	0.12
phi a	Volumetric air content	0.038	0.26	0.26

Building	Definition (Units)	Residential	Commercial
Lb	Building volume/area ratio (cm)	2.0E+02	3.0E+02
ER	Building air exchange rate (s^-1)	1.4E-04	2.3E-04
Lcrk	Foundation crack thickness (cm)	1.5E+01	
eta	Foundation crack fraction	0.03	

Transport Parameters	Definition (Units)	Residential	Commercial
Groundwater			
ax	Longitudinal dispersivity (cm)	2.4E+00	
ay	Transverse dispersivity (cm)	8.0E+02	
az	Vertical dispersivity (cm)	1.2E+02	
Vapor			
dcy	Transverse dispersion coefficient (cm)		
dcz	Vertical dispersion coefficient (cm)		

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RBCA SITE ASSESSMENT | Input Screen 7

REPRESENTATIVE COC CONCENTRATIONS IN SOURCE MEDIA

(Complete the following table)

CONSTITUENT	Representative COC Concentration					
	in Groundwater		in Surface Soil		in Subsurface Soil	
	value (mg/L)	note	value (mg/kg)	note	value (mg/kg)	note
Benzene	5.0E-2	max			9.7E-2	UCL
Ethylbenzene	9.6E-2	max			1.1E-1	UCL
Toluene	3.3E-2	max			1.2E-1	UCL
Xylene (mixed isomers)	7.4E-2	max			3.5E-1	UCL

Site Name: Former Oak Trib UST Site
Site Location: 2302 Valdez Street, Oakland, CA

Completed By: James E. Gribi
Date Completed: 3/6/1998

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RBCA SITE ASSESSMENT | **Tier 2 Worksheet 8.3**

Site Name: Former Oak. Trib.UST Site
Site Location: 2302 Valdez Street, Oakland, CA

Completed By: James E. Gribi
Date Completed: 3/8/1998

TIER 2 BASELINE RISK SUMMARY TABLE

	BASELINE CARCINOGENIC RISK					BASELINE TOXIC EFFECTS				
	Individual COC Risk		Cumulative COC Risk		Risk Limit(s) Exceeded?	Hazard Quotient		Hazard Index		Toxicity Limit(s) Exceeded?
EXPOSURE PATHWAY	Maximum Value	Target Risk	Total Value	Target Risk		Maximum Value	Applicable Limit	Total Value	Applicable Limit	
Complete:	2.0E-8	1.0E-5	2.0E-8	N/A	☐	2.8E-4	1.0E+0	2.8E-4	N/A	☐
Complete:	1.5E-5	1.0E-5	1.5E-5	N/A	■	2.0E-1	1.0E+0	2.1E-1	N/A	☐
Complete:	NC	1.0E-5	NC	N/A	■	NC	1.0E+0	NC	N/A	■
Complete:	5.2E-22	1.0E-5	5.2E-22	N/A	☐	6.0E-37	1.0E+0	9.3E-37	N/A	☐
	1.5E-5	1.0E-5	1.5E-5	N/A	■	2.0E-1	1.0E+0	2.1E-1	N/A	☐

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