FLORENCE COPPER

FLORENCE COPPER INC.
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April 22, 2019
File No. 132473-003

ADEQ Water Quality Compliance Section
Mail Code 5415B-1
1110 West Washington Street
Phoenix, Arizona 85007

Attention: Mr. Tracy Bunch

Subject: Weekly Monitoring Report for Week Ending 04/13/2019
Florence Copper, Production Test Facility
Aquifer Protection Permit No. 106360, LTF 61845

Dear Mr. Bunch:

Florence Copper is submitting this report in accordance with Table 4.1-8 and Section 2.7.4.4 of the Production Test Facility Temporary Aquifer Protection Permit (APP) No. 106360.

In accordance with Table 4.1-8 of the APP, this report includes In-Situ Best Available Demonstrated Control Technology (BADCT) compliance monitoring for the PTF that is required to be reported on a weekly basis including:

- Recovered volume to injection volume;
- Inward hydraulic gradient; and
- Maximum injection pressure.

A map showing the location of the PTF injection, recovery, and observation wells is included as Figure 1.

Recovered Volume to Injection Volume

A summary of the injected and recovered volumes for the week 4/7/2019 to 04/13/2019 is included in Table 1. The total injected and recovered volumes for the PTF as a daily total are also presented on Figure 2.

During the reporting period no exceedance of the alert level was measured for recovered volume to injected volume. The alert level is the recovered volume shall exceed the injected volume.

Inward Hydraulic Gradient

Table 2 includes a summary of water levels in the recovery and observation well pairs. Hydrographs showing the water level elevation for each recovery well and observation well pair are included in Figure 3.

During the reporting period, maintenance was performed on several wells and elevation data was not available as follows: R-02 (PW-06) – no elevation data on 4/7 and 4/8; R-04 (PW-08) – no elevation data on

4/10; R-08 (PW-12) – no elevation data on 4/10. Pumping rates were adjusted in adjacent wells to insure there was no exceedance of the alert level for the inward hydraulic gradient. The alert level for the inward hydraulic gradient is that the water level elevation in the paired observation well must be a minimum of 1 foot higher than the paired recovery well.

Injection Pressure

A summary of the injection pressures during the reporting period is included as Table 3. (Pressures were all zero.)

During the reporting period no alert levels were exceeded for injection pressure, the injection pressure limit for the injection wells is limited by the fracture gradient of 0.65 pounds per square inch (psi) per foot. For the PTF injection wells this pressure limit equates to 104 psi.

Please contact me at 520-374-3984 if you require any additional information.

Sincerely,
Florence Copper Inc.

Dan Johnson
Vice President – General Manager

Attachments:
Tables and Figures

cc: Marybeth Greenslade, ADEQ
Nancy Rumrill, United States Environmental Protection Agency

TABLES

Table 1. Injected and recovered volumes (gallons) for the week 04/07 - 04/13/2019

Date	Time	Daily Injection Flow	Daily Recovery Flow	Ratio PLS/Raff	% Recovery
4/7/2019	7:00:00 AM	314600	349700	1.11	111
4/8/2019	7:00:00 AM	309300	362100	1.17	117
4/9/2019	7:00:00 AM	313500	345000	1.10	110
4/10/2019	7:00:00 AM	294700	329600	1.12	112
4/11/2019	7:00:00 AM	311200	345100	1.11	111
4/12/2019	7:00:00 AM	311300	344800	1.11	111
4/13/2019	7:00:00 AM	314600	346500	1.10	110
Weekly Average		309886	346114	1.12	112

Table 2. Average daily water levels in the recovery and observation well pairs (amsl)

Well Pairs Avg Elev	4/7/19	4/8/19	4/9/19	4/10/19	4/11/19	4/12/19	4/13/19
PW-05 (R-01)	1235.20	1235.30	1236.65	1238.26	1238.31	1238.17	1238.95
O-01	1239.33	1240.89	1240.31	1240.18	1240.37	1240.70	1241.00
O-07	1238.14	1239.04	1239.60	1240.18	1240.41	1240.45	1240.84
PW-06 (R-02)	NA	NA	1231.61	1231.93	1231.56	1232.07	1232.45
O-01	1239.33	1240.89	1236.65	1240.18	1240.37	1240.70	1241.00
O-02	1239.59	1240.94	1231.61	1240.19	1240.37	1241.02	1241.13
PW-07 (R-03)	1227.93	1227.11	1230.38	1230.37	1233.78	1234.32	1234.83
O-02	1239.59	1240.94	1231.61	1240.19	1240.37	1241.02	1241.13
O-03	1238.33	1239.15	1230.38	1240.06	1239.71	1240.52	1240.77
PW-08 (R-04)	1233.92	1236.36	1237.62	NA	1224.94	1224.72	1225.37
O-03	1238.33	1239.15	1240.31	1240.06	1239.71	1240.52	1240.77
PW-09 (R-05)	1229.15	1227.72	1233.70	1230.44	1233.83	1233.49	1235.07
O-04	1237.75	1238.28	1239.61	1239.70	1240.15	1240.32	1240.62
PW-10 (R-06)	1228.49	1228.27	1230.32	1229.21	1228.89	1228.64	1228.27
O-04	1237.75	1238.28	1239.61	1239.70	1240.15	1240.32	1240.62
O-05	1237.42	1237.93	1233.70	1239.33	1239.66	1239.75	1239.98
PW-11 (R-07)	1235.17	1235.33	1236.53	1236.46	1236.71	1236.74	1236.94
O-05	1237.42	1237.93	1239.07	1239.33	1239.66	1239.75	1239.98
O-06	1237.03	1237.71	1238.63	1239.04	1239.27	1239.26	1239.53
PW-12 (R-08)	1224.06	1225.45	1227.74	NA	1230.64	1230.29	1230.31
O-06	1237.03	1237.71	1238.63	1239.04	1239.27	1239.26	1239.53
O-07	1238.14	1239.04	1239.60	1240.18	1240.41	1240.45	1240.84

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Table 3. Injection well pressures (psi)

Date	I-01			I-02			I-03			I-04		
	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX	AVG	MIN	MAX
4/7/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/8/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/9/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/10/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/11/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/12/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4/13/2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

FIGURES

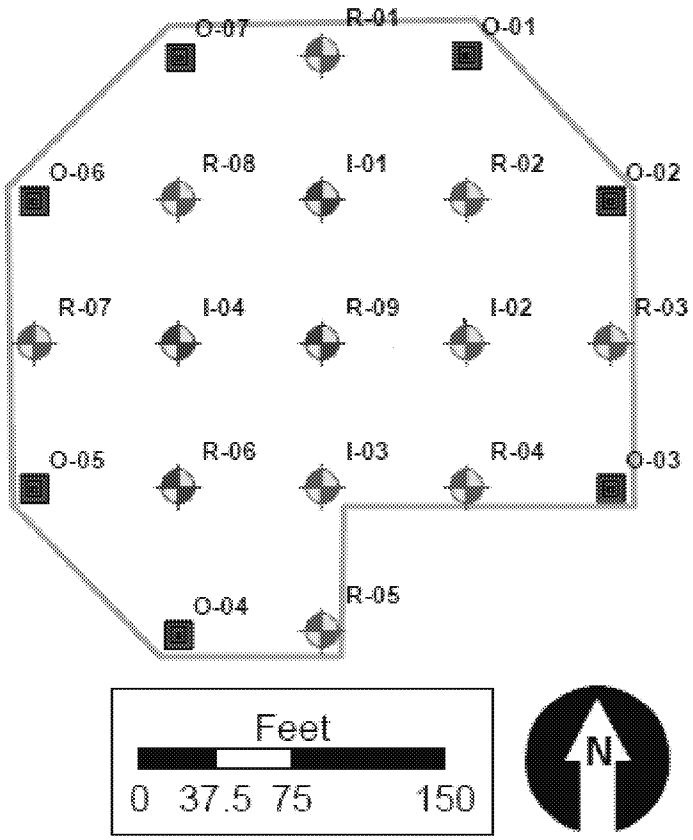

Figure 1. PTF injection, recovery, and observation well locations

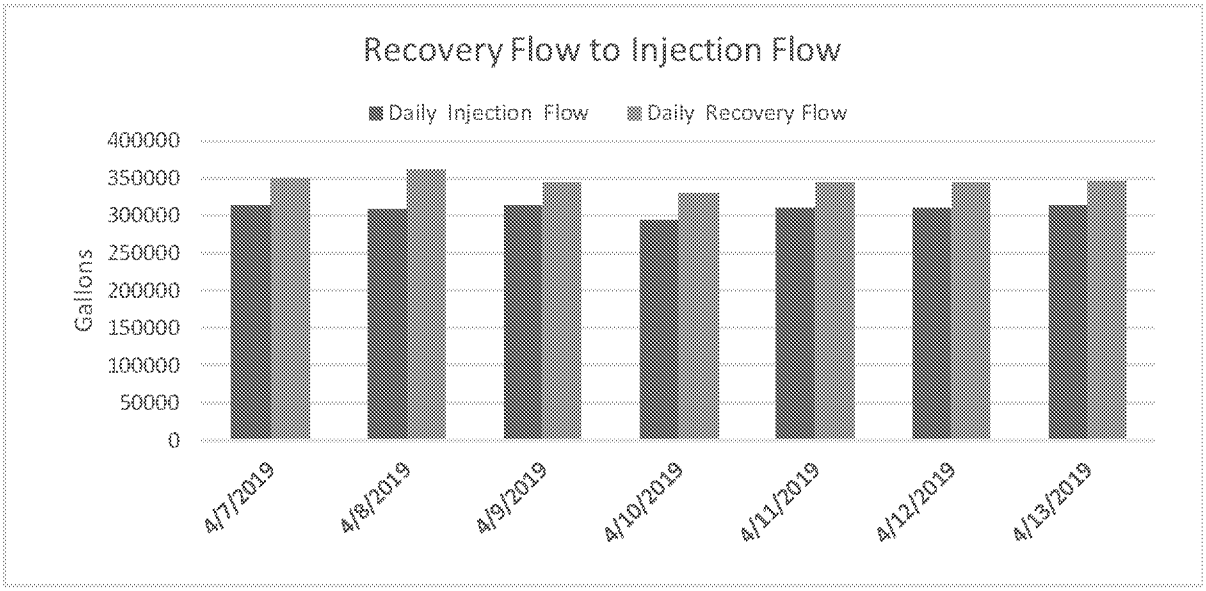

Figure 2. Recovered volume to injected volume

Figure 3

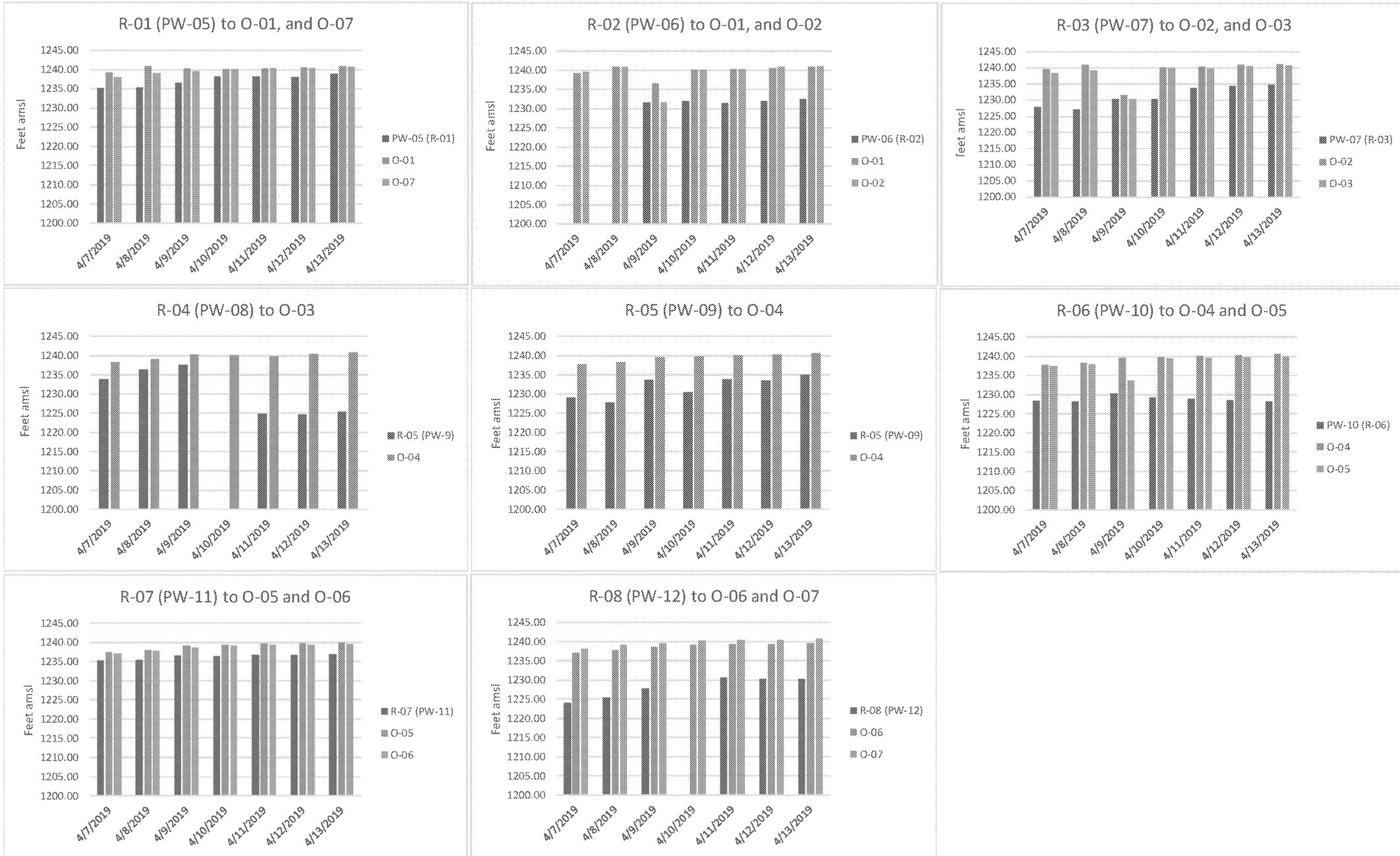

Figure 3. Recovery and observation well pairs