

Conor Pacific

- Extent of contain not delineated either to west (of source) or north or south

- Asking Facsimile client about 1" wells

To: Ms. Eva Chu, Alameda County Environmental Health Services

From: Robert E. Langdon

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Re: Cargill Salt, Concurrence on well locations

Date: October 18, 1999

Proj. No.: CRA 101

Number of pages including cover sheet: 9

- final report coming after MW installation

Remarks: Urgent Please review Reply ASAP Please Comment

10/22 - Check say 1" wells made verbal approval for MW's

Ms. Chu,

We have completed the groundwater sampling phase of our workplan for groundwater characterization and monitoring well installation at 2016 Clement Avenue, Alameda. The purpose of this first phase of field work was to characterize the extent of VOCs in groundwater and properly locate three groundwater monitoring wells. This was accomplished by sampling groundwater at multiple depths along two transects of borings. Transect boring locations are shown on the attached site map.

Analytical results for PCE and TCE from transect samples were plotted in cross-sectional view (attached) in order to visualize the three-dimensional extent of the groundwater plume across the site (a complete summary of analytical results is presented in an attached table). Based on these plots, we've selected three monitoring well locations for long-term monitoring of the groundwater plume at the site.

Proposed monitoring well MW-1 (see attached site map) would be placed between borings B-9 and B-10 to monitor the core of the plume at its northern extent on site. Proposed monitoring well MW-2, located west of boring B-1, would monitor the western extent of the plume on site. Proposed monitoring well MW-3 would monitor for potential concentrations of VOCs in groundwater along the eastern edge of the site.

The monitoring wells will be constructed within the outer drive rods of the drill rig using 1-inch-diameter, Schedule 40, flush-threaded PVC casing and 0.010-inch, machine-slotted screen. Based on the results of the transect analyses, a fifteen-foot interval of groundwater will be screened from approximately 6 to 21 feet bgs. A 030 sand pack will be placed in the annular space around the casing from the bottom of the open boring to approximately 1.0 foot above the top of the well screen. At least a 2-foot-thick seal of bentonite pellets will be placed above the sand pack. Above the bentonite, a sanitary seal of neat cement will be placed to

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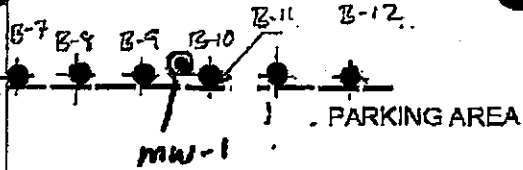
within one foot of the ground surface. A water-tight vault will be installed at the surface. All well heads will be capped with water-tight locking expansion well caps. Well construction will be recorded on a well completion diagram.

We are planning on installing the wells by early November and are requesting your concurrence of the selected locations.

cc: Mark Wheeler, Crawford Consulting

Clement Avenue

DRAFT



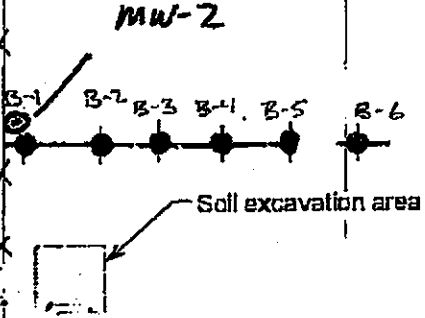
Property Line

VACANT SIDE (Unpaved)

DRIVEWAY (Paved)

FACILITY BUILDING

- Proposed monitoring well location
- Grab b.w. sample location



0 20 Feet

Scale

CRAWFORD CONSULTING 16085433815



Crawford Consulting Inc.

Project CS 1605
 Cargill Salt Dispensing Systems Division
 2016 Clement Avenue, Alameda, California
 Figure 3. Proposed Groundwater Sampling and Monitoring Well Locations

Transect B-7 → B-12, Looking South

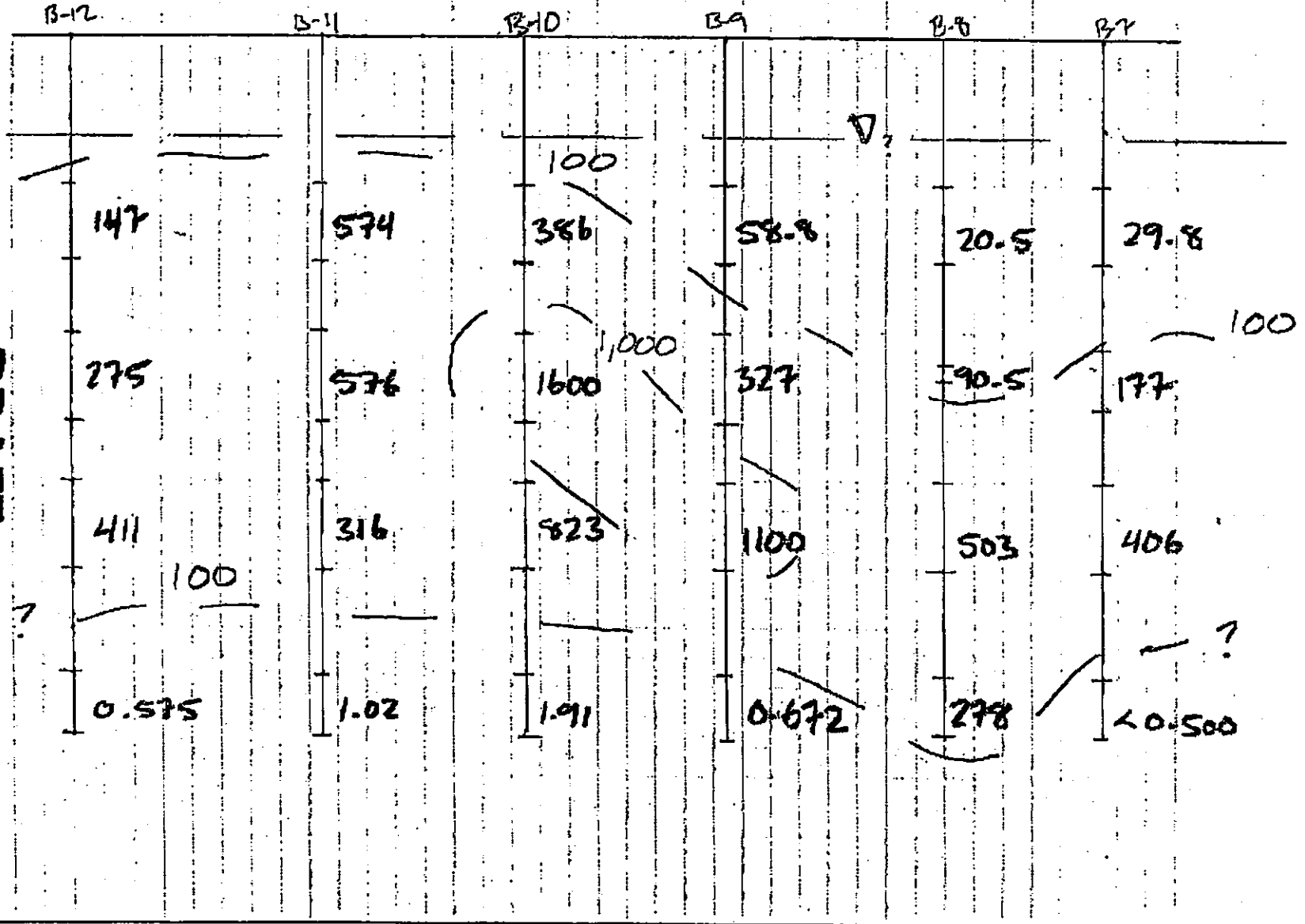
X = 1" = 5'
 Y = 1" = 5'

PCE (µg/L)

DRAFT

Checked by

R. LANGDON



2/4

TRANSECT B-1 → B-6, looking Southward

x 1" = 5'
y 1" = 5'

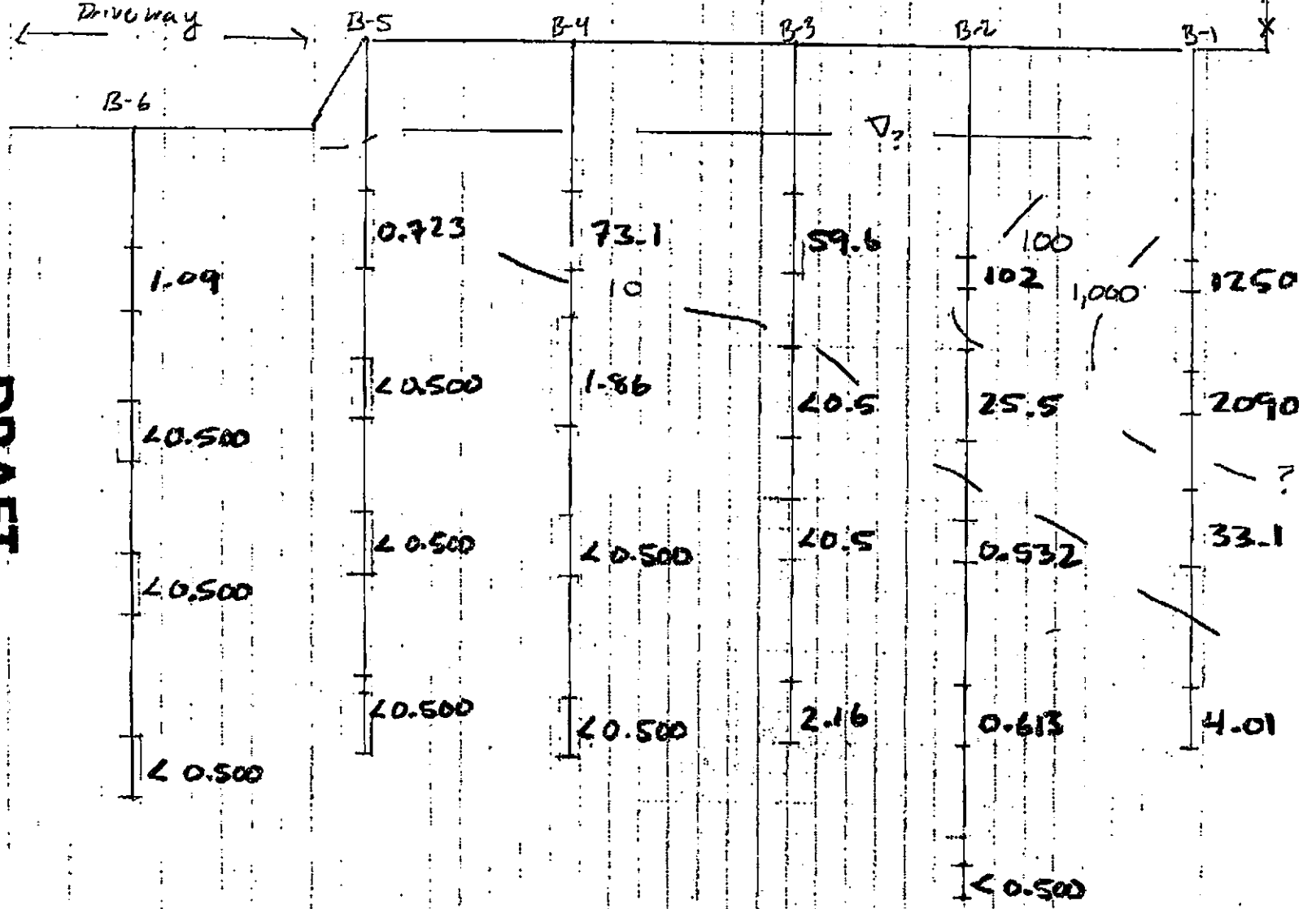
PCE (µg/L)

PROP. LINE

Checked by

DRAFT

DRA101
D. LANGDON



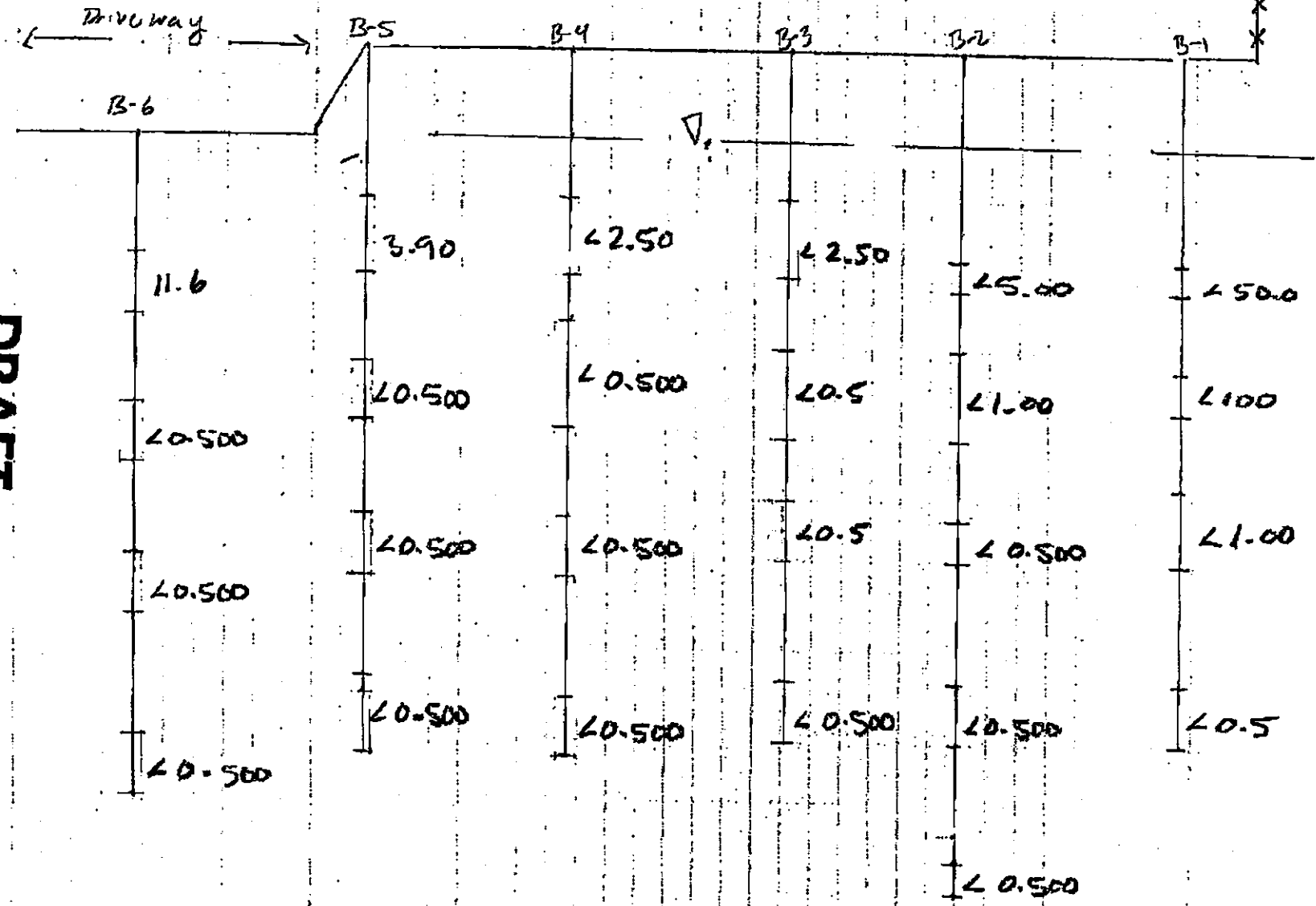
3/4

TRANSECT B-1 → B-6, looking Southward

x 1" = 5'
y 1" = 5'

TLE (M₂/L)

PROP. LINE



DRAFT

Checked by P. J. ...

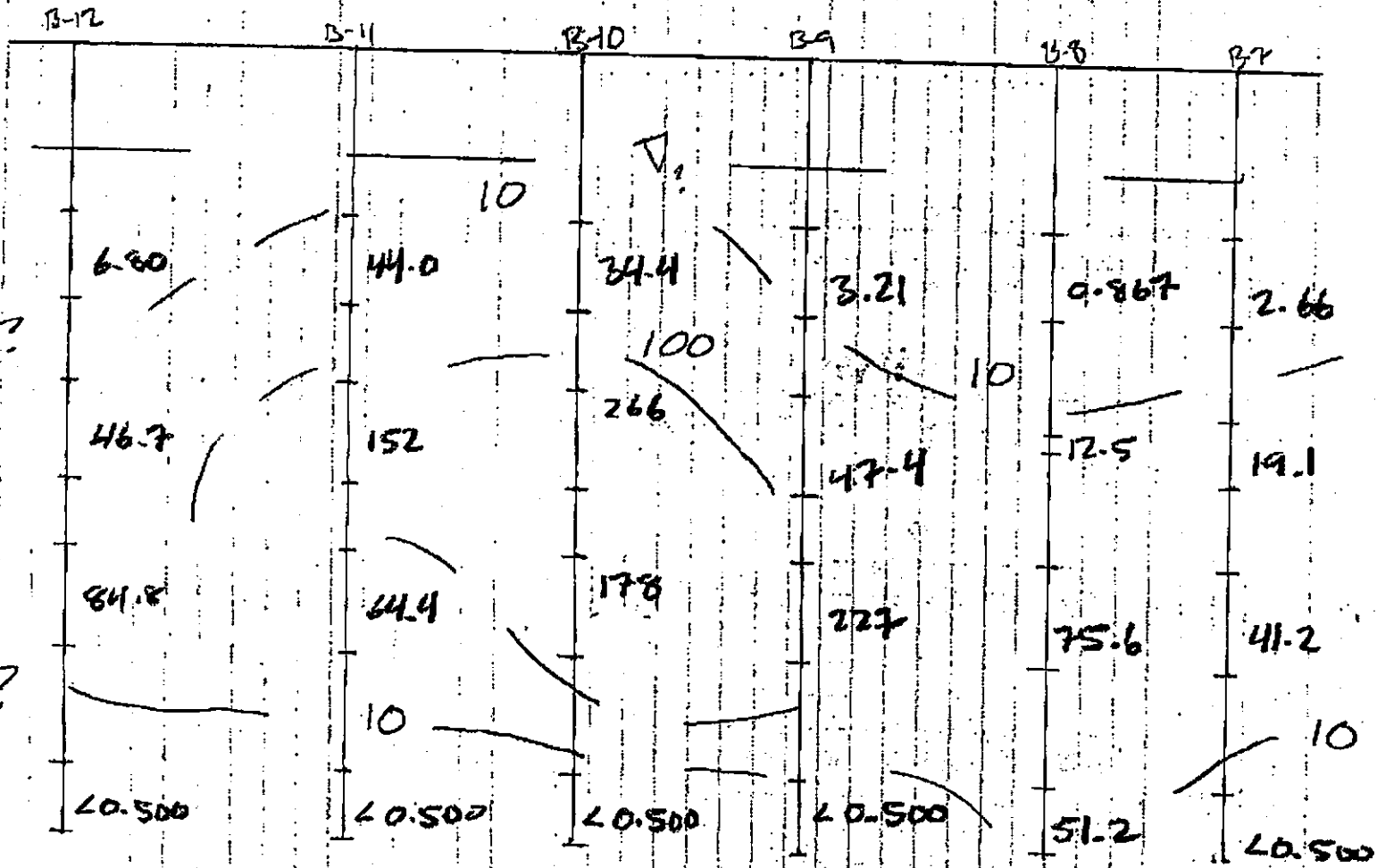
DRAWN BY P. LANGDON

Transect B-7 → B-12, Looking Southward

X = 1" = 5'
 Y = 1" = 5'

TCE (µg/L)

DRAFT



Checked by

W. LANGDON
 10/14/99

VOC Concentrations in Groundwater¹
 Cargill Salt, Alameda
 August 1999

Transect Sample Designation	Sample Depth ft. bgs	PCE (ppb)	TCE (ppb)	1,1-DCE (ppb)	c-1,2-DCE (ppb)	1,1,1-TCA (ppb)
B-1-7.5	7.0-8.0	1250	<50.0	<50.0	<50.0	<50.0
B-1-11.5	10.5-12.0	2090	<100	<100	<100	<100
B-1-16.5	14.5-17.0	33.1	<1.00	<1.00	<1.00	<1.00
B-1-22.5	21.0-23.0	4.01	<0.500	<0.500	<0.500	<0.500
B-2-7.5	7.0-8.0	102	<5.00	<5.00	<5.00	<5.00
B-2-11.5	10.0-13.0	25.6	<1.00	<1.00	<1.00	<1.00
B-2-16.5	15.5-17.0	0.532	<0.500	<0.500	<0.500	<0.500
B-2-22.5	21.0-23.0	0.613	<0.500	<0.500	<0.500	<0.500
B-2-27.5	27.0-28.0	<0.500	<0.500	<0.500	<0.500	<0.500
B-3-6.5	5.0-7.5	59.6	<2.50	<2.50	<2.50	<2.50
B-3-11.5	10.0-13.0	<0.500	<0.500	<0.500	<0.500	<0.500
B-3-16.5	15.0-17.0	<0.500	<0.500	<0.500	<0.500	<0.500
B-3-22.5	21.0-23.0	2.16	<0.500	<0.500	<0.500	<0.500
B-4-6.5	5.0-7.0	73.1	<2.50	<2.50	<2.50	<2.50
B-4-11.5	9.0-12.5	1.86	<0.500	<0.500	<0.500	<0.500
B-4-16.5	15.5-17.5	<0.500	<0.500	<0.500	<0.500	<0.500
B-4-22.5	21.5-23.5	<0.500	<0.500	<0.500	<0.500	<0.500
B-5-6.5	5.0-7.5	0.723	3.90	<0.500	<0.500	<0.500
B-5-11.5	10.5-12.5	<0.500	<0.500	<0.500	<0.500	<0.500
B-5-16.5	15.5-17.5	<0.500	<0.500	<0.500	<0.500	<0.500
B-5-22.5	21.5-23.5	<0.500	<0.500	<0.500	<0.500	<0.500
B-6-5.0	4.0-6.0	1.09	11.6	<0.500	0.87	<0.500
B-6-10.0	9.0-11.0	<0.500	<0.500	<0.500	<0.500	<0.500
B-6-15.0	14.0-16.0	<0.500	<0.500	<0.500	<0.500	<0.500
B-6-21.0	20.0-22.0	<0.500	<0.500	<0.500	<0.500	<0.500
B-7-6.5	5.0-7.5	29.8	2.66	<1.00	<1.00	<1.00
B-7-11.5	10.5-12.5	177	19.1	<2.50	<2.50	<2.50
B-7-16.5	15.0-18.0	406	41.2	<10.0	<10.0	<10.0
B-7-22.5	21.5-23.5	<0.500	<0.500	<0.500	<0.500	<0.500
B-8-6.5	5.0-7.5	20.5	0.867	<0.500	<0.500	<0.500
B-8-11.5	11.0-11.5	90.5 ^{2a}	12.5	<0.500	<0.500	0.664 ⁴
B-8-16.5	15.0-18.0	503	75.6	<10.0	<10.0	<10.0
B-8-22.5	21.5-23.5	278	51.2	<5.00	<5.00	<5.00

VOC Concentrations in Groundwater¹
 Cargill Salt, Alameda
 August 1999

Transect Sample Designation	Sample Depth ft. bgs	PCE (ppb)	TCE (ppb)	1,1-DCE (ppb)	c-1,2-DCE (ppb)	1,1,1-TCA (ppb)
B-9-6.5	5.0-7.5	58.8	3.21	<2.50	<2.50	<2.50
B-9-11.5	10.0-13.0	327	47.4	<10.0	<10.0	<10.0
B-9-16.5	15.0-18.0	1100	227	<25.0	<25.0	<25.0
B-9-22.5	21.5-23.5	0.672	<0.500	<0.500	<0.500	<0.500
B-10-6.5	5.0-7.5	386	34.4	<10.0	<10.0	<10.0
B-10-11.5	10.0-13.0	1600	266	<50.0	<50.0	<50.0
B-10-16.5	15.0-18.0	823	178	<25.0	<25.0	<25.0
B-10-22.5	21.5-23.5	1.91	<0.500	<0.500	<0.500	<0.500
B-11-6.5	5.0-7.5	574	44.0	<12.5	<12.5	<12.5
B-11-11.5	10.0-13.0	576	152	10.9	<10.0	<10.0
B-11-16.5	15.0-18.0	316	64.4	6.04	<5.00	<5.00
B-11-22.5	21.5-23.5	1.02	<0.500	<0.500	<0.500	<0.500
B-12-6.5	5.0-7.5	147	6.80	<5.00	<5.00	<5.00
B-12-11.5	10.0-13.0	275	46.7	<5.00	<5.00	<5.00
B-12-16.5	15.0-18.0	411	84.8	<10.0	<10.0	<10.0
B-12-22.5	21.5-23.5	0.575	<0.500	<0.500	<0.500	<0.500

Notes:

¹ Groundwater sampled by EPA Method 8021B, only Method 8010 list reported, all other Method 8010 list constituents not reported in this table are below the reporting limit

² This value is considered an estimate

³ Due to insufficient sample availability, a dilution could not be analyzed on this sample

⁴ Due to insufficient sample availability, a confirmation could not be analyzed for this sample