

Former Fort Ord Operable Unit 2 Data and Status

HTW BCT Meeting, March 14, 2019

Table 1: OU2 GWTP Statistics as of February 28, 2019

Monthly Statistics	Volume Treated (gallons)	Average Flow (gallons per minute)	Percent of Time Online	COC Mass Removed (pounds)
February 2019	37,495,793	930	99.9	2.27
Total since October 1995	7.536 billion			847

Table 2: February 2019 – OU2 Analytical Results at TS-OU2-INJ-01

COC	Discharge Limit (µg/L)	Analytical Results (µg/L)		
		2/6/2019	2/13/2019	2/20/2019
1,1-dichloroethane (1,1-DCA)	5.0*	ND	ND	ND
1,2-dichloroethane (1,2-DCA)	0.5	ND	ND	ND
1,2-dichloropropane (1,2-DCP)	0.5	ND	ND	ND
Benzene	0.5	ND	ND	ND
Carbon tetrachloride (CT)	0.5	ND	ND	ND
Chloroform	2.0*	ND	ND	ND
Cis-1,2-dichloroethene (cis-1,2-DCE)	6.0*	ND	ND	ND
Methylene Chloride	0.5	ND	ND	ND
Tetrachloroethene (PCE)	0.5	ND	ND	ND
Trichloroethene (TCE)	0.5	ND	ND	ND
Vinyl chloride (VC)	0.1	ND	ND	ND

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

^Preliminary results

February 2019 Key Events for OU2

- February 1: start of 2nd 21-day period (GWTS operation by Ahtna).
- Sample OU2 GWTP, weekly sampling completed February 20.

March 2019 Key Events for OU2

- March 4-9: First Quarter 2019 GWM sampling, including PFOA/PFOS sampling.
- Prepare for old OU2 GWTP decommissioning.
- Prepare for Western Network and EW-OU2-09-A connection and operation.



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

OU2 Hydraulic Zone ¹	Well Identification ²	Select COC Concentrations (µg/L)									
		3Q 2018					4Q 2018				
		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	3.1	2.7	7.5	2.4	0.96	2.7	2.3	6.6	2.3	0.94
1	MW-OU2-02-A	0.11 J	2.7	6.1	1.2	10.7	0.52	2.3	5.3	1.2	9.4
1	MW-OU2-44-A	6.2	8.6	18.8	4.2	0.72	4.7	3.7	16.0	4.0	0.59
1	MW-OU2-73-A	ND (0.25)	1.7	5.7	0.91	10.3	ND (0.25)	1.1	6.1	0.95	10.5
2	EW-OU2-15-A	0.32 J	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.05)	1.4	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.05)
2	MW-OU2-27-A	ND (0.25)	4.0	0.27 J	ND (0.25)	ND (0.05)	ND (0.25)	3.0	0.27 J	ND (0.25)	ND (0.05)
3	EW-OU2-09-A	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
3	EW-OU2-10-A	1.6	1.0	0.68	0.78	ND (0.05)	1.4 J+	1.0 J+	0.62 J+	0.83 J+	0.10
3	EW-OU2-12-A	7.9	4.4	6.3	1.9	0.12	7.5	4.6	5.9	2.0	0.17
3	EW-OU2-13-A	6.6	2.3	1.7	3.3	ND (0.05)	6.2	2.2	1.7	3.6	ND (0.05)
3	MW-OU2-25-A	0.63	0.25 J	0.30 J	0.28 J	ND (0.05)	0.90 J+	0.45 J+	0.45 J+	0.70 J+	ND (0.05)
4	EW-OU2-04-A	1.3	ND (0.25)	ND (0.25)	ND (0.25)	ND (0.05)	NS	NS	NS	NS	NS
4	EW-OU2-05-A	4.4	0.27 J	0.27 J	ND (0.25)	ND (0.05)	NS	NS	NS	NS	NS
4	EW-OU2-06-A	2.8	0.30 J	0.15 J	ND (0.25)	ND (0.05)	NS	NS	NS	NS	NS
4	MW-OU2-40-A	5.6	0.43 J	0.31 J	ND (0.25)	ND (0.05)	14.9	0.61	0.24 J	ND (0.25)	ND (0.05)
5	MW-OU2-04-A	2.6	0.71	0.50	0.34 J	ND (0.05)	2.9	0.77	0.59	0.50	ND (0.05)
5	MW-OU2-06AR	1.5	0.25 J	0.25 J	0.32 J	ND (0.05)	3.7	0.78	1.1	0.47 J	ND (0.05)
5	MW-OU2-08-A	8.8	8.9	31	1.3	0.69	7.7	7.1	26.6	1.1	0.77
5	MW-OU2-75-A	3.7	6.6	7.3	ND (0.25)	ND (0.05)	3.7	6.4	7.8	ND (0.25)	0.087 J
5	MW-OU2-81-A	7.7	12.8	3.9	0.21 J	ND (0.05)	13.9	12.1	3.9	0.19 J	ND (0.05)
5	MW-OU2-83-A	NEW WELL (NS)					0.55	0.60	3.0	ND (0.25)	ND (0.05)
5	MW-BW-50-A	1.3	3.3	1.9	ND (0.25)	ND (0.05)	0.58	1.2	0.61	ND (0.25)	ND (0.05)

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

OU2 Hydraulic Zone ¹	Well Identification ²	TCE Concentration (µg/L)	
		3Q 2018	4Q 2018
ACL:		5.0	
6	EW-OU2-03-180	8.1	9.6
6	MW-OU2-50-180	10.0	9.9
6	MW-OU2-55-180	NS	ND (0.25)
7	EW-OU2-05-180	NS	1.6
7	EW-OU2-06-180	5.2	6.0
7	MW-OU2-81-180	6.3	7.0
7	MW-OU2-44-180	14.4	16.4
8	EW-OU2-08-180	NS	3.1
8	MW-OU2-28-180	4.7	5.0
8	MW-OU2-62-180	6.3	8.0
9	EW-OU2-01-180	4.6	3.7
9	MW-OU2-06-180R2	2.0	2.0
9	MW-OU2-43-180	1.8	2.2

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



Table 5. OU2 New Extraction/Monitoring Well Data

OU2 Hydraulic Zone ¹	Well Identification	Sample Depth (ft btoc)	Select COC Concentrations (µg/L)				
			4Q 2018				
			TCE	PCE	1,1-DCA	1,2-DCA	VC
ACL:			5.0	3.0	5.0	0.5	0.1
1	EW-OU2-17-A	Pump	11.9	10.4	3.9	0.11 J	0.20
1	EW-OU2-18-A	Pump	6.8	6.9	12.5	1.8	1.0
1	EW-OU2-19-A	Pump	8.3	9.7	19.1	2.5	1.4
1	EW-OU2-20-A	Pump	2.5 J+	2.9 J+	11.0 J	1.5 J+	1.2 J+
3	EW-OU2-11-AR	Pump	1.3	0.85	0.43 J	0.31 J	ND (0.05)
7	EW-OU2-10-180	Pump	5.5	1.1	0.32 J	ND (0.25)	ND (0.05)
7	EW-OU2-11-180	Pump	8.2	0.81	ND (0.25)	ND (0.25)	ND (0.05)
7	EW-OU2-12-180	Pump	8.9	0.81	ND (0.25)	ND (0.25)	ND (0.05)
5	MW-OU2-83-A	91	ND (0.25)	0.13 J	0.37 J	ND (0.25)	ND (0.05)
		96	0.17 J	0.25 J	0.89	ND (0.25)	ND (0.05)
		101	0.40 J+	0.54 J+	2.3 J+	ND (0.25)	ND (0.05)
		106	0.46 J+	0.60 J+	2.6 J+	ND (0.25)	ND (0.05)
		111	0.47 J	0.63	2.7	ND (0.25)	0.054 J
		116	0.55	0.60	3.0	ND (0.25)	ND (0.05)
9	EW-OU2-02-180R	Pump	5.6	0.50	0.24 J	ND (0.25)	ND (0.05)

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.

Ft btoc: feet below top of casing

J: Estimated result with a high (+) or low (-) bias.

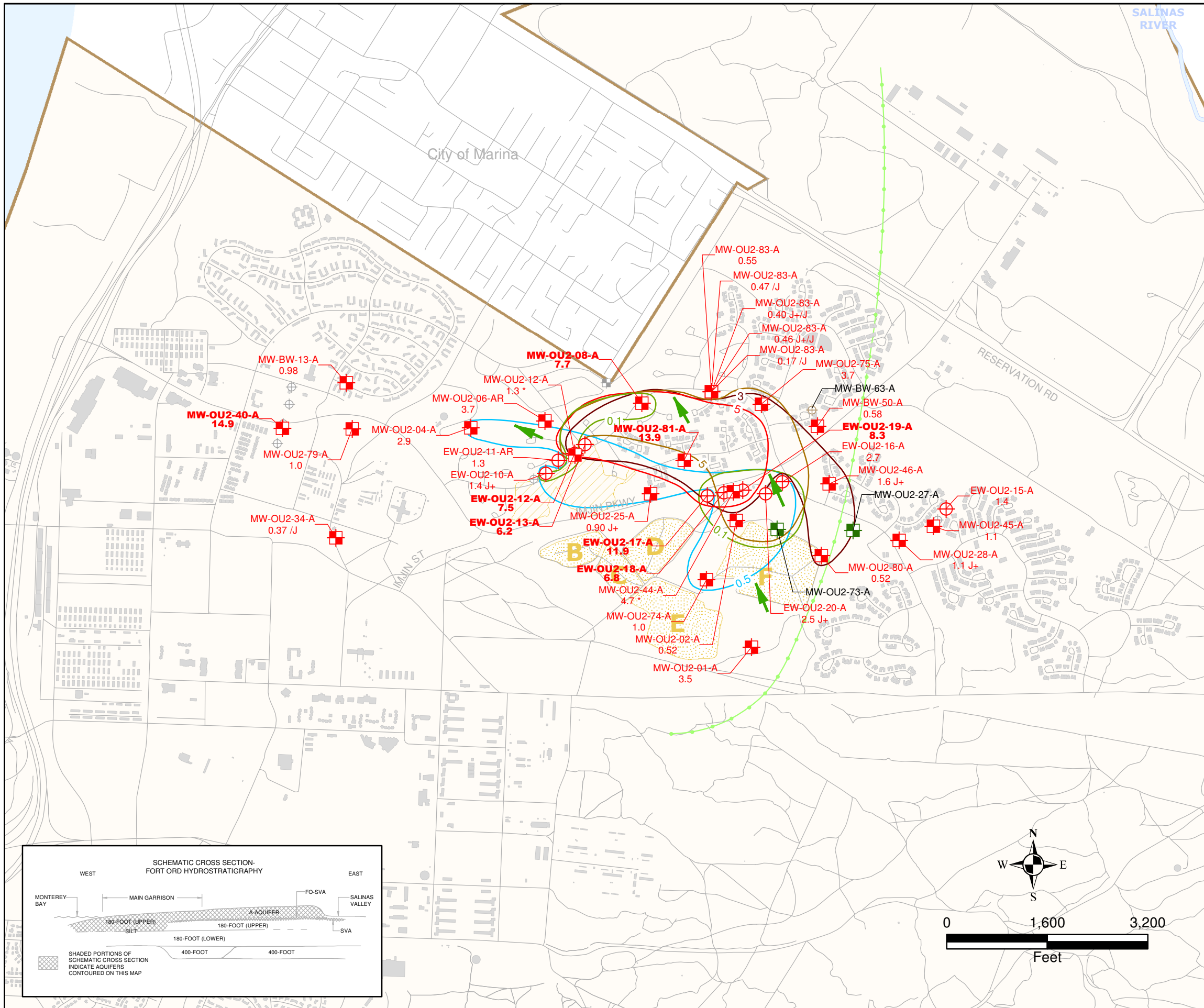
¹ Hydraulic zones are identified in the Groundwater QAPP.

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

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EXPLANATION

- Monitoring Well with TCE Detection
- Extraction Well with TCE Detection
- Well ID - Bold When ACL Exceeded (* Indicates: Sample result not used for contouring)
- TCE Concentration (µg/L) and validation/lab qualifier. Bold when concentration exceeds the ACL.
- Monitoring Well with COC ACL Exceedance (not TCE)
- Extraction Well with COC ACL Exceedance (not TCE)
- Monitoring Well TCE Not Detected, and No Other COC ACL Exceedances
- Extraction Well TCE Not Detected, and No Other COC ACL Exceedances
- Monitoring Well Not Sampled This Quarter
- Extraction Well Not Sampled This Quarter

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

- 5 Trichlorethene (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 Extent of Landfill Areas

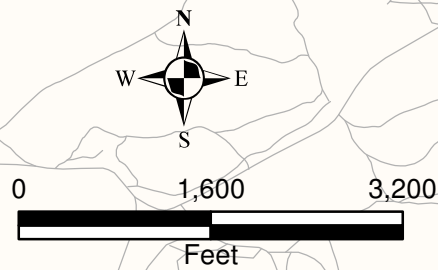
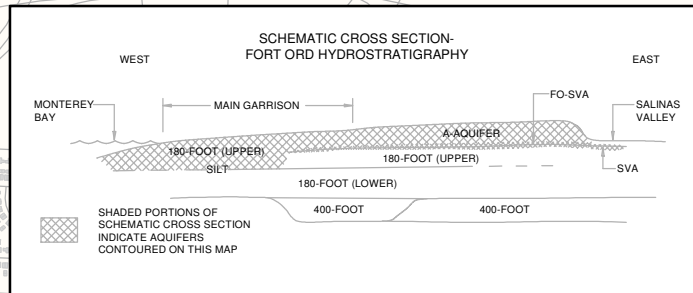
- OU2 Landfill Areas B through F
- Area A (clean closed)
- Approximate Location of a Groundwater Divide
- Roads
- Facilities
- Former Fort Ord Boundary

NOTES:

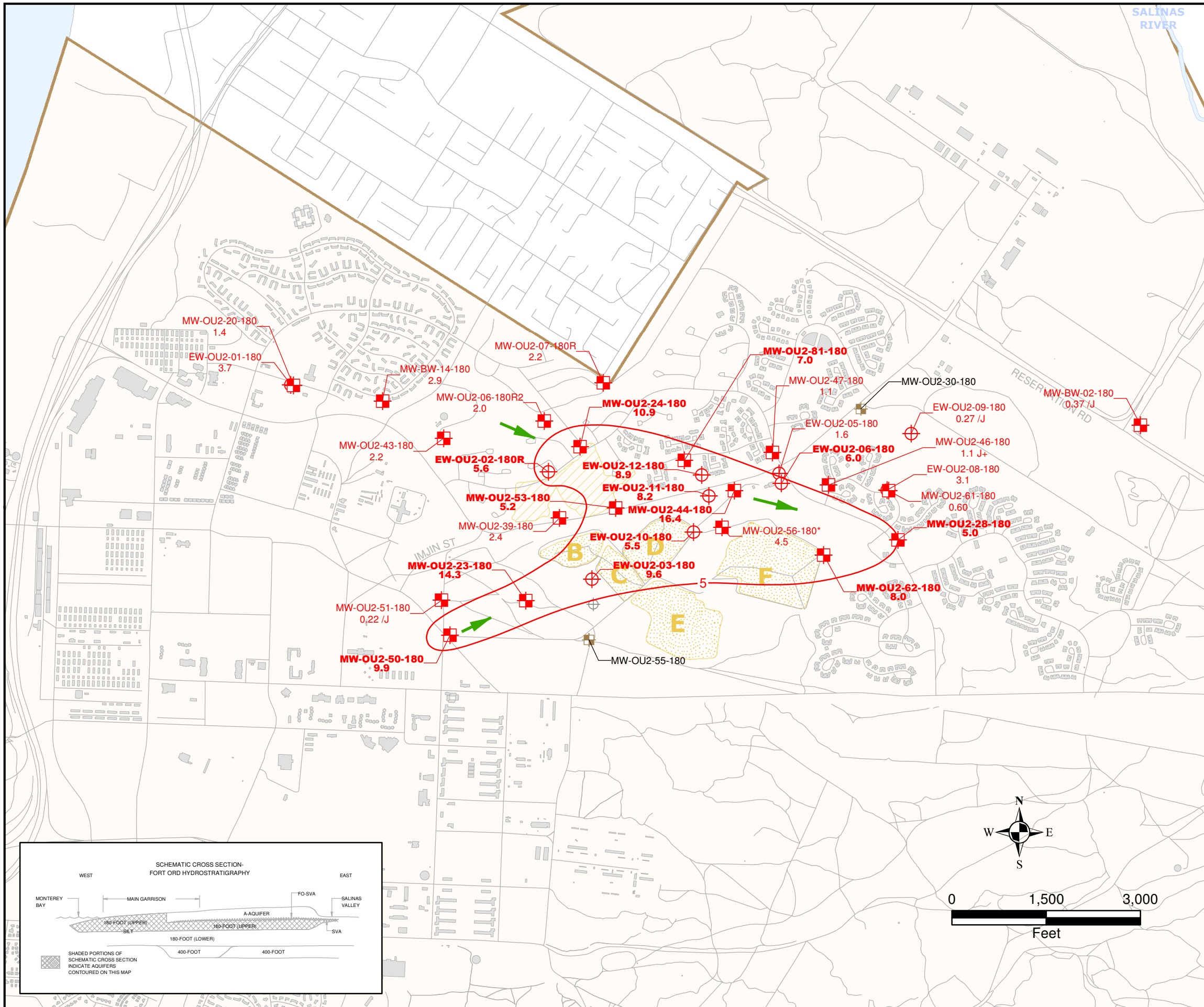
- (1) Samples were collected between December 13 and 27, 2018.
- (2) Contours are based on one interpretation of the data that were available at the time this report was prepared; other interpretations may be possible.
- (3) Contours based on highest value obtained from multiple bags where applicable.
- (4) Contours near wells not sampled this quarter are inferred from previous analytical data.

TCE CONCENTRATIONS AND OTHER COC ACL EXCEEDANCES
 A-AQUIFER
 Operable Unit 2
 Fourth Quarter 2018
 Groundwater Monitoring and Treatment System Report
 Former Fort Ord, California

wood. By: TJH Project No. 8418191360
 Date: 03/01/2019 Figure **7**



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EXPLANATION

- Monitoring Well with TCE Detection
- Extraction Well with TCE Detection
- Well ID - Bold When ACL Exceeded (* Indicates: Sample result not used for contouring)
- TCE concentration (µg/L) and validation/lab qualifier. Bold when concentration exceeds the ACL.
- Monitoring Well TCE Not Detected, and No Other COC ACL Exceedances
- Extraction Well TCE Not Detected, and No Other COC ACL Exceedances
- Monitoring Well Not Sampled This Quarter
- Extraction Well Not Sampled This Quarter

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

- 5 Trichloroethene (TCE)
- General Groundwater Flow Direction

Approximate extent of Fort Ord Landfill Areas

- OU2 Landfill Areas B through F
- Area A (clean closed)
- Roads
- Facilities
- Former Fort Ord Boundary

NOTES:

- (1) Samples were collected between December 13 and 27, 2018.
- (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.
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TCE CONCENTRATIONS AND OTHER COC ACL EXCEEDANCES
 UPPER 180-FOOT AQUIFER
 Operable Unit 2
 Fourth Quarter 2018
 Groundwater Monitoring and Treatment System Report
 Former Fort Ord, California

	By: TJH	Project No. 8418191360
	Date: 03/01/2019	Figure 9