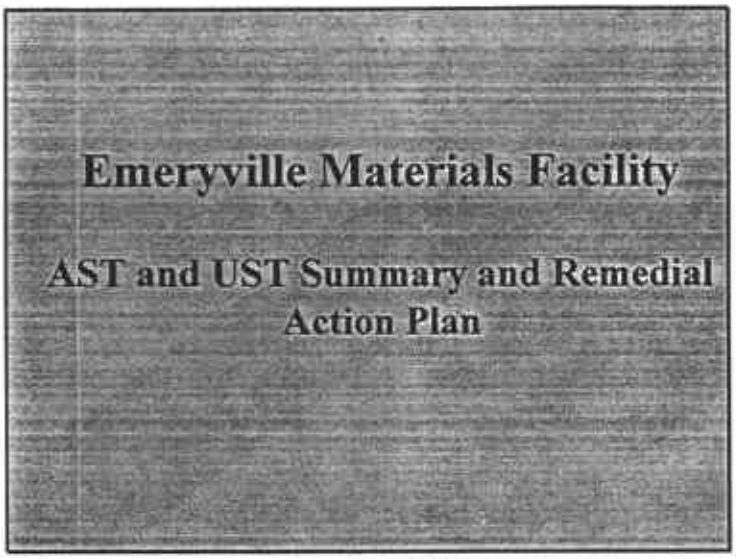
Slide 1



8/5/99 Thursday @ or site meeting

Written response by 9/5/99 →

→ MTBE go ahead

→ documentation ? ES-4 closure

→ reason why 3 wells = 5.

Slide 6

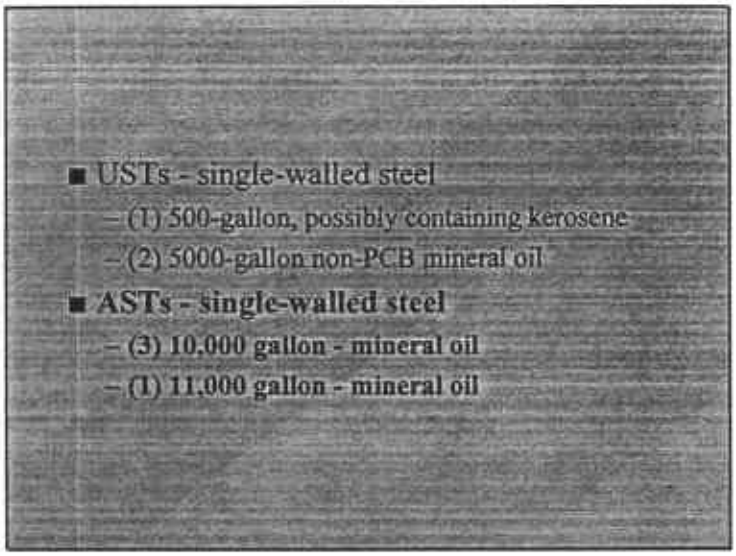

Facility
4525 Hollis Street, Emeryville
16.5 acres
Temescal Creek culverted through property
10 monitoring wells on site
7 Pre-existing (installed 1987)
3 Associated with AST (installed 1994)
Warehouse, repair shop, storage yard

Slide 9

Site Geology and Hydrogeology

- Site underlain by approximately 3 - 8 ft. fill
- Followed by Pleistocene alluvial fan deposits
  - Silty and sandy clay with discontinous gravel
- **Groundwater**
  - **6 - 8 ft. above sea level**
  - **12.5 - 14.5 ft. below grade**
  - **Flow direction westerly toward Bay**

Slide 11


■ USTs - single-walled steel
– (1) 500-gallon, possibly containing kerosene
– (2) 5000-gallon non-PCB mineral oil
■ ASTs - single-walled steel
– (3) 10,000 gallon - mineral oil
– (1) 11,000 gallon - mineral oil

Slide 15

UST Removals

- 500 Gallon - Steel Single-Walled Tank
  - Present when property purchased
  - Never used by PG&E
  - Contents unknown but believed to be kerosene
- Excavated in October 1991
  - Confirmation Sampling
- Over excavation in November 1991
  - Confirmation Sampling
- **Closure form submitted with report**

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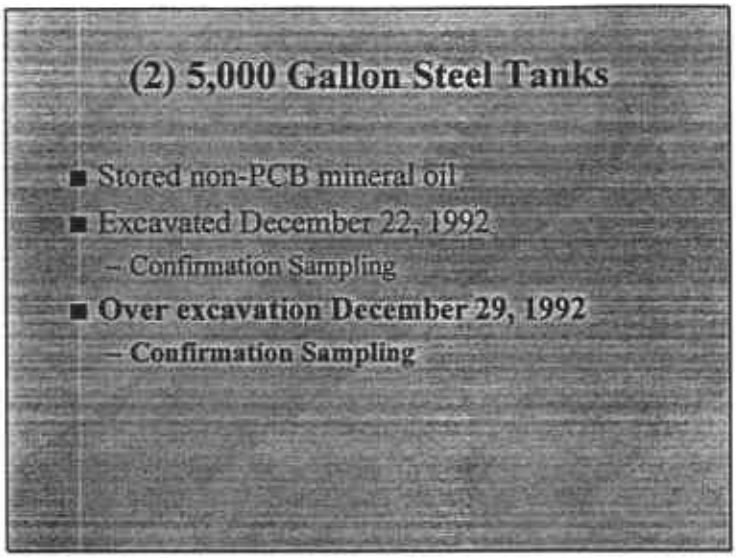

(2) 5,000 Gallon Steel Tanks
■ Stored non-PCB mineral oil
■ Excavated December 22, 1992
– Confirmation Sampling
■ Over excavation December 29, 1992
– Confirmation Sampling

Slide 23

AST Investigation

- October 1993 soil investigation
- March 1994 groundwater investigation
- October 1996 soil investigation
- Groundwater monitoring
- **RBCA Analysis**

Slide 27

October 1993 Soil Investigation

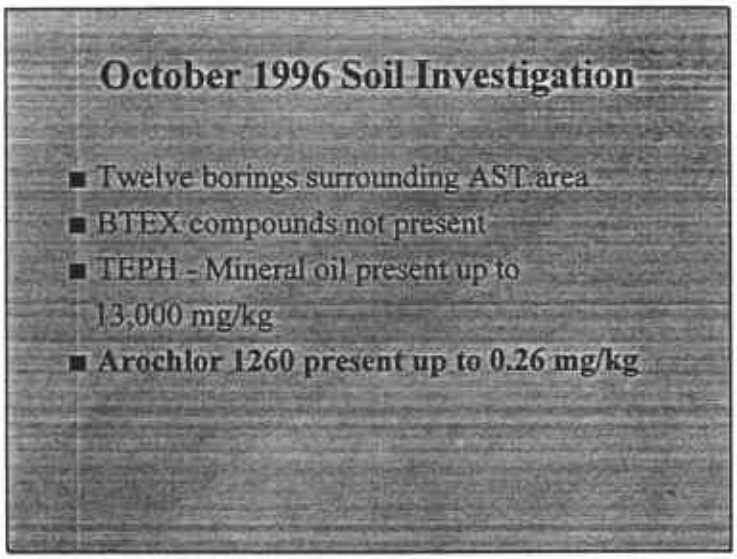
- Nine soil borings
- Groundwater not encountered
- Aroclor 1260 present at concentrations up to 385 mg/kg.
- **TEPH - Mineral oil present at concentrations up to 16,000 mg/kg.**

Slide 33

March 1994 Groundwater Investigation

- Four monitoring wells installed
- Groundwater under confined conditions at 10 - 11.8 ft. bgs
- Groundwater flows west with a gradient of 0.02 ft/ft
- No PCBs found in soil or groundwater
- TEPH - Mineral oil present in groundwater at up to 340 µg/l
- **VOCs present in wells ESE-1 and ESE-2**

Slide 37


October 1996 Soil Investigation
Twelve borings surrounding AST area
BTEX compounds not present
TEPH - Mineral oil present up to 13,000 mg/kg
Arochlor 1260 present up to 0.26 mg/kg

Slide 39

Quartery Groundwater Monitoring

- 3/94 through Present
- **No petroleum compounds or PCBs present in any wells since November 1997.**

Slide 42

Risk Based Corrective Action (RBCA) Analysis

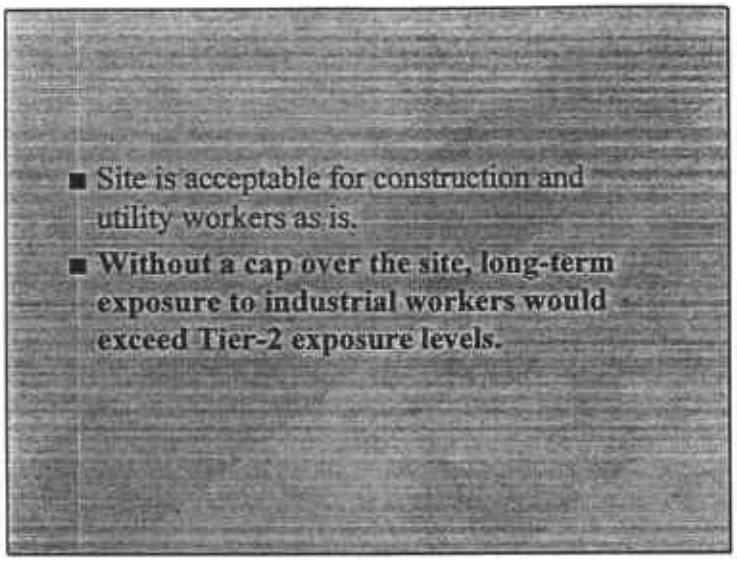
- Tier-1 Analysis identified PCB as chemical of concern.
- Hazardous constituents of mineral oil are present at extremely low concentrations.
- **Tier-2 evaluation used for PCBs**

Slide 46

Tier-2 Evaluation

- Direct contact with soil
- Evaluated construction worker, utility line workers and industrial workers.
- Future construction and utility worker exposure evaluated to 10 ft depth.
- **Future industrial worker exposure evaluated to 2 ft. depth.**

Slide 48


■ Site is acceptable for construction and utility workers as is.
■ Without a cap over the site, long-term exposure to industrial workers would exceed Tier-2 exposure levels.

Slide 50

Conclusions and Recommendations

USTs

- 500-gallon tank
  - Closure requested
- **(2) 5000-gallon tanks**
  - **limited groundwater investigation**

Slide 53

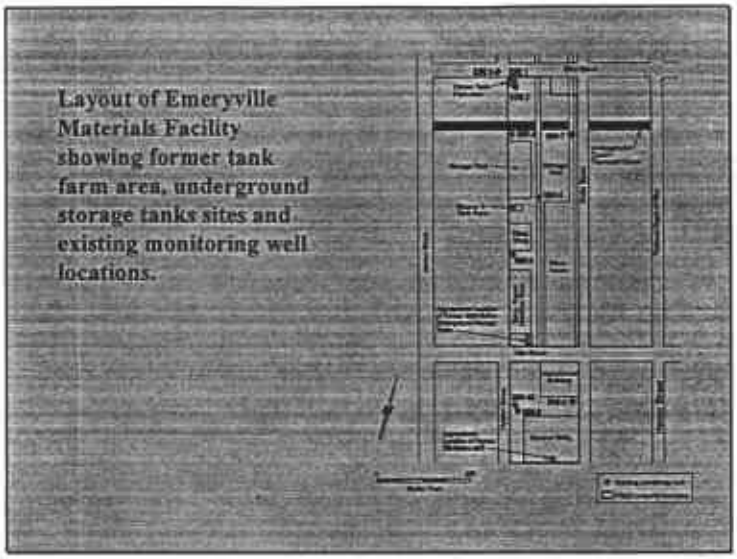
Conclusions and Recommendations

ASTs

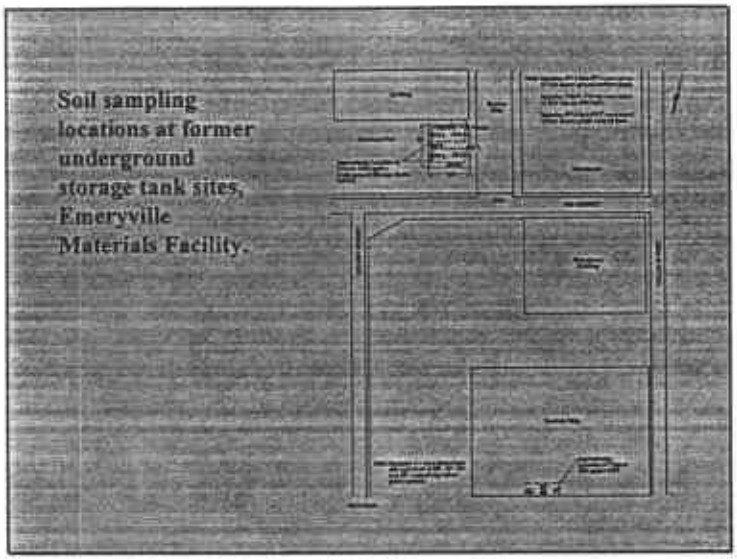
- Excavate soils to 9 ft. bgs at B1, B9 and B16.
- Excavation combined with addition of fill to grade will protect all future construction, utility and industrial workers.
- **Abandon all existing monitoring wells.**

Slide 1

Slide 2

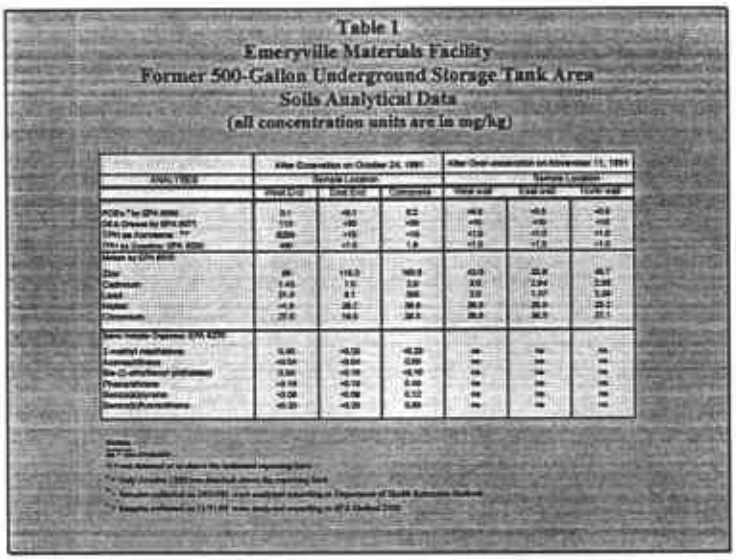

Layout of Emeryville Materials Facility showing former tank farm area, underground storage tanks sites and existing monitoring well locations.

Slide 3

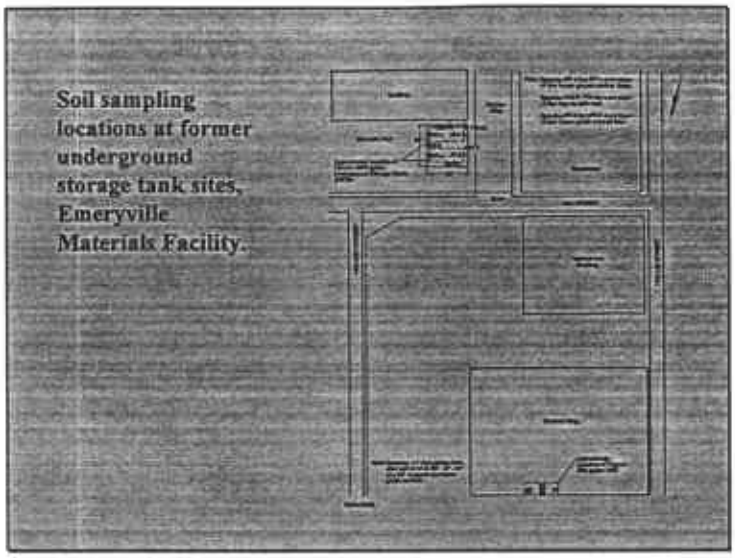

Soil sampling locations at former underground storage tank sites, Emeryville Materials Facility.

Slide 4

Table 1
Emeryville Materials Facility
Former 500-Gallon Underground Storage Tank Area
Soils Analytical Data
(all concentration units are in mg/kg)

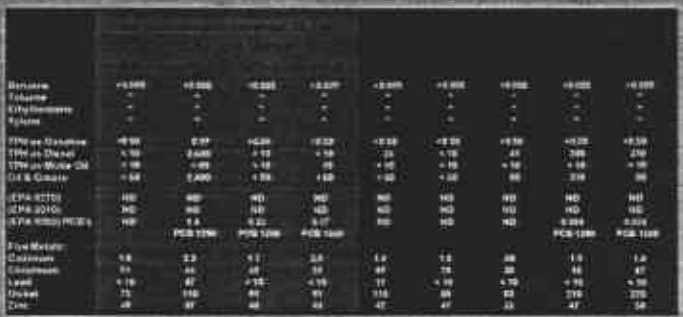


Slide 5


Soil sampling locations at former underground storage tank sites, Emeryville Materials Facility.

Slide 6

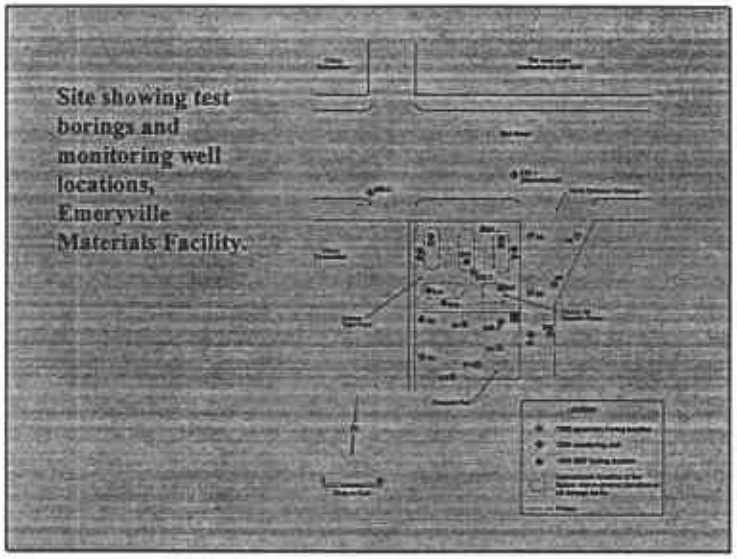
Table 2
Emeryville Materials Facility
Two (2) 5000-Gallon Non-PCB Mineral Oil Underground Storage Tanks
Soil Analytical Data
(all concentration units are in mg/kg)



Benzene										
Toluene										
Ethylbenzene										
Xylene										
TPH as Gasoline										
TPH as Diesel										
TPH as Motor Oil										
Oil & Grease										
(EPA 8270)										
(EPA 8310)										
(EPA 8082) PCB's										
		PCB 1254	PCB 1260	PCB 1248					PCB-1260	PCB 1248
Five Metals:										
Cadmium										
Chromium										
Lead										
Nickel										
Zinc										

n.d. = not detected at or above the indicated reporting limit

Slide 7

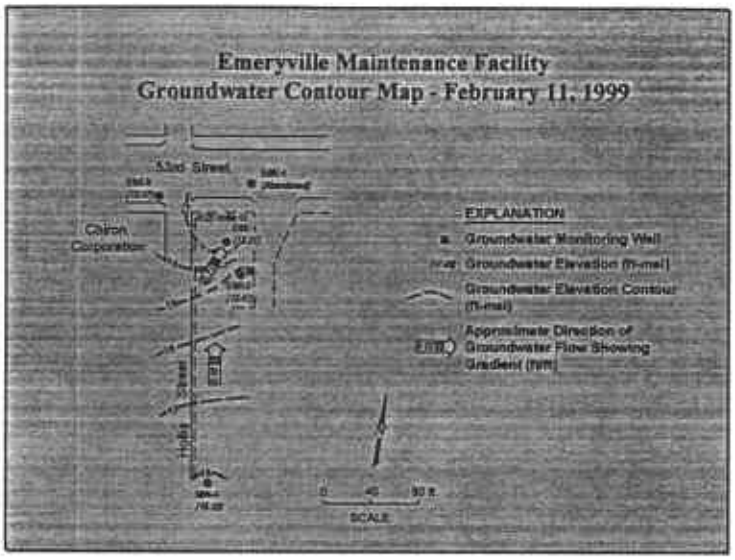

Site showing test borings and monitoring well locations, Emeryville Materials Facility.

Slide 8

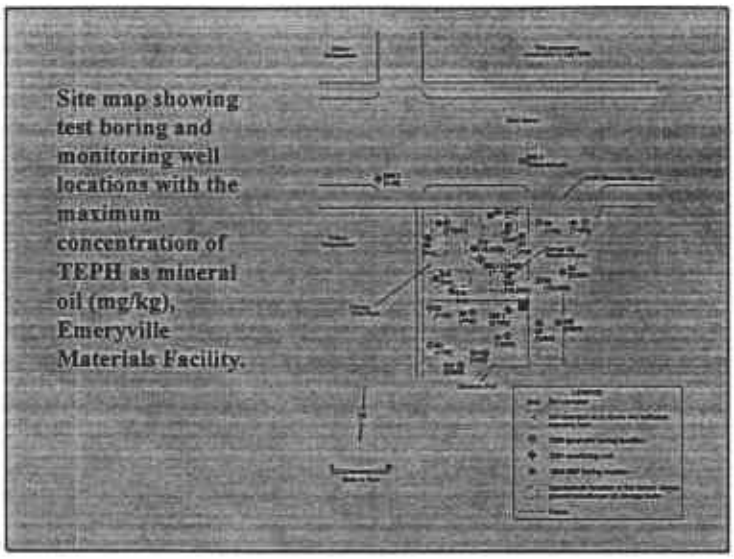
Table 3
Emeryville Materials Facility
Historical Analytical Data - Last Four Quarters

Sample Designation	Sampling Date	[illegible] (µg/L)	TEPH as Motor Oil (µg/L)	MTBE (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
ESE-1	08/21/98	<0.5	<500	—	<0.5	<0.5	<0.5	<0.5
ESE-1	12/01/98	<0.50 / <0.34[a]	100 / <100[b]	—	<0.50	<0.50	<0.50	<0.50
ESE-1	02/11/99	<0.50	<100[b]	—	<0.50	<0.50	<0.50	<0.50
ESE-1	03/12/99	<1	<100[b]	<5	<0.50	<0.50	<0.50	<0.50
ESE-2	08/21/98	<0.5	<500	—	<0.5	<0.5	<0.5	<0.5
ESE-2	12/01/98	<0.50 / <0.34[a]	<100 / <100[b]	—	<0.50	<0.50	<0.50	<0.50
ESE-2	02/11/99	<0.50	<100[b]	—	<0.50	<0.50	<0.50	<0.50
ESE-2	03/12/99	<1	<500[b]	<5	<0.50	<0.50	<0.50	<0.50
ESE-3	08/21/98	<0.5	<500	—	<0.5	<0.5	<0.5	<0.5
ESE-3	12/01/98	<0.50 / <0.50	<100 / <100	—	<0.50	<0.50	<0.50	<0.50
ESE-3	02/11/99	<0.50	<100[b]	—	<0.50	<0.50	<0.50	<0.50
ESE-3	03/12/99	<1	<500[b]	<5	<0.50	<0.50	<0.50	<0.50

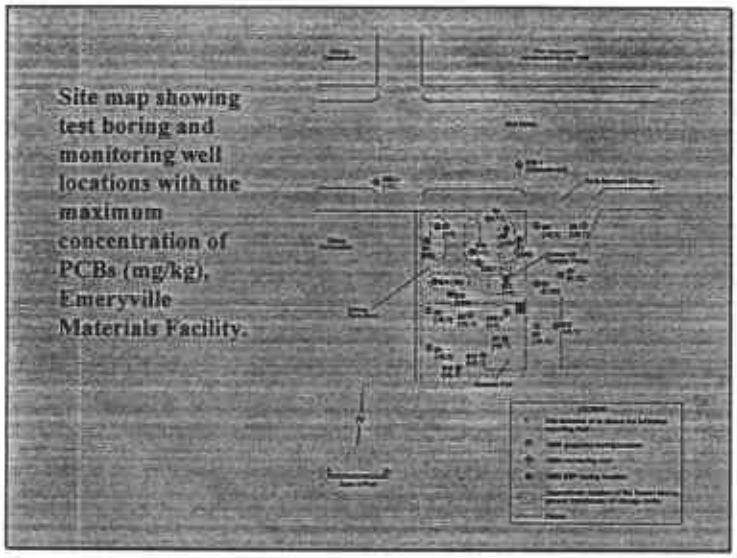
Slide 9


Emeryville Maintenance Facility
Groundwater Contour Map - February 11, 1999
53rd Street
Chiron Corporation
Hollis Street
EXPLANATION
Groundwater Monitoring Well
Groundwater Elevation (ft-msl)
Groundwater Elevation Contour (ft-msl)
Approximate Direction of Groundwater Flow Showing Gradient (ft/ft)
SCALE

Slide 10


Site map showing test boring and monitoring well locations with the maximum concentration of TEPH as mineral oil (mg/kg), Emeryville Materials Facility.

Slide 11


Site map showing test boring and monitoring well locations with the maximum concentration of PCBs (mg/kg), Emeryville Materials Facility.

Slide 12

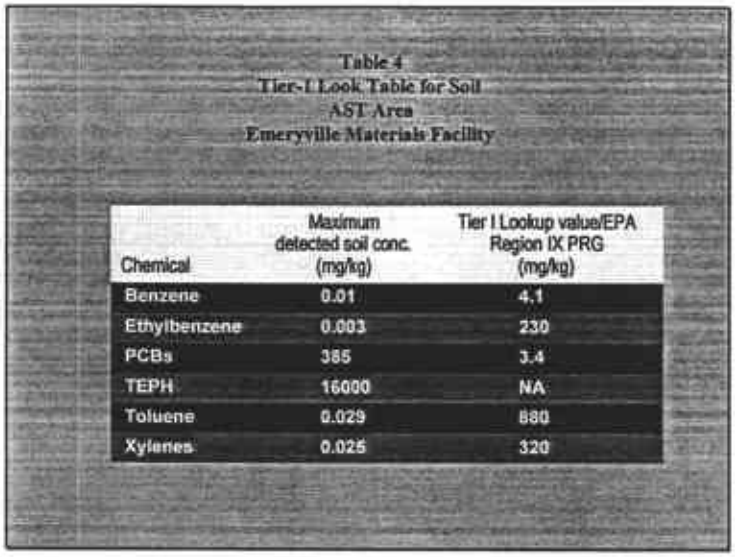


Table 4
Tier-I Look Table for Soil
AST Area
Emeryville Materials Facility

Chemical	Maximum detected soil conc. (mg/kg)	Tier I Lookup value/EPA Region IX PRG (mg/kg)
Benzene	0.01	4.1
Ethylbenzene	0.003	230
PCBs	385	3.4
TEPH	16000	NA
Toluene	0.029	880
Xylenes	0.025	320

Slide 13

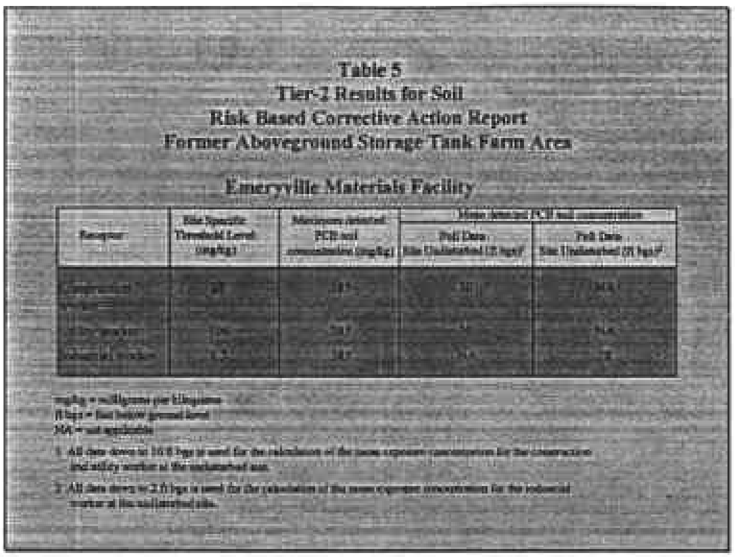
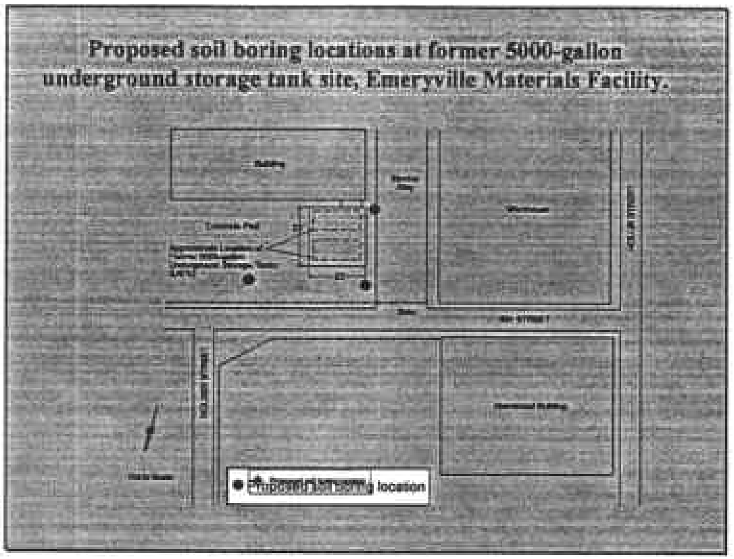
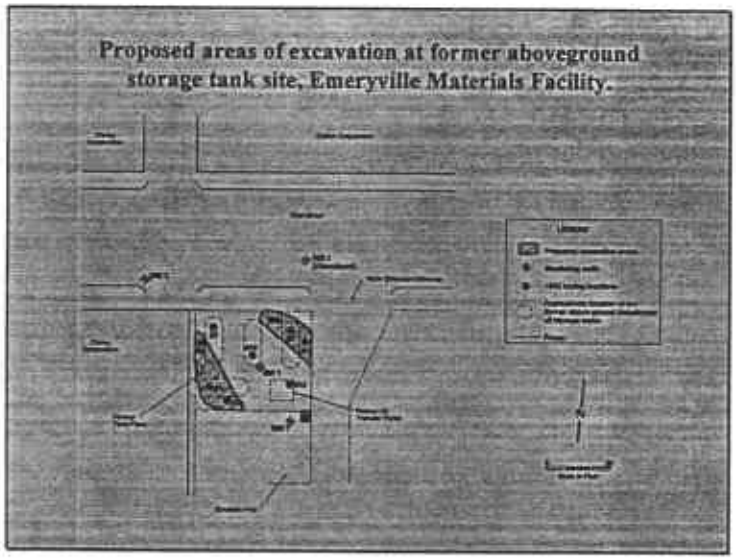


Table 5
Tier-2 Results for Soil
Risk Based Corrective Action Report
Former Aboveground Storage Tank Farm Area
Emeryville Materials Facility

Slide 14


Proposed soil boring locations at former 5000-gallon
underground storage tank site, Emeryville Materials Facility.

Slide 15


Proposed areas of excavation at former aboveground storage tank site, Emeryville Materials Facility.