Former Fort Ord Operable Unit 2 Data and Status

HTW BCT Meeting, January 27, 2021

Table 1: Dec 2020 – OU2 GWTP Statistics

Monthly Statistics	Volume Treated (gallons)	Average Flow (gallons per minute)	Percent of Time Online	COC Mass Removed (pounds)
Dec 2020	38,216,304	856	100	2.6
Total since October 1995	8.360 billion			904

Table 2: Nov 2020 – Jan 2021 – OU2 Analytical Results at TS-OU2-INJ-01

COC	Discharge Limit (µg/L)	Analytical Results (µg/L)	
		11/16/2020	01/11/2021
1,1-dichloroethane (1,1-DCA)	5.0*	ND (0.25)	ND (0.25)
1,2-dichloroethane (1,2-DCA)	0.5	ND (0.25)	0.25 J
1,2-dichloropropane (1,2-DCP)	0.5	ND (0.25)	ND (0.25)
Benzene	0.5	ND (0.25)	ND (0.25)
Carbon tetrachloride (CT)	0.5	ND (0.25)	ND (0.25)
Chloroform	2.0*	ND (0.25)	0.13 J
Cis-1,2-dichloroethene (cis-1,2-DCE)	6.0*	ND (0.25)	0.13 J
Methylene Chloride	0.5	ND (0.50)	ND (0.50)
Tetrachloroethene (PCE)	0.5	ND (0.25)	ND (0.25)
Trichloroethene (TCE)	0.5	ND (0.25)	ND (0.25)
Vinyl chloride (VC)	0.1	ND (0.05)	ND (0.05)

Notes:
COC: chemical of concern
µg/L: micrograms per liter
ND: The analyte was not detected above the limit of detection (LOD).
NS: not sampled.
J: Estimated results below the limit of quantitation (LOQ).
TS-OU2-INJ: Injection point of compliance, the OU2 effluent pipeline.
*Discharge limits for low carbon affinity compounds were increased to the Aquifer Cleanup Level (ACL).
Results in italics are above the discharge limit, and results in **bold** and shaded are concentrations above the ACL
Results in gray are ND

December 2020 Key Events

- Dec 7-11: Fourth Quarter 2020 Groundwater Monitoring event. Used backup laboratory due to COVID-19 outbreak at primary laboratory.
- Dec 8: Installed VFD at EW-OU2-09-A and restarted well. Installed transducer at EW-OU2-06-A.
- Dec 17: optimization meeting.
- Dec 21: sampled monitoring wells where PDB was not placed at correct station.
- Sea Haven installed and developed replacement wells MW-OU2-05-AR and MW-OU2-84-180. Decommissioned MW-OU2-05-A, MW-OU2-05-180, and MW-OU2-07-180R.
- Used 1,500 gallons of treated water at the Landfill (500 gal for dust control and 1,000 gal for irrigation of seed and erosion repairs).

January 2021 Key Events

- Jan 7: Shea Homes contractor damaged OU2 southwest injection pipeline, ~500 gallons treated water released. Pipe repaired and normal operations resumed.
- Jan 12: welded joints of new HDPE pipe at southwest injection.
- Jan 11-14: Radio equipment upgrade to improve communications. New antenna mast installed at OU2 GWTP.
- Jan 19: Southwest injection tie-in of new HDPE pipe to existing. JV replaced flowmeter transmitter at EW-OU2-02-180R.

February 2021 Key Events

- Coordinate with Sea Haven on adjustment/survey of MW-OU2-04-AR, -05-AR, -07-A, -84-180, and -07-400.
- EW-OU2-12-180 redevelopment.
- JV finish Western Network testing (EW-OU2-05-A and EW-OU2-06-A) and OU2 GWTP completion.
- Evaluate if pump replacement needed at EW-OU2-02-A.

March 2021 Key Events

- March 1-5: First Quarter 2021 Groundwater Monitoring event.

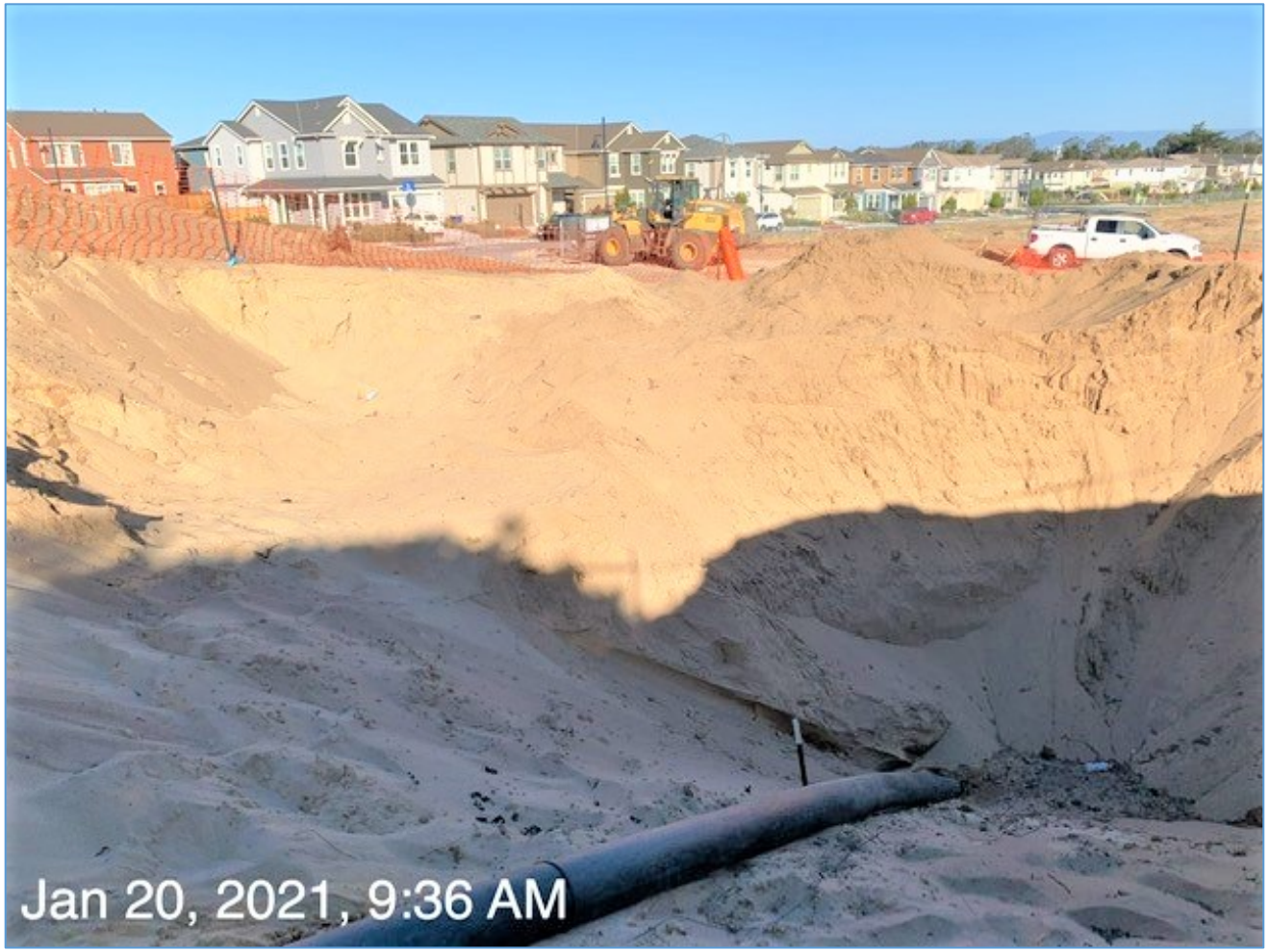
Ahtna

OU2 Southwest Injection – Shea Homes Pipeline Realignment

HDPE pipe joint weld

Ahtna

OU2 Southwest Injection – Shea Homes Pipeline Realignment



Point of connection, STA 10+00 (north side at 9th Street)

High-point vent, STA 13+00

Point of connection, STA 15+00 (south side at 8th Street)

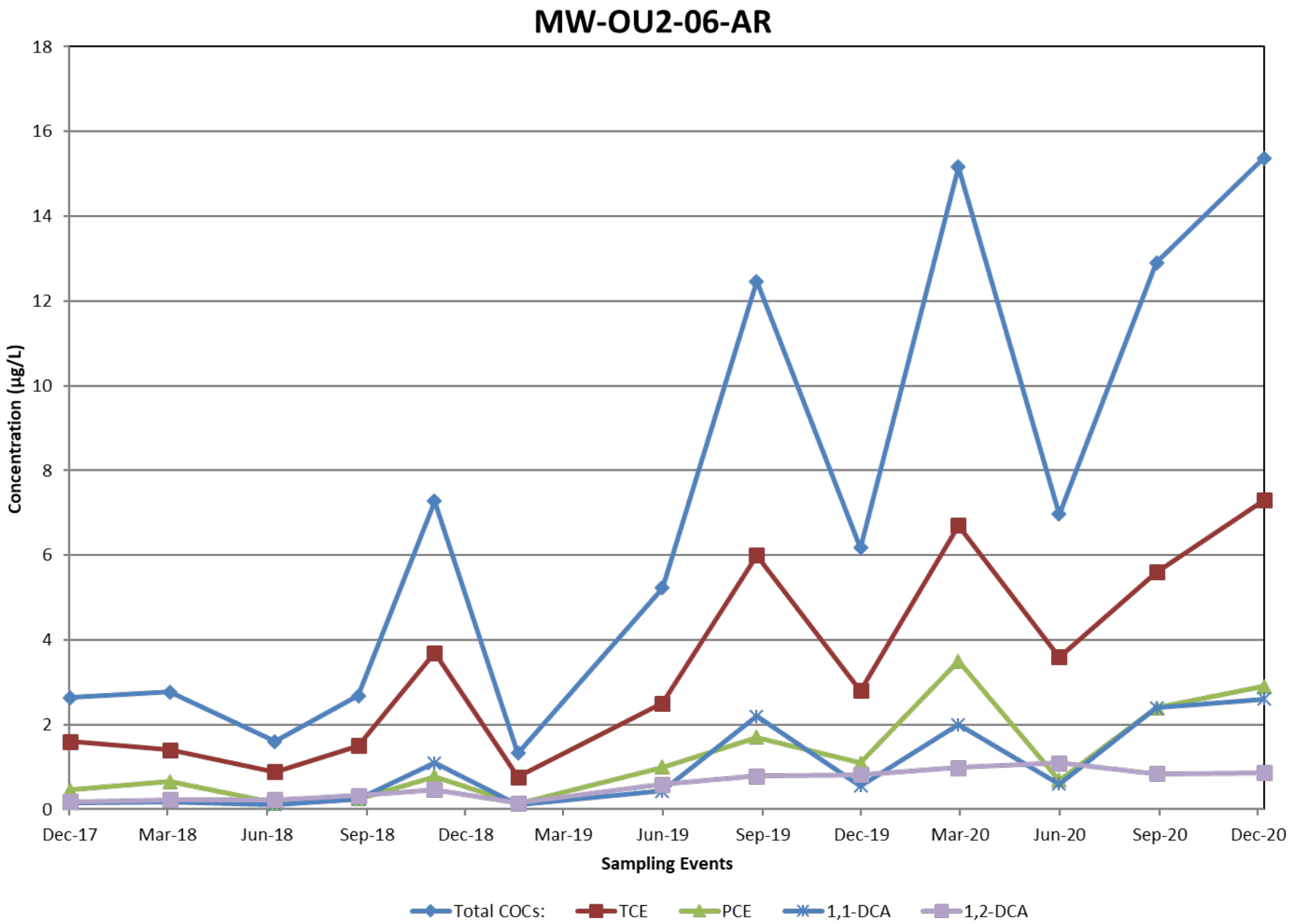
Ahtna

OU2 GWTS Communications Equipment Upgrades

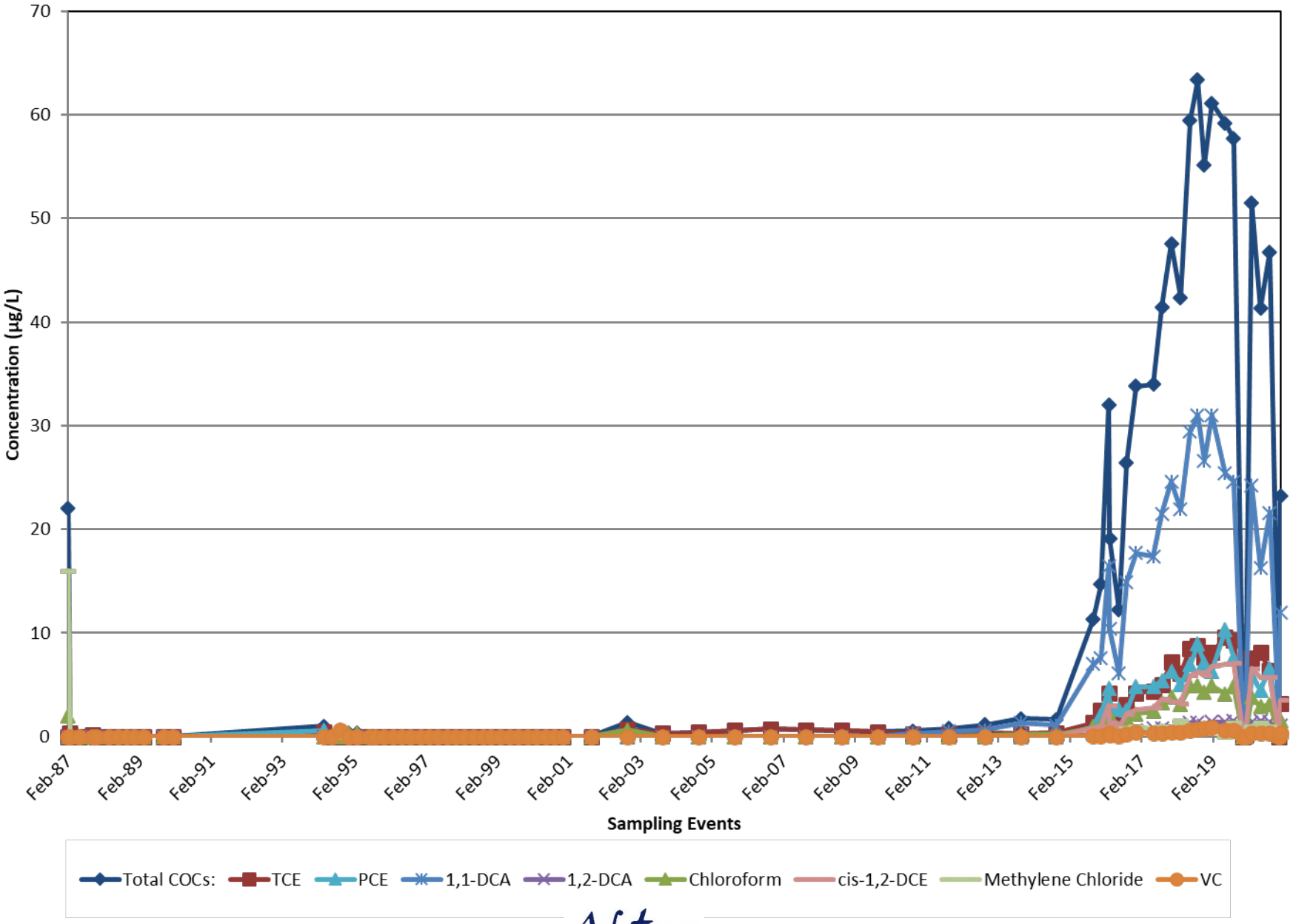
Table 3. OU2 A-Aquifer Select Extraction/Monitoring Well Data

OU2 Hydraulic Zone[1]	Well Identification[2]	Select COC Concentrations (µg/L)									
		3Q 2020					4Q 2020*				
		TCE	PCE	1,1-DCA	1,2-DCA	VC	TCE	PCE	1,1-DCA	1,2-DCA	VC
	ACL:	5.0	3.0	5.0	0.5	0.1	5.0	3.0	5.0	0.5	0.1
1	EW-OU2-16-A	2.5	2.2	**5.7**	**2.0**	**0.57**	2.2	2.1	4.6	**1.6**	**0.37**
1	EW-OU2-17-A	**9.5**	**5.9**	1.4	0.12 J	ND (0.05)	**10.0**	**6.6**	1.3	0.17 J	ND (0.013)
1	EW-OU2-18-A	**10.1**	**5.4**	**6.6**	**1.0**	**0.51**	**12.0**	**6.5**	**5.9**	**0.78**	**0.27**
1	EW-OU2-19-A	**5.3**	**5.4**	**12.6**	**1.9**	**1.3**	**5.7**	**5.6**	**11.0**	**1.6**	**0.87**
1	EW-OU2-20-A	1.3	1.3	**5.1**	**0.72**	**0.86**	1.2	1.3	4.3	**0.66**	**0.74**
1	MW-OU2-02-A	0.51	2.6	3.9	**0.91**	**7.5**	0.42	**3.1**	3.8	**0.71**	**7.1**
1	MW-OU2-44-A	1.2	1.5	**5.5**	**1.5**	**0.22**	2.3	2.6	**7.2**	**1.8**	**0.37**
1	MW-OU2-73-A	ND (0.25)	1.9	2.7	**0.51**	**5.2**	0.27	1.1	2.8	0.42	**4.0**
2	EW-OU2-15-A	1.4	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.05)	1.9	ND (0.084)	ND (0.025)	ND (0.043)	ND (0.013)
2	MW-OU2-27-A	ND (0.25)	**4.1**	0.34 J	ND (0.25)	ND (0.05)	0.13 J	**3.8**	0.31	ND (0.043)	ND (0.013)
3	EW-OU2-09-A	0.14 J	0.17 J	ND (0.25)	ND (0.25)	0.051 J	0.11 J	0.22 J	0.040 J	0.11 J	0.041
3	EW-OU2-10-A	0.70	0.61	0.25 J	**0.51**	0.053 J	0.88	0.78	0.21	0.40	0.032
3	EW-OU2-11-AR	1.8	0.77	1.4	0.30 J	ND (0.05)	2.0	0.78	1.3	0.26	ND (0.013)
3	EW-OU2-12-A	**6.5**	**4.2**	**5.4**	**2.1**	**0.11**	**7.5**	**4.4**	4.3	**1.9**	ND (0.013)
3	EW-OU2-13-A	**5.9**	2.1	1.5	**4.1**	ND (0.05)	**6.7 J**	2.3	1.2 J	**3.4 J**	ND (0.013)
3	MW-OU2-12-A	1.2	0.35 J	0.41 J	0.20 J	ND (0.05)	**12.0**	**9.3**	**20.0**	**1.8**	0.085
3	MW-OU2-25-A	1.0	0.43 J	0.54	**0.57**	ND (0.05)	1.1	0.37 J	0.48	**0.58**	**0.12**
4	EW-OU2-04-A	1.9	ND (0.25)	0.37 J	ND (0.25)	ND (0.05)	1.7	0.11 J	0.36	0.043 J	ND (0.013)
4	EW-OU2-05-A	3.9	0.50	0.46 J	0.30 J	ND (0.05)	2.3	0.12 J	0.41	ND (0.043)	ND (0.013)
4	EW-OU2-06-A	3.1	0.27 J	0.19 J	ND (0.25)	ND (0.05)	4.3	0.28 J	0.12 J	ND (0.043)	ND (0.013)
4	MW-OU2-40-A	**10.0**	0.42 J	0.16 J	ND (0.25)	ND (0.05)	**8.8**	0.42 J	0.12 J	0.088 J	ND (0.013)
5	MW-OU2-04-A	2.6	1.2	0.70	**0.61**	ND (0.05)	1.9	0.67	0.61	**0.64**	ND (0.013)
5	MW-OU2-06AR	**5.6**	2.4	2.4	**0.84**	ND (0.05)	**7.3**	2.9	2.6	**0.86**	ND (0.013)
5	MW-OU2-07-A	0.54	0.51	**6.3**	ND (0.25)	ND (0.05)	1.4	0.80	**12.4**	0.46 J	**0.19**
5	MW-OU2-08-A	**6.4**	**6.6**	**21.6**	**1.4**	**0.31**	3.2	1.2	**12.0**	**1.1**	**0.37**
5	MW-OU2-75-A	**5.5**	**7.4**	**10.0**	ND (0.25)	ND (0.05)	**6.8**	**9.4**	**11.0**	0.18 J	0.096
5	MW-OU2-81-A	**12.1**	**9.7**	2.1	0.47 J	ND (0.05)	**18.0**	**9.0**	2.1	0.50	ND (0.013)
5	MW-OU2-83-A	1.2	1.3	**5.5**	0.21 J	ND (0.05)	2.1	2.0	**9.2**	0.41	**0.17**
5	MW-BW-50-A	1.1	2.9	1.9	ND (0.25)	ND (0.05)	0.70	**4.4**	0.80	ND (0.043)	ND (0.013)

Notes:
ACL: Aquifer Cleanup Level
COC: chemical of concern
1,2-DCA: 1,2-dichloroethane
TCE: trichloroethene
PCE: tetrachloroethene
1,1-DCA: 1,1-dichloroethane
µg/L: micrograms per liter
NS: not sampled
ND: The analyte was not detected above the detection limit.
J: Estimated result with a high (+) or low (-) bias.
[1] Hydraulic zones are identified in the Groundwater QAPP.
[2] Extraction wells not listed have met the QAPP decision rules to no longer operate.
Results in **bold** and shaded are concentrations above the ACL
Results in gray are ND
Results in brackets from a second deeper passive diffusion bag
* Preliminary data


MW-OU2-06-AR
Concentration (µg/L)
18
16
14
12
10
8
6
4
2
0
Dec-17
Mar-18
Jun-18
Sep-18
Dec-18
Mar-19
Jun-19
Sep-19
Dec-19
Mar-20
Jun-20
Sep-20
Dec-20
Sampling Events
Total COCs:
TCE
PCE
1,1-DCA
1,2-DCA

MW-OU2-08-A


70
60
50
40
30
20
10
0
Concentration (µg/L)
Feb-87
Feb-89
Feb-91
Feb-93
Feb-95
Feb-97
Feb-99
Feb-01
Feb-03
Feb-05
Feb-07
Feb-09
Feb-11
Feb-13
Feb-15
Feb-17
Feb-19
Sampling Events
Total COCs:
TCE
PCE
1,1-DCA
1,2-DCA
Chloroform
cis-1,2-DCE
Methylene Chloride
VC

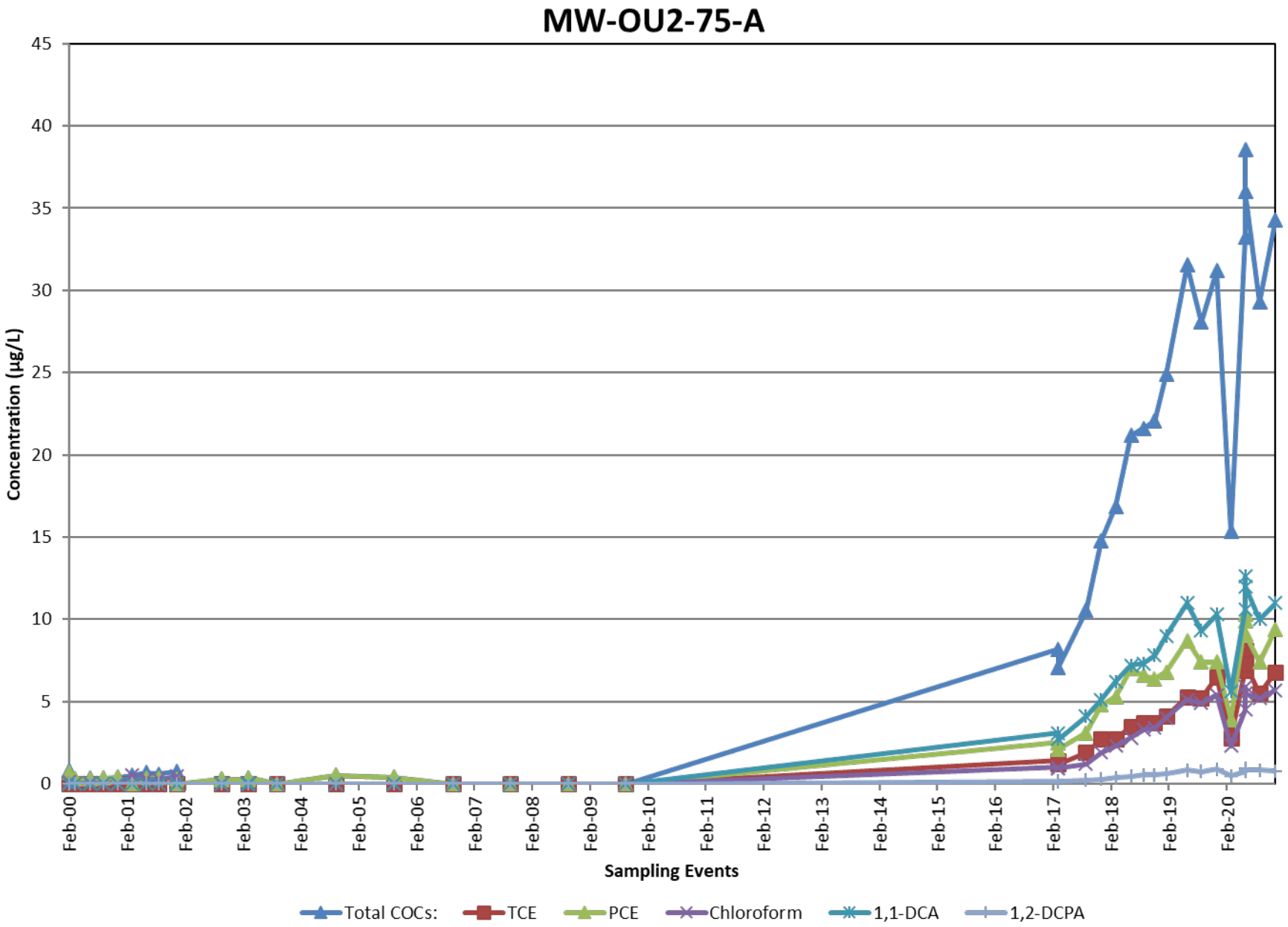
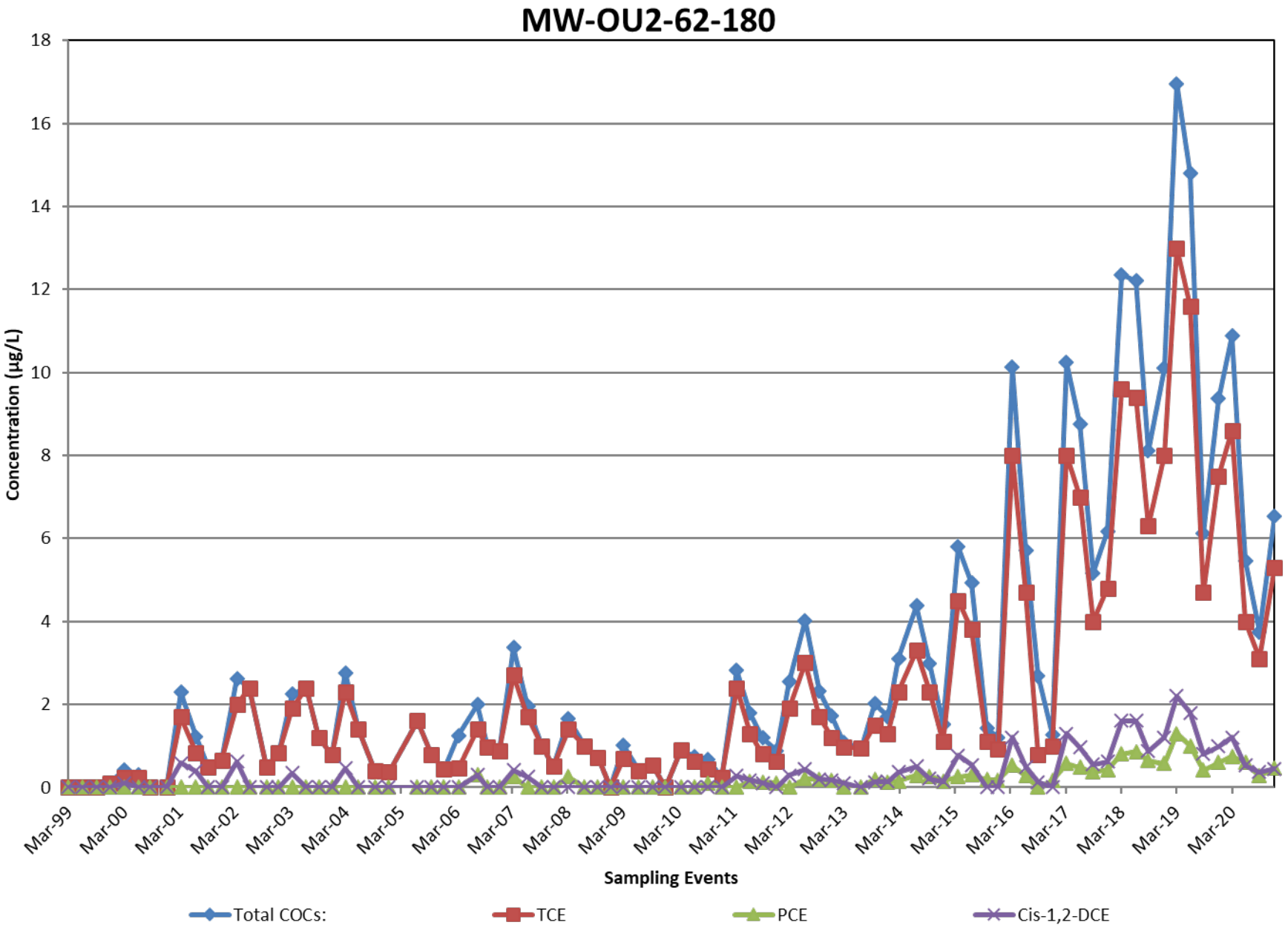

MW-OU2-75-A
Concentration (µg/L)
45
40
35
30
25
20
15
10
5
0
Feb-00
Feb-01
Feb-02
Feb-03
Feb-04
Feb-05
Feb-06
Feb-07
Feb-08
Feb-09
Feb-10
Feb-11
Feb-12
Feb-13
Feb-14
Feb-15
Feb-16
Feb-17
Feb-18
Feb-19
Feb-20
Sampling Events
Total COCs:
TCE
PCE
Chloroform
1,1-DCA
1,2-DCPA

Table 4. OU2 Upper 180-Foot Select Extraction/Monitoring Well Data

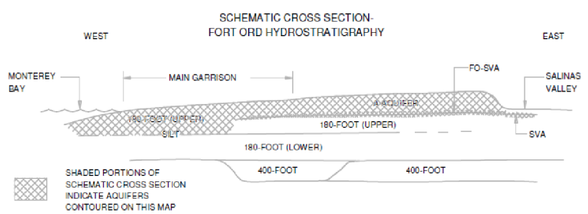
OU2 Hydraulic Zone[1]	Well Identification[2]	TCE Concentration (µg/L)			
		1Q 2020	2Q 2020	3Q 2020	4Q 2020*
	ACL:	5.0			
6	EW-OU2-03-180	**8.0**	**7.3**	**7.3**	**7.4**
6	MW-OU2-23-180	**13.3**	**17.7**	**12.2**	**16.0**
6	MW-OU2-50-180	**11.8**	**11.8**	**8.7**	**13.0**
6	MW-OU2-51-180	ND (0.25)	0.94	0.56	0.79
7	EW-OU2-05-180	2.6	2.7	2.7	2.4
7	EW-OU2-06-180	3.8	4.1	4.2	3.6
7	EW-OU2-10-180	**7.4**	**8.5**	**7.6**	**7.1**
7	EW-OU2-11-180	**5.1**	4.3	3.5	4.5
7	EW-OU2-12-180	NS	NS	NS	NS
7	MW-OU2-81-180	4.7	**5.4**	3.7	4.9
7	MW-OU2-44-180	**11.4**	**11.6**	**13.3**	**12.0**
7	MW-OU2-56-180	ND (0.25)	**6.3**	**7.0**	**8.1**
8	EW-OU2-08-180	1.7	1.4	1.7	1.7
8	MW-OU2-28-180	4.0	4.3	**5.1**	**6.1**
8	MW-OU2-62-180	**8.6**	4.0	3.1	**5.3**
9	EW-OU2-01-180	3.8	4.4	4.0	3.8
9	EW-OU2-02-180R	**5.2**	**5.7**	**5.2**	**6.5**
9	MW-OU2-06-180R2	1.1	1.0	0.82	0.97
9	MW-OU2-24-180	**8.5**	**10.5**	**9.6**	**9.3**
9	MW-OU2-43-180	2.3	1.0	2.5	2.4
N/A	MW-OU2-07-180R	1.6	0.50	0.51	1.3

Notes:
ACL: Aquifer Cleanup Level
COC: chemical of concern
1,2-DCA: 1,2-dichloroethane
TCE: trichloroethene
PCE: tetrachloroethene
1,1-DCA: 1,1-dichloroethane
µg/L: micrograms per liter
NS: not sampled
ND: The analyte was not detected above the detection limit.
J: Estimated result with a high (+) or low (-) bias.
[1] Hydraulic zones are identified in the Groundwater QAPP.
[2] Extraction wells not listed have met the QAPP decision rules to no longer operate.
Results in **bold** and shaded are concentrations above the ACL
Results in gray are ND
Results in brackets from a second deeper passive diffusion bag
* Preliminary data


MW-OU2-62-180
Concentration (µg/L)
18
16
14
12
10
8
6
4
2
0
Mar-99
Mar-00
Mar-01
Mar-02
Mar-03
Mar-04
Mar-05
Mar-06
Mar-07
Mar-08
Mar-09
Mar-10
Mar-11
Mar-12
Mar-13
Mar-14
Mar-15
Mar-16
Mar-17
Mar-18
Mar-19
Mar-20
Sampling Events
Total COCs:
TCE
PCE
Cis-1,2-DCE

MW-OU2-08-A
6.4
MW-OU2-07-A
0.54
EW-OU2-13-A
5.9 J+
MW-OU2-05-A
MW-OU2-06-AR
5.6
MW-BW-13-A
2.3
EW-OU2-04-A
1.9
EW-OU2-05-A
3.9
MW-OU2-40-A
10.0
EW-OU2-06-A
3.1
MW-OU2-04-A
2.6
MW-OU2-79-A
0.86
MW-OU2-34-A
EW-OU2-11-AR
1.8
EW-OU2-09-A
0.14 J
EW-OU2-10-A
0.70
EW-OU2-12-A
6.5
MW-OU2-12-A*
1.2
MW-OU2-25-A
1.0
EW-OU2-17-A
9.5 J+
EW-OU2-18-A
10.1
MW-OU2-44-A*
1.2
MW-OU2-02-A
0.51
MW-OU2-74-A
MW-OU2-81-A
12.1
MW-OU2-83-A
1.2
MW-OU2-75-A
5.5
MW-BW-50-A
1.1
EW-OU2-16-A
2.5
MW-OU2-46-A
0.48 J
EW-OU2-15-A
1.4
MW-OU2-45-A
1.5
MW-OU2-28-A
MW-OU2-27-A
MW-OU2-80-A
0.27 J
MW-OU2-73-A
EW-OU2-20-A
1.3
EW-OU2-19-A
5.3
MW-OU2-01-A
2.3
B
D
E
F

SCHEMATIC CROSS SECTION-
FORT ORD HYDROSTRATIGRAPHY



N
W
E
S

0 1,600 3,200
Feet

EXPLANATION

- Monitoring Well with TCE Detection
- Extraction Well with TCE Detection
- MW-OU2-08-A 6.4 — Well ID - Bold When ACL Exceeded; * Well not used for contouring; TCE Concentration (µg/L) and validation/lab qualifier.
- Monitoring Well with no COC ACL Exceedance and ND for TCE
- Monitoring Well with 1,2-DCA and Vinyl Chloride ACL Exceedance and ND for TCE
- Monitoring Well with PCE ACL Exceedance and ND for TCE

Chemical of Concern (COC) Aquifer Clenaup Level (ACL) Exceedance Countour in µg/L.

- 5 — Trichloroethene (TCE)
- 3 — Tetrachloroethene (PCE)
- 5 — 1,1-Dichloroethane (1,1-DCA)
- 0.5 — 1,2-Dichloroethane (1,2-DCA)
- 0.1 — Vinyl Chloride (VC)
- General Groundwater Flow Direction
- Approximate location of the Upper 180-Foot Aquifer Groundwater Divide
- Approximate location of the A-Aquifer Groundwater Divide
- OU2 Landfill Areas B through F
- Facilities
- Roads
- Former Fort Ord Boundary

NOTES:

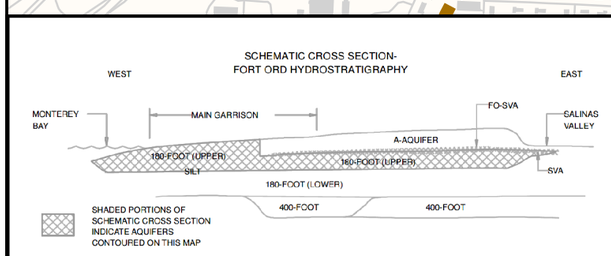
(1) Groundwater samples were collected between August 31st, 2020 and September 23rd, 2020.
(2) Contours are based on one interpretation of the data that were available at the time this report was prepared; other interpretations may be possible.
(3) Contours based on highest value obtained from multiple bags where applicable.
(4) Contours near wells not sampled this quarter are inferred from previous analytical data.

TCE CONCENTRATIONS AND OTHER COC ACL EXCEEDANCES
A-AQUIFER
Third Quarter 2020
Operable Unit 2 Remedy Monitoring and Operations and Maintenance, Fourth Quarter 2019 - Third Quarter 2020
Former Fort Ord, California

Ahtna | Date: 11/12/2020 | Figure: 35

EW-OU2-01-180
4.0
MW-OU2-20-180
1.9
MW-BW-14-180
4.1
MW-OU2-43-180
2.5
MW-OU2-07-180R
0.51
MW-OU2-24-180
9.6
MW-OU2-06-180R2
0.82
EW-OU2-02-180R
5.2
MW-OU2-39-180
1.1
MW-OU2-53-180
4.6
MW-OU2-51-180
0.56
MW-OU2-50-180
8.7
MW-OU2-23-180
12.2
MW-OU2-44-180
13.3
EW-OU2-11-180*
3.5
MW-OU2-81-180
3.7
EW-OU2-03-180
7.3
EW-OU2-10-180
7.6
MW-OU2-63-180
1.5
MW-OU2-47-180
0.47 J
EW-OU2-05-180
2.7
EW-OU2-06-180
4.2
MW-OU2-56-180
7.0 J+
MW-OU2-62-180
3.1 J+
EW-OU2-09-180
0.17 J
MW-OU2-46-180
1.1
EW-OU2-08-180
1.7
MW-OU2-61-180
0.35 J
MW-OU2-28-180
5.1
MW-BW-02-180
A
B
C
D
E
F

SCHEMATIC CROSS SECTION-
FORT ORD HYDROSTRATIGRAPHY



N
W
E
S

0 1,500 3,000
Feet

Explanation

- Extraction Well with TCE Detection
- Monitoring Well with TCE Detection
- Well ID - Bold When ACL Exceeded (*Indicates: Sample not used for contouring)
- MW-OU2-44-180 13.3 — TCE concentration (µg/L) and lab qualifier.
- Monitoring Well with no COC ACL Exceedance and ND for TCE
- * Well is not used for contouring

Chemical of Concern (COC) Aquifer Cleanup Level (ACL) Exceedance Contour in µg/L.

- 5 — Trichloroethene (TCE)
- Approximate location of the Upper 180-Foot Aquifer Groundwater Divide
- General Groundwater Flow Direction
- Roads
- Facilities
- Approximate extent of landfill areas
- Approximate Edge of Fort Ord - Salinas Valley Aquitard
- Former Fort Ord Boundary

NOTES:

(1) Groundwater samples were collected between August 31st, 2020 and September 23rd, 2020.

(2) Contours are based on one interpretation of the data that were available at the time this report was prepared; other interpretations may be possible.

(3) Contours based on highest value obtained from multiple bags where applicable.

TCE CONCENTRATIONS AND OTHER COC ACL EXCEEDANCES
UPPER 180-FOOT AQUIFER
Third Quarter 2020
Operable Unit 2 Remedy Monitoring and Operations and Maintenance, Fourth Quarter 2019 - Third Quarter 2020
Former Fort Ord, California

Ahtna | Date:11/20/2020 | Figure: 45