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Date: MAY 3 1 2017
Symbol: EPC-DO: 17-166
LA-UR: 17-23244
Locates Action No.: U1601822

Ms. Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

Subject: **Quarterly Report – 2017 Quarter 1, Discharge Permit DP-1835, Class V Underground Injection Control Wells**

Dear Ms. Hunter:

On August 31, 2016, the New Mexico Environment Department (NMED) issued a Discharge Permit (DP) 1835 to the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) for the discharge of treated groundwater to the regional aquifer through up to six Class V Underground Injection-Control (UIC) wells. Pursuant to Condition No. 10 of the above-referenced discharge permit, DOE/LANS are required to submit quarterly reports for the previous quarter to document:

1. *Influent and discharge volumes from the treatment systems;*
2. *Quarterly groundwater and treated effluent sampling results; and*
3. *Operations/Maintenance activities.*

Pursuant to Condition Nos. 11, 12, and 13 of the above-referenced permit, the quarterly reports shall also contain general information, performance information, and monitoring data of treated effluent from each ion-exchange (IX) treatment system, respectively. During the 2017 January 1st through March 31st (Quarter 1) reporting period, discharge of treated groundwater to the regional aquifer continued under DP-1835. This treated discharge occurred at two of the UIC wells: CrIN-4 and CrIN-5. The Quarterly Report – 2017 Quarter 1 (Enclosure 1) provides the information required under DP-1835 for this reporting period.

Please contact William J. Foley by telephone at (505) 665-8423 or by email at bfoley@lanl.gov if you have questions regarding this information.

Sincerely,

John C. Bretzke
Division Leader

Sincerely,

Cheryl L. Rodriguez
Program Manager, FPD-II

JCB/CLR/MTS/WJF:am

Enclosures:
(1) Quarterly Report for Discharge of Treated Water to Regional Aquifer – 2017 Quarter 1, DP-1835
(2) Treated Effluent Analytical Results Summary Table – 2017 Quarter 1, DP-1835
(3) Groundwater Elevation Contour Map – 2017 Quarter 1, DP-1835
(4) Groundwater Monitoring Wells Analytical Results Summary Table – 2017 Quarter 1, DP-1835
(5) Groundwater Extraction and Treated Groundwater Injection Summary Tables – 2017 Quarter 1, DP-1835
(6) Facility Layout Map – 2017 Quarter 1, DP-1835

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Ms. Michelle Hunter, Chief
Ground Water Quality Bureau
New Mexico Environment Department
Harold Runnels Building, Room N2261
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, NM 87502

GROUND WATER
MAY 3 1 2017
BUREAU

Subject: **Quarterly Report – 2017 Quarter 1, Discharge Permit DP-1835, Class V Underground Injection Control Wells**

Dear Ms. Hunter:

On August 31, 2016, the New Mexico Environment Department (NMED) issued a Discharge Permit (DP) 1835 to the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) for the discharge of treated groundwater to the regional aquifer through up to six Class V Underground Injection-Control (UIC) wells. Pursuant to Condition No. 10 of the above-referenced discharge permit, DOE/LANS are required to submit quarterly reports for the previous quarter to document:

1. *Influent and discharge volumes from the treatment systems;*
2. *Quarterly groundwater and treated effluent sampling results; and*
3. *Operations/Maintenance activities.*

Pursuant to Condition Nos. 11, 12, and 13 of the above-referenced permit, the quarterly reports shall also contain general information, performance information, and monitoring data of treated effluent from each ion-exchange (IX) treatment system, respectively. During the 2017 January 1st through March 31st (Quarter 1) reporting period, discharge of treated groundwater to the regional aquifer continued under DP-1835. This treated discharge occurred at two of the UIC wells: CrIN-4 and CrIN-5. The Quarterly Report – 2017 Quarter 1 (Enclosure 1) provides the information required under DP-1835 for this reporting period.

ENCLOSURE 1

Quarterly Report for Discharge of
Treated Water to Regional Aquifer –
2017 Quarter 1, DP-1835

EPC-DO: 17-166

LA-UR-17-23244

U1601822

Date: MAY 3 1 2017

ENCLOSURE 1
Quarterly Report for Discharge of Treated Water to Regional Aquifer – 2017 Quarter 1, DP-1835

Introduction. On August 31, 2016, the New Mexico Environment Department (NMED) issued Discharge Permit (DP) 1835 to the U.S. Department of Energy and Los Alamos National Security, LLC (DOE/LANS) for the discharge of treated groundwater to the regional aquifer through up to six Class V underground injection-control (UIC) wells. Pursuant to Condition No. 10 of the above-referenced discharge permit, DOE/LANS are required to submit quarterly reports.

During the 2017 January 1 through March 31 (Quarter 1) reporting period, discharge of treated groundwater to the regional aquifer continued at two of the UIC wells, CrIN-4 and CrIN-5, under DP-1835. Treated discharge originated from extraction well CrEX-1 and was treated with treatment unit (CTU) CTUA.

Condition No. 10 of DP-1835 required DOE/LANS to submit a quarterly report to NMED by June 1 for the January 1 – March 31 discharge period. Several conditions within the permit identify information to be submitted in the quarterly report. The following information, with condition references, are required in the quarterly report:

1. *Influent and discharge volumes for the ion exchange (IX) treatment systems (Condition No. 10);*
2. *Quarterly treated effluent sampling results from each IX treatment system (Condition Nos. 10 and 13);*
3. *Quarterly depth to groundwater and groundwater quality sampling results (Condition Nos. 10 and 14);*
4. *Any operations/maintenance activities performed (Condition No. 10);*
5. *Any periodic test of mechanical integrity conducted (Condition No. 11);*
6. *Any replacement of primary or secondary IX vessels or associated treatment system infrastructures (Condition No. 11);*
7. *Any well work-overs conducted (Condition No. 11);*
8. *Any additional operational changes with the potential to markedly affect the discharge (Condition No. 11);*
9. *Monthly average, maximum, and minimum values for flow rate and volume of treated effluent transferred to each UIC well (Condition No. 12);*
10. *Totalized monthly volume of treated effluent transferred to each UIC well (Condition No. 12);*
11. *Monthly average, maximum, and minimum values of injection water level, pressure head above static level for each UIC well (Condition No. 12);*
12. *Daily volume injected at each UIC well (Condition No. 12);*
13. *Daily volume pumped from each extraction well (Condition No. 12);*
14. *Facility layout map (Condition No. 12);*
15. *Groundwater Elevation Contour Map (Condition No. 15).*

Each of the above requirements is addressed in this report and referenced enclosures.

ENCLOSURE 1
Quarterly Report for Discharge of Treated Water to Regional Aquifer – 2017 Quarter 1, DP-1835

Requirement 1: Influent and discharge volumes for the IX treatment system. Table 1 provides the influent and discharge volumes for ion-exchange (IX) treatment systems during the first quarter of 2017 for activities completed under DP-1835. As previously identified, injection only occurred at UIC wells CrIN-4 and CrIN-5 during the quarter. Treated discharge originated from extraction well CrEX-1 and was treated with treatment unit CTUA.

Table 1. Total Influent and Discharge Volumes for IX Treatment Systems – 2017 Quarter 1

Treatment Unit	Influent Volume[1,3] (gal)	Effluent Volume[2,3] (gal)
CTUA	6,226,097	6,056,888
CTUB	N/A	N/A
CTUC	N/A	N/A

Notes:
N/A - treatment unit did not treat any groundwater that was subsequently injected during the quarter.
[1] Influent volume based on CrEX-1 extraction volume.
[2] Effluent volume based on combined CrIN-4 and CrIN-5 Injection volume.
[3] Individual flow meter accurate to ±5%

Requirement 2: Quarterly treated effluent sampling results from each IX treatment system. Treated effluent analytical results from samples collected during 2017 Quarter 1 for activities completed under DP-1835 are summarized in Enclosure 2. No results for total chromium, nitrate-nitrogen (NO_3-N), perchlorate, sulfate, total dissolved solids, fluoride, or chloride exceeded 90% of the numeric standards of 20.6.2.3103 New Mexico Administrative Code (NMAC) or 90% of the numeric standards established for tap water in Table A-1 for constituents not listed in 20.6.2.3103 NMAC. These values for chromium, nitrate-nitrogen (NO_3-N), perchlorate, sulfate, total dissolved solids, fluoride, or chloride are 45 µg/L, 9 mg/L, 12.4 µg/L, 540 mg/L, 900 mg/L, 1.44 mg/L, and 225 mg/L, respectively. In addition, during this quarter the annual compliance sample for CTUA was obtained for the analytes listed in 20.6.2.3103 NMAC and all toxic pollutants defined in 20.6.2.WW NMAC. These constituents were all either below standards or not detected in this sample. Enclosure 2 also contains these results.

Requirement 3: Quarterly depth to groundwater and groundwater quality sampling results. Table 2 provides the quarterly groundwater elevation measurements. Enclosure 3 provides a groundwater elevation contour map and an explanation of how this map was generated.

ENCLOSURE 1
Quarterly Report for Discharge of Treated Water to Regional Aquifer – 2017 Quarter 1, DP-1835

Table 2. Groundwater Elevations Summary for Groundwater Monitoring Wells – 2017 Quarter 1

Monitoring Well	Groundwater Elevation[1] (ft)
CrCH-1	5835.90
CrCH-2 S1	5832.70
CrCH-2 S2	5832.92
CrCH-3	5834.08
CrCH-4	5837.15
CrCH-5	5835.48
R-11	5833.23
R-13	5831.51
R-43 S1	5835.13
R-43 S2	5834.49
R-44 S1	5832.44
R-44 S2	5832.04
R-45 S1	5832.28
R-45 S2	5832.15
R-50 S1	5833.69
R-50 S2	5832.91
R-61 S1	5835.29
R-61 S2	5835.50
R-62	5838.70
SIMR-2[2]	5832.34
SIMR-2[3]	-

Notes
[1]Groundwater elevations provided based on February 5 daily average values from transducers.
[2]Fourth Quarter 2016 SIMR-2 data reported here in accordance with DP-1835 Fourth Quarter 2016 Report (EPC-DO: 17-066). Data was unavailable at the time of that report's preparation in accordance with the Memorandum of Agreement between Pueblo de San Ildefonso and DOE/LANS.
[3]Data has been collected but is unavailable at the time of this report's preparation in accordance with the Memorandum of Agreement between Pueblo de San Ildefonso and DOE/LANS. This data will be presented in the next quarterly report.

Quarterly groundwater analytical results from samples collected during 2017 Quarter 1 for the monitoring wells listed in Condition No. 14 are summarized in Table 3. Additional summary data related to these samples are provided in Enclosure 4.

ENCLOSURE 1
Quarterly Report for Discharge of Treated Water to Regional Aquifer –
2017 Quarter 1, DP-1835

Table 3. Summary Table of Analytical Results for Groundwater Monitoring Wells
2017 Quarter 1

Location	Sample Date	Analyte						
		Chloride (mg/L)	Perchlorate (µg/L)	Chromium (µg/L)	Fluoride (mg/L)	Nitrate-Nitrite as Nitrogen (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
R-11	2/9/2017	4.07	0.780	16.3	0.345	5.81	10.4	186
R-11	2/9/2017	4.13	0.802	16.8	0.343	6.22	10.3	177
R-13	2/10/2017	2.49	0.422	4.34	0.233	0.71	3.23	133
R-43 S1	2/13/2017	8.27	0.949	173	0.297	5.74	16.4	154
R-43 S2	2/13/2017	5.51	0.858	14.7	0.187	3.65	8.24	161
R-44 S1	2/10/2017	2.23	0.455	13.5	0.247	1.05	3.15	129
R-44 S2	2/17/2017	2.14	0.346	8.19	0.289	0.63	2.58	180
R-45 S1	2/7/2017	5.3	0.603	43.4	0.242	2.93	8.15	163
R-45 S2	2/7/2017	4.0	0.435	19	0.325	0.81	4.64	159
R-50 S1	1/18/2017	8.36	0.563	121	0.199	1.96	12.0	NA
R-50 S1	2/21/2017	8.64	0.599	133	0.262	2.05	12.0	126
R-50 S1	3/22/2017	9.03	0.628	NA	0.246	2.57	12.8	NA
R-50 S2	1/18/2017	2.21	0.324	4.71	0.255	0.49	2.62	NA
R-50 S2	2/16/2017	2.08	0.331	4.26	0.326	0.46	2.46	121
R-50 S2	3/22/2017	2.13	0.340	NA	0.314	0.51	2.66	NA
R-62	2/21/2017	11.2	0.813	217	0.15	1.64	20.1	144
SIMR-2[1]	11/21/2016	2.17	0.417	4.89	0.164	0.67	2.81	160
SIMR-2[2]	2/15/2017	-	-	-	-	-	-	-
SIMR-2[2]	3/30/2017	-	-	-	-	-	-	-

[1]Fourth Quarter 2016 SIMR-2 data reported here in accordance with DP-1835 Fourth Quarter 2016 Report (EPC-DO: 17-066). Data was unavailable at the time of that report's preparation in accordance with the Memorandum of Agreement between Pueblo de San Ildefonso and DOE/LANS.

[2]Data has been collected but is unavailable at the time of this report's preparation in accordance with the Memorandum of Agreement between Pueblo de San Ildefonso and DOE/LANS. This data will be presented in the next quarterly report, if available.

NA - Not Available

Requirement 4: Any operations/maintenance activities performed. Following system shutdown on December 21, 2016 due to (1) the Laboratory closure between December 24, 2016, and January 2, 2017 and (2) treatment system/underground injection system just coming online, injection of treated groundwater resumed on January 5, 2017 at both CrIN-4 and CrIN-5. Between February 7, 2017 and February 21, 2017 injection of treated groundwater did not occur while electrical system and panel upgrades were completed. Injection of treated groundwater resumed on February 21, 2017. Additional operations/maintenance activities were not performed except for replacement of IX vessels as described below.

Requirement 5: Any periodic test of mechanical integrity conducted. Periodic testing of mechanical integrity was not conducted during 2017 Quarter 1. As indicated in the 2016 Quarter 4 report, DOE/LANS submitted documentation demonstrating initial mechanical integrity of the distribution piping and UIC wells for treatment unit CTUA, CrIN-4, and CrIN-5. In accordance with Condition No. 3 the next required integrity test of these items will occur within 5 yr of the initial test unless an UIC well is reconfigured. In this scenario, a mechanical integrity test before reinjection of treated effluent at that well will be completed pursuant to Condition No. 3.

Requirement 6: Any replacement of primary or secondary IX vessels or associated treatment system infrastructures. Replacement of primary IX vessel for treatment Train C with the secondary IX vessel and a new secondary IX vessel was installed for treatment train C on January 31, 2017. Replacement of primary IX vessel for treatment Train A with the secondary IX vessel and a new secondary IX vessel was installed for treatment train A on March 16, 2017. Both treatment trains are within treatment unit CTUA.

Requirement 7: Any well work-overs conducted. Well work-overs did not occur during 2017 Quarter 1.

Requirement 8: Any additional operational changes with the potential to markedly affect the discharge. Injection of treated ground water resumed January 5, 2017 at both CrIN-4 and CrIN-5. Other than the period when electrical system/panel upgrades were occurring and injection of treated groundwater was temporarily stopped between February 7, 2017 and February 21, 2017 no additional operational changes occurred during the reporting period.

Requirement 9: Monthly average, maximum, and minimum values for flow rate and volume of treated effluent transferred to each UIC well. Table 4 provides the monthly average, maximum, and minimum values for flow rate and volume of treated effluent transferred to each well in 2017 Quarter 1.

ENCLOSURE 1
Quarterly Report for Discharge of Treated Water to Regional Aquifer – 2017 Quarter 1, DP-1835

Table 4. Flows and Volumes of Treated Effluent Injected – 2017 Quarter 1

UIC Well	Flow rate (gpm)			Volume (gal)		
	Average	Maximum	Minimum	Average	Maximum	Minimum
	January					
CrIN-1[1]	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-2[1]	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-3[1]	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-4	31.7	37.5	24.9	33906	68656	1641
CrIN-5	33.2	38.6	22.9	34590	60553	1330
CrIN-6[2]	N/A	N/A	N/A	N/A	N/A	N/A
	February					
CrIN-1[1]	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-2[1]	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-3[1]	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-4	35.2	41.1	30.3	36521	53922	334
CrIN-5	35.3	40.8	32.4	38415	61967	421
CrIN-6[2]	N/A	N/A	N/A	N/A	N/A	N/A
	March					
CrIN-1[1]	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-2[1]	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-3[1]	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-4	35.9	43.3	33.1	47599	73325	32348
CrIN-5	35.9	48.1	30.3	46070	66246	32178
CrIN-6[2]	N/A	N/A	N/A	N/A	N/A	N/A

Notes:
N/A = Treated groundwater not injected during the month at this location.
[1] UIC well constructed, but connections not completed/approved to begin injection of treated groundwater.
[2] UIC well not constructed at end of quarter.

Requirement 10: Totalized monthly volume of treated effluent transferred to each UIC well. Table 5 provides totalized monthly volumes of treated effluent transferred to each well. As previously identified, injection only occurred at UIC wells CrIN-4 and CrIN-5 during the quarter.

ENCLOSURE 1
Quarterly Report for Discharge of Treated Water to Regional Aquifer – 2017 Quarter 1, DP-1835

Table 5. Totalized Monthly Volumes Injected by Well – 2017 Quarter 1

Injection Well	January (gal)	February (gal)	March (gal)
CrIN-1[1]	N/A	N/A	N/A
CrIN-2[1]	N/A	N/A	N/A
CrIN-3[1]	N/A	N/A	N/A
CrIN-4	1,051,073	584,341	1,475,571
CrIN-5	1,072,283	614,647	1,428,182
CrIN-6[2]	N/A	N/A	N/A

Notes:
N/A = Treated groundwater not injected during the quarter at this location.
[1] UIC well constructed, but connections not completed/approved to begin injection of treated groundwater.
[2] UIC well not constructed at end of quarter.

Requirement 11: Monthly average, maximum, and minimum values of injection water level (pressure) head above static level for each UIC well. Table 6 provides the monthly average, maximum, and minimum values for injection water level above static level for each UIC well. As previously indicated, injection only occurred at UIC wells CrIN-4 and CrIN-5 during the quarter.

Table 6. Water Level Values Above Static Level by UIC Well – 2017 Quarter 1

UIC Well	January			February			March		
	Average (ft)	Maximum (ft)	Minimum (ft)	Average (ft)	Maximum (ft)	Minimum (ft)	Average (ft)	Maximum (ft)	Minimum (ft)
CrIN-1[1]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-2[1]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-3[1]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CrIN-4	2.2	12.6	1.4	2.2	2.9	1.7	3.4	6.4	1.5
CrIN-5	3.6	13.4	2.89	3.8	4.5	3.2	3.9	6.1	3.4
CrIN-6[2]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:
N/A = Treated groundwater not injected during the month at this location.
[1] UIC well constructed, but connections not completed/approved to begin injection of treated groundwater.
[2] UIC well not constructed at end of quarter.

Requirement 12: Daily volume injected at each UIC well. Daily volumes of treated groundwater injected at CrIN-4 and CrIN-5 during 2017 Quarter 1 are provided in Enclosure 5.

Requirement 13: Daily volume pumped from each extraction well. Daily volumes of groundwater pumped from CrEX-1 during 2017 Quarter 1, which was subsequently injected at CrIN-4 and CrIN-5, are provided in Enclosure 5.

ENCLOSURE 1
Quarterly Report for Discharge of Treated Water to Regional Aquifer –
2017 Quarter 1, DP-1835

Requirement 14: Facility layout map. The facility layout map for 2017 Quarter 1 showing the location and number of each well is provided in Enclosure 6.

Requirement 15: Groundwater Elevation Contour Map. Enclosure 3 provides the groundwater elevation contour map and an explanation of how this map was generated.

ENCLOSURE 2

Treated Effluent Analytical
Results Summary Table –
2017 Quarter 1, DP-1835

EPC-DO: 17-166

LA-UR-17-23244

U1601822

Date: MAY 3 1 2017

Table E2-1
Treated Effluent Analytical Results Summary Table - 2017 Quarter 1, DP-1835

Location ID	Sample ID	Sample Date	Parameter Name	Result	Report Units	Lab Qualifier	Detect Flag	Filtered	Lab Method	Report Detection Limit
CTUA	CTUA-17-131777	03/29/17	Chloride	15.9	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTUA-17-131774	03/23/17	Chloride	14.7	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTU6A-17-129969	03/16/17	Chloride	14.2	mg/L	H	Y	F	EPA:300.0	0.4
CTUA	CTU6A-17-129970	03/08/17	Chloride	15.5	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTU6A-17-129967	03/01/17	Chloride	15.7	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTU6A-17-129972	02/23/17	Chloride	17.2	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTU6A-17-129973	02/06/17	Chloride	24.1	mg/L	H	Y	F	EPA:300.0	1
CTUA	CTU6A-17-130110	02/06/17	Chloride	21.1	mg/L		Y	F	EPA:300.0	1.0
CTUA	CTU6A-17-129971	02/01/17	Chloride	15.9	mg/L	H	Y	F	EPA:300.0	0.4
CTUA	CTUA-17-128882	01/23/17	Chloride	15.5	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTUA-17-128876	01/17/17	Chloride	14.9	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTUA-17-128878	01/09/17	Chloride	15.9	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTUA-17-128879	01/05/17	Chloride	17.2	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTUA-17-131777	03/29/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTUA-17-131774	03/23/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTU6A-17-129969	03/16/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTU6A-17-129970	03/08/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTU6A-17-129967	03/01/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTU6A-17-129972	02/23/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTU6A-17-129973	02/06/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTU6A-17-130110	02/06/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTU6A-17-129971	02/01/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTUA-17-128882	01/23/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTUA-17-128876	01/17/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTUA-17-128878	01/09/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTUA-17-128879	01/05/17	Chromium	3	ug/L	U	N	F	SW-846:6020	10
CTUA	CTUA-17-131777	03/29/17	Fluoride	0.322	mg/L		Y	F	EPA:300.0	0.1

Table E2-1
Treated Effluent Analytical Results Summary Table - 2017 Quarter 1, DP-1835

Location ID	Sample ID	Sample Date	Parameter Name	Result	Report Units	Lab Qualifier	Detect Flag	Filtered	Lab Method	Report Detection Limit
CTUA	CTUA-17-131774	03/23/17	Fluoride	0.203	mg/L		Y	F	EPA:300.0	0.1
CTUA	CTU6A-17-129969	03/16/17	Fluoride	0.335	mg/L	H	Y	F	EPA:300.0	0.1
CTUA	CTU6A-17-129970	03/08/17	Fluoride	0.333	mg/L		Y	F	EPA:300.0	0.1
CTUA	CTU6A-17-129967	03/01/17	Fluoride	0.32	mg/L		Y	F	EPA:300.0	0.1
CTUA	CTU6A-17-129972	02/23/17	Fluoride	0.334	mg/L		Y	F	EPA:300.0	0.1
CTUA	CTU6A-17-129973	02/06/17	Fluoride	0.336	mg/L	H	Y	F	EPA:300.0	0.1
CTUA	CTU6A-17-130110	02/06/17	Fluoride	0.259	mg/L		Y	F	EPA:300.0	0.1
CTUA	CTU6A-17-129971	02/01/17	Fluoride	0.338	mg/L	H	Y	F	EPA:300.0	0.1
CTUA	CTUA-17-128882	01/23/17	Fluoride	0.266	mg/L		Y	F	EPA:300.0	0.1
CTUA	CTUA-17-128876	01/17/17	Fluoride	0.175	mg/L		Y	F	EPA:300.0	0.1
CTUA	CTUA-17-128878	01/09/17	Fluoride	0.162	mg/L		Y	F	EPA:300.0	0.1
CTUA	CTUA-17-128879	01/05/17	Fluoride	0.211	mg/L		Y	F	EPA:300.0	0.1
CTUA	CTUA-17-131777	03/29/17	Nitrate-Nitrite as Nitrogen	2.52	mg/L		Y	F	EPA:353.2	0.25
CTUA	CTUA-17-131774	03/23/17	Nitrate-Nitrite as Nitrogen	3.1	mg/L		Y	F	EPA:353.2	0.25
CTUA	CTU6A-17-129969	03/16/17	Nitrate-Nitrite as Nitrogen	2.52	mg/L		Y	F	EPA:353.2	0.25
CTUA	CTU6A-17-129970	03/08/17	Nitrate-Nitrite as Nitrogen	2.5	mg/L		Y	F	EPA:353.2	0.25
CTUA	CTU6A-17-129967	03/01/17	Nitrate-Nitrite as Nitrogen	2.53	mg/L		Y	F	EPA:353.2	0.25
CTUA	CTU6A-17-129972	02/23/17	Nitrate-Nitrite as Nitrogen	3.32	mg/L		Y	F	EPA:353.2	0.5
CTUA	CTU6A-17-129973	02/06/17	Nitrate-Nitrite as Nitrogen	1.29	mg/L		Y	F	EPA:353.2	0.05
CTUA	CTU6A-17-130110	02/06/17	Nitrate-Nitrite as Nitrogen	1.23	mg/L		Y	F	EPA:353.2	0.05
CTUA	CTU6A-17-129971	02/01/17	Nitrate-Nitrite as Nitrogen	2.26	mg/L		Y	F	EPA:353.2	0.5
CTUA	CTUA-17-128882	01/23/17	Nitrate-Nitrite as Nitrogen	2.55	mg/L		Y	F	EPA:353.2	0.25
CTUA	CTUA-17-128876	01/17/17	Nitrate-Nitrite as Nitrogen	2.55	mg/L		Y	F	EPA:353.2	0.25
CTUA	CTUA-17-128878	01/09/17	Nitrate-Nitrite as Nitrogen	3.23	mg/L		Y	F	EPA:353.2	0.5
CTUA	CTUA-17-128879	01/05/17	Nitrate-Nitrite as Nitrogen	3.07	mg/L		Y	F	EPA:353.2	0.5
CTUA	CTUA-17-131777	03/29/17	Perchlorate	0.12	ug/L	J	Y	F	SW-846:6850	0.2
CTUA	CTUA-17-131774	03/23/17	Perchlorate	0.108	ug/L	J	Y	F	SW-846:6850	0.2

Table E2-1
Treated Effluent Analytical Results Summary Table - 2017 Quarter 1, DP-1835

Location ID	Sample ID	Sample Date	Parameter Name	Result	Report Units	Lab Qualifier	Detect Flag	Filtered	Lab Method	Report Detection Limit
CTUA	CTU6A-17-129969	03/16/17	Perchlorate	0.05	ug/L	U	N	F	SW-846:6850	0.2
CTUA	CTU6A-17-129970	03/08/17	Perchlorate	0.0575	ug/L	J	Y	F	SW-846:6850	0.2
CTUA	CTU6A-17-129967	03/01/17	Perchlorate	0.05	ug/L	U	N	F	SW-846:6850	0.2
CTUA	CTU6A-17-129972	02/23/17	Perchlorate	0.05	ug/L	U	N	F	SW-846:6850	0.2
CTUA	CTU6A-17-129973	02/06/17	Perchlorate	0.05	ug/L	U	N	F	SW-846:6850	0.2
CTUA	CTU6A-17-130110	02/06/17	Perchlorate	0.05	ug/L	U	N	F	SW-846:6850	0.2
CTUA	CTU6A-17-129971	02/01/17	Perchlorate	0.05	ug/L	U	N	F	SW-846:6850	0.2
CTUA	CTUA-17-128882	01/23/17	Perchlorate	0.136	ug/L	J	Y	F	SW-846:6850	0.2
CTUA	CTUA-17-128876	01/17/17	Perchlorate	0.154	ug/L	J	Y	F	SW-846:6850	0.2
CTUA	CTUA-17-128878	01/09/17	Perchlorate	0.173	ug/L	J	Y	F	SW-846:6850	0.2
CTUA	CTUA-17-128879	01/05/17	Perchlorate	0.153	ug/L	J	Y	F	SW-846:6850	0.2
CTUA	CTUA-17-131777	03/29/17	Sulfate	23.2	mg/L		Y	F	EPA:300.0	0.8
CTUA	CTUA-17-131774	03/23/17	Sulfate	15.9	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTU6A-17-129969	03/16/17	Sulfate	21.4	mg/L	H	Y	F	EPA:300.0	0.8
CTUA	CTU6A-17-129970	03/08/17	Sulfate	23.1	mg/L		Y	F	EPA:300.0	0.8
CTUA	CTU6A-17-129967	03/01/17	Sulfate	21.5	mg/L		Y	F	EPA:300.0	0.8
CTUA	CTU6A-17-129972	02/23/17	Sulfate	12.1	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTU6A-17-129973	02/06/17	Sulfate	12.1	mg/L	H	Y	F	EPA:300.0	0.4
CTUA	CTU6A-17-130110	02/06/17	Sulfate	10.6	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTU6A-17-129971	02/01/17	Sulfate	23.4	mg/L	H	Y	F	EPA:300.0	0.8
CTUA	CTUA-17-128882	01/23/17	Sulfate	21.9	mg/L		Y	F	EPA:300.0	0.8
CTUA	CTUA-17-128876	01/17/17	Sulfate	21.4	mg/L		Y	F	EPA:300.0	0.8
CTUA	CTUA-17-128878	01/09/17	Sulfate	10.8	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTUA-17-128879	01/05/17	Sulfate	11.7	mg/L		Y	F	EPA:300.0	0.4
CTUA	CTUA-17-131777	03/29/17	Total Dissolved Solids	193	mg/L		Y	F	EPA:160.1	14.3
CTUA	CTUA-17-131774	03/23/17	Total Dissolved Solids	229	mg/L		Y	F	EPA:160.1	14.3
CTUA	CTU6A-17-129969	03/16/17	Total Dissolved Solids	279	mg/L	H	Y	F	EPA:160.1	14.3

Table E2-1
Treated Effluent Analytical Results Summary Table - 2017 Quarter 1, DP-1835

Location ID	Sample ID	Sample Date	Parameter Name	Result	Report Units	Lab Qualifier	Detect Flag	Filtered	Lab Method	Report Detection Limit
CTUA	CTU6A-17-129970	03/08/17	Total Dissolved Solids	233	mg/L	H	Y	F	EPA:160.1	14.3
CTUA	CTU6A-17-129967	03/01/17	Total Dissolved Solids	224	mg/L	H	Y	F	EPA:160.1	14.3
CTUA	CTU6A-17-129972	02/23/17	Total Dissolved Solids	207	mg/L	H	Y	F	EPA:160.1	14.3
CTUA	CTU6A-17-129973	02/06/17	Total Dissolved Solids	211	mg/L	H	Y	F	EPA:160.1	14.3
CTUA	CTU6A-17-130110	02/06/17	Total Dissolved Solids	181	mg/L		Y	F	EPA:160.1	14.3
CTUA	CTU6A-17-129971	02/01/17	Total Dissolved Solids	220	mg/L	H	Y	F	EPA:160.1	14.3
CTUA	CTUA-17-128882	01/23/17	Total Dissolved Solids	180	mg/L		Y	F	EPA:160.1	14.3
CTUA	CTUA-17-128876	01/17/17	Total Dissolved Solids	206	mg/L		Y	F	EPA:160.1	14.3
CTUA	CTUA-17-128878	01/09/17	Total Dissolved Solids	171	mg/L		Y	F	EPA:160.1	14.3
CTUA	CTUA-17-128879	01/05/17	Total Dissolved Solids	229	mg/L		Y	F	EPA:160.1	14.3

Notes:

U - in the lab qualifier column means analyte is classified as not detected.

N - in the detect flag column means the analyte was undetected.

Y - in the detect flag column means the analyte was detected.

F - filtered.

H - analytical holding time was exceeded.

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Table E2-2

Treated Effluent Analytical Results Summary Table - CTUA 2017 Annual Sample, DP-1835

Field Sample ID	Sample Date	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Sample Matrix	Filtered	Lab Method	Report Detection Limit
CTU6A-17-130109	02-06-2017	2,4-Diamino-6-nitrotoluene	0.532	ug/L	UQ	N	W	N	SW-846:8321A_MOD	2.66
CTU6A-17-130109	02-06-2017	2,6-Diamino-4-nitrotoluene	0.532	ug/L	U	N	W	N	SW-846:8321A_MOD	2.66
CTU6A-17-130109	02-06-2017	3,5-Dinitroaniline	0.319	ug/L	U	N	W	N	SW-846:8321A_MOD	1.06
CTU6A-17-130109	02-06-2017	Acenaphthene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Acenaphthylene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130110	02-06-2017	Acidity or Alkalinity of a solution	7.81	SU	H	Y	W	Y	EPA:150.1	0.1
CTU6A-17-130109	02-06-2017	Aldrin	0.00686	ug/L	U	N	W	N	SW-846:8081B	0.0206
CTU6A-17-130110	02-06-2017	Alkalinity-CO3	1.45	mg/L	U	N	W	Y	EPA:310.1	4.0
CTU6A-17-130110	02-06-2017	Alkalinity-CO3+HCO3	72.0	mg/L		Y	W	Y	EPA:310.1	4.0
CTU6A-17-130110	02-06-2017	Aluminum	68.0	ug/L	U	N	W	Y	SW-846:6010C	200
CTU6A-17-130109	02-06-2017	Amino-2,6-dinitrotoluene[4-]	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266
CTU6A-17-130109	02-06-2017	Amino-4,6-dinitrotoluene[2-]	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266
CTU6A-17-130109	02-06-2017	Aniline	4.2	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Anthracene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130110	02-06-2017	Antimony	1.0	ug/L	U	N	W	Y	SW-846:6020	3.0
CTU6A-17-130109	02-06-2017	Aroclor-1016	0.0333	ug/L	U	N	W	N	SW-846:8082	0.1
CTU6A-17-130109	02-06-2017	Aroclor-1221	0.0333	ug/L	U	N	W	N	SW-846:8082	0.1
CTU6A-17-130109	02-06-2017	Aroclor-1232	0.0333	ug/L	U	N	W	N	SW-846:8082	0.1
CTU6A-17-130109	02-06-2017	Aroclor-1242	0.0333	ug/L	U	N	W	N	SW-846:8082	0.1
CTU6A-17-130109	02-06-2017	Aroclor-1248	0.0333	ug/L	U	N	W	N	SW-846:8082	0.1
CTU6A-17-130109	02-06-2017	Aroclor-1254	0.0333	ug/L	U	N	W	N	SW-846:8082	0.1
CTU6A-17-130109	02-06-2017	Aroclor-1260	0.0333	ug/L	U	N	W	N	SW-846:8082	0.1
CTU6A-17-130109	02-06-2017	Aroclor-1262	0.0333	ug/L	U	N	W	N	SW-846:8082	0.1
CTU6A-17-130110	02-06-2017	Arsenic	1.7	ug/L	U	N	W	Y	SW-846:6020	5.0
CTU6A-17-130109	02-06-2017	Atrazine	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Azobenzene	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130110	02-06-2017	Barium	38.1	ug/L		Y	W	Y	SW-846:6010C	5.0
CTU6A-17-130109	02-06-2017	Benzidine	3.9	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Benzo(a)anthracene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Benzo(a)pyrene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Benzo(b)fluoranthene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Benzo(g,h,i)perylene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Benzo(k)fluoranthene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Benzoic Acid	6.0	ug/L	U	N	W	N	SW-846:8270D	20.0
CTU6A-17-130109	02-06-2017	Benzyl Alcohol	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0

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Table E2-2

Treated Effluent Analytical Results Summary Table - CTUA 2017 Annual Sample, DP-1835

Field Sample ID	Sample Date	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Sample Matrix	Filtered	Lab Method	Report Detection Limit
CTU6A-17-130110	02-06-2017	Beryllium	1.0	ug/L	U	N	W	Y	SW-846:6010C	5.0
CTU6A-17-130109	02-06-2017	BHC[alpha-]	0.00686	ug/L	U	N	W	N	SW-846:8081B	0.0206
CTU6A-17-130109	02-06-2017	BHC[beta-]	0.00686	ug/L	U	N	W	N	SW-846:8081B	0.0206
CTU6A-17-130109	02-06-2017	BHC[delta-]	0.00686	ug/L	U	N	W	N	SW-846:8081B	0.0206
CTU6A-17-130109	02-06-2017	BHC[gamma-]	0.00686	ug/L	U	N	W	N	SW-846:8081B	0.0206
CTU6A-17-130109	02-06-2017	Bis(2-chloroethoxy)methane	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Bis(2-chloroethyl)ether	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Bis(2-ethylhexyl)phthalate	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130110	02-06-2017	Boron	16	ug/L	J	Y	W	Y	SW-846:6010C	50.0
CTU6A-17-130110	02-06-2017	Bromide	0.0694	mg/L	J	Y	W	Y	EPA:300.0	0.2
CTU6A-17-130109	02-06-2017	Bromophenyl-phenylether[4-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Butylbenzylphthalate	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130110	02-06-2017	Cadmium	0.3	ug/L	U	N	W	Y	SW-846:6020	1.0
CTU6A-17-130110	02-06-2017	Calcium	23.3	mg/L		Y	W	Y	SW-846:6010C	0.2
CTU6A-17-130109	02-06-2017	Chlordane[alpha-]	0.00686	ug/L	U	N	W	N	SW-846:8081B	0.0206
CTU6A-17-130109	02-06-2017	Chlordane[gamma-]	0.00686	ug/L	U	N	W	N	SW-846:8081B	0.0206
CTU6A-17-130110	02-06-2017	Chloride	21.1	mg/L		Y	W	Y	EPA:300.0	1.0
CTU6A-17-130109	02-06-2017	Chloro-3-methylphenol[4-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Chloroaniline[4-]	3.3	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Chloronaphthalene[2-]	0.41	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Chlorophenol[2-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Chlorophenyl-phenyl[4-] Ether	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130110	02-06-2017	Chromium	3.0	ug/L	U	N	W	Y	SW-846:6020	10.0
CTU6A-17-130109	02-06-2017	Chrysene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130110	02-06-2017	Cobalt	1.0	ug/L	U	N	W	Y	SW-846:6010C	5.0
CTU6A-17-130110	02-06-2017	Copper	3.0	ug/L	U	N	W	Y	SW-846:6010C	10.0
CTU6A-17-130109	02-06-2017	Cyanide (Total)	0.00167	mg/L	U	N	W	N	EPA:335.4	0.005
CTU6A-17-130109	02-06-2017	DDD[4,4'-]	0.0103	ug/L	U	N	W	N	SW-846:8081B	0.0412
CTU6A-17-130109	02-06-2017	DDE[4,4'-]	0.0103	ug/L	U	N	W	N	SW-846:8081B	0.0412
CTU6A-17-130109	02-06-2017	DDT[4,4'-]	0.0103	ug/L	U	N	W	N	SW-846:8081B	0.0412
CTU6A-17-130109	02-06-2017	Dibenz(a,h)anthracene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Dibenzofuran	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dichlorobenzene[1,2-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dichlorobenzene[1,3-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dichlorobenzene[1,4-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0

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Table E2-2

Treated Effluent Analytical Results Summary Table - CTUA 2017 Annual Sample, DP-1835

Field Sample ID	Sample Date	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Sample Matrix	Filtered	Lab Method	Report Detection Limit
CTU6A-17-130109	02-06-2017	Dichlorobenzidine[3,3'-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dichlorophenol[2,4-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dieldrin	0.0103	ug/L	U	N	W	N	SW-846:8081B	0.0412
CTU6A-17-130109	02-06-2017	Diethylphthalate	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dimethyl Phthalate	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dimethylphenol[2,4-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Di-n-butylphthalate	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dinitro-2-methylphenol[4,6-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dinitrobenzene[1,3-]	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266
CTU6A-17-130109	02-06-2017	Dinitrophenol[2,4-]	5.0	ug/L	U	N	W	N	SW-846:8270D	20.0
CTU6A-17-130109	02-06-2017	Dinitrotoluene[2,4-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dinitrotoluene[2,4-]	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266
CTU6A-17-130109	02-06-2017	Dinitrotoluene[2,6-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dinitrotoluene[2,6-]	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266
CTU6A-17-130109	02-06-2017	Di-n-octylphthalate	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dinoseb	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Dioxane[1,4-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Diphenylamine	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Endosulfan I	0.00686	ug/L	U	N	W	N	SW-846:8081B	0.0206
CTU6A-17-130109	02-06-2017	Endosulfan II	0.0103	ug/L	U	N	W	N	SW-846:8081B	0.0412
CTU6A-17-130109	02-06-2017	Endosulfan Sulfate	0.0103	ug/L	U	N	W	N	SW-846:8081B	0.0412
CTU6A-17-130109	02-06-2017	Endrin	0.0103	ug/L	U	N	W	N	SW-846:8081B	0.0412
CTU6A-17-130109	02-06-2017	Endrin Aldehyde	0.00686	ug/L	U	N	W	N	SW-846:8081B	0.0412
CTU6A-17-130109	02-06-2017	Endrin Ketone	0.0103	ug/L	U	N	W	N	SW-846:8081B	0.0412
CTU6A-17-130109	02-06-2017	Fluoranthene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Fluorene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130110	02-06-2017	Fluoride	0.259	mg/L		Y	W	Y	EPA:300.0	0.1
CTU6A-17-130110	02-06-2017	Hardness	91	mg/L		Y	W	Y	SM:A2340B	1.24
CTU6A-17-130109	02-06-2017	Heptachlor	0.00686	ug/L	U	N	W	N	SW-846:8081B	0.0206
CTU6A-17-130109	02-06-2017	Heptachlor Epoxide	0.00686	ug/L	U	N	W	N	SW-846:8081B	0.0206
CTU6A-17-130109	02-06-2017	Hexachlorobenzene	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Hexachlorobutadiene	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Hexachlorocyclopentadiene	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Hexachloroethane	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	HMX	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266

Table E2-2

Treated Effluent Analytical Results Summary Table - CTUA 2017 Annual Sample, DP-1835

Field Sample ID	Sample Date	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Sample Matrix	Filtered	Lab Method	Report Detection Limit
CTU6A-17-130109	02-06-2017	Indeno(1,2,3-cd)pyrene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130110	02-06-2017	Iron	30.0	ug/L	U	N	W	Y	SW-846:6010C	100
CTU6A-17-130109	02-06-2017	Isophorone	3.5	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130110	02-06-2017	Lead	0.5	ug/L	U	N	W	Y	SW-846:6020	2.0
CTU6A-17-130110	02-06-2017	Magnesium	7.93	mg/L		Y	W	Y	SW-846:6010C	0.3
CTU6A-17-130110	02-06-2017	Manganese	2.0	ug/L	U	N	W	Y	SW-846:6010C	10.0
CTU6A-17-130109	02-06-2017	Mercury	0.067	ug/L	U	N	W	N	EPA:245.2	0.2
CTU6A-17-130110	02-06-2017	Mercury	0.067	ug/L	U	N	W	Y	EPA:245.2	0.2
CTU6A-17-130109	02-06-2017	Methoxychlor[4,4'-]	0.0515	ug/L	U	N	W	N	SW-846:8081B	0.206
CTU6A-17-130109	02-06-2017	Methylnaphthalene[1-]	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Methylnaphthalene[2-]	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Methylphenol[2-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Methylphenol[3-,4-]	3.7	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130110	02-06-2017	Molybdenum	0.3	ug/L	U	N	W	Y	SW-846:6020	0.5
CTU6A-17-130109	02-06-2017	Naphthalene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130110	02-06-2017	Nickel	2.41	ug/L		Y	W	Y	SW-846:6020	2.0
CTU6A-17-130110	02-06-2017	Nitrate-Nitrite as Nitrogen	1.23	mg/L		Y	W	Y	EPA:353.2	0.05
CTU6A-17-130109	02-06-2017	Nitroaniline[2-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Nitroaniline[3-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Nitroaniline[4-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Nitrobenzene	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Nitrobenzene	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266
CTU6A-17-130109	02-06-2017	Nitrophenol[2-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Nitrophenol[4-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Nitrosodiethylamine[N-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Nitrosodimethylamine[N-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Nitroso-di-n-butylamine[N-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Nitroso-di-n-propylamine[N-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Nitrosopyrrolidine[N-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Nitrotoluene[2-]	0.0872	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266
CTU6A-17-130109	02-06-2017	Nitrotoluene[3-]	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266
CTU6A-17-130109	02-06-2017	Nitrotoluene[4-]	0.16	ug/L	U	N	W	N	SW-846:8321A_MOD	0.532
CTU6A-17-130109	02-06-2017	Oxybis(1-chloropropane)[2,2'-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Pentachlorobenzene	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Pentachlorophenol	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0

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Table E2-2

Treated Effluent Analytical Results Summary Table - CTUA 2017 Annual Sample, DP-1835

Field Sample ID	Sample Date	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Sample Matrix	Filtered	Lab Method	Report Detection Limit
CTU6A-17-130110	02-06-2017	Perchlorate	0.05	ug/L	U	N	W	Y	SW-846:6850	0.2
CTU6A-17-130109	02-06-2017	PETN	0.106	ug/L	U	N	W	N	SW-846:8321A_MOD	0.532
CTU6A-17-130109	02-06-2017	Phenanthrene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Phenol	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130110	02-06-2017	Potassium	1.76	mg/L		Y	W	Y	SW-846:6010C	0.15
CTU6A-17-130109	02-06-2017	Pyrene	0.3	ug/L	U	N	W	N	SW-846:8270D	1.0
CTU6A-17-130109	02-06-2017	Pyridine	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Radium-226	0.127	pCi/L	U	N	W	N	EPA:903.1	
CTU6A-17-130109	02-06-2017	Radium-228	0.258	pCi/L	U	N	W	N	EPA:904	
CTU6A-17-130109	02-06-2017	RDX	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266
CTU6A-17-130110	02-06-2017	Selenium	2.0	ug/L	U	N	W	Y	SW-846:6020	5.0
CTU6A-17-130110	02-06-2017	Silicon Dioxide	69.3	mg/L		Y	W	Y	SW-846:6010C	0.213
CTU6A-17-130110	02-06-2017	Silver	0.4	ug/L	U	N	W	Y	SW-846:6020	1.0
CTU6A-17-130110	02-06-2017	Sodium	12.7	mg/L		Y	W	Y	SW-846:6010C	0.3
CTU6A-17-130110	02-06-2017	Specific Conductance	243	uS/cm		Y	W	Y	EPA:120.1	1
CTU6A-17-130110	02-06-2017	Strontium	102	ug/L		Y	W	Y	SW-846:6010C	5.0
CTU6A-17-130110	02-06-2017	Sulfate	10.6	mg/L		Y	W	Y	EPA:300.0	0.4
CTU6A-17-130109	02-06-2017	TATB	0.319	ug/L	U	N	W	N	SW-846:8321A_MOD	1.06
CTU6A-17-130109	02-06-2017	Tetrachlorobenzene[1,2,4,5]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Tetrachlorophenol[2,3,4,6-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Tetryl	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.532
CTU6A-17-130110	02-06-2017	Thallium	0.6	ug/L	U	N	W	Y	SW-846:6020	2.0
CTU6A-17-130110	02-06-2017	Tin	3.09	ug/L	J	Y	W	Y	SW-846:6010C	10.0
CTU6A-17-130110	02-06-2017	Total Dissolved Solids	181	mg/L		Y	W	Y	EPA:160.1	14.3
CTU6A-17-130109	02-06-2017	Total Recoverable Phenolics	1.67	ug/L	U	N	W	N	EPA:420.4	5.0
CTU6A-17-130109	02-06-2017	Toxaphene (Technical Grade)	0.155	ug/L	U	N	W	N	SW-846:8081B	0.515
CTU6A-17-130109	02-06-2017	Trichlorobenzene[1,2,4-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Trichlorophenol[2,4,5-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Trichlorophenol[2,4,6-]	3.0	ug/L	U	N	W	N	SW-846:8270D	10.0
CTU6A-17-130109	02-06-2017	Trinitrobenzene[1,3,5-]	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266
CTU6A-17-130109	02-06-2017	Trinitrotoluene[2,4,6-]	0.0851	ug/L	U	N	W	N	SW-846:8321A_MOD	0.266
CTU6A-17-130109	02-06-2017	Tris (o-cresyl) phosphate	0.319	ug/L	U	N	W	N	SW-846:8321A_MOD	1.06
CTU6A-17-130110	02-06-2017	Uranium	0.067	ug/L	U	N	W	Y	SW-846:6020	0.2
CTU6A-17-130110	02-06-2017	Vanadium	3.67	ug/L	J	Y	W	Y	SW-846:6010C	5.0
CTU6A-17-130110	02-06-2017	Zinc	29.9	ug/L		Y	W	Y	SW-846:6010C	10.0

Table E2-2

Treated Effluent Analytical Results Summary Table - CTUA 2017 Annual Sample, DP-1835

Field Sample ID	Sample Date	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Sample Matrix	Filtered	Lab Method	Report Detection Limit
CTU6A-17-130598	02-24-2017	Acetone	1.5	ug/L	U	N	W	N	SW-846:8260B	10.0
CTU6A-17-130599	02-24-2017	Acetone	1.5	ug/L	U	N	W	N	SW-846:8260B	10.0
CTU6A-17-130598	02-24-2017	Acetonitrile	8.0	ug/L	U	N	W	N	SW-846:8260B	25.0
CTU6A-17-130599	02-24-2017	Acetonitrile	8.0	ug/L	U	N	W	N	SW-846:8260B	25.0
CTU6A-17-130598	02-24-2017	Acrolein	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Acrolein	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Acrylonitrile	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Acrylonitrile	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Benzene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Benzene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Bromobenzene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Bromobenzene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Bromochloromethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Bromochloromethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Bromodichloromethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Bromodichloromethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Bromoform	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Bromoform	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Bromomethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Bromomethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Butanol[1-]	15.0	ug/L	U	N	W	N	SW-846:8260B	50.0
CTU6A-17-130599	02-24-2017	Butanol[1-]	15.0	ug/L	U	N	W	N	SW-846:8260B	50.0
CTU6A-17-130598	02-24-2017	Butanone[2-]	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Butanone[2-]	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Butylbenzene[n-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Butylbenzene[n-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Butylbenzene[sec-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Butylbenzene[sec-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Butylbenzene[tert-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Butylbenzene[tert-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Carbon Disulfide	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Carbon Disulfide	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Carbon Tetrachloride	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Carbon Tetrachloride	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Chloro-1,3-butadiene[2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0

Table E2-2

Treated Effluent Analytical Results Summary Table - CTUA 2017 Annual Sample, DP-1835

Field Sample ID	Sample Date	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Sample Matrix	Filtered	Lab Method	Report Detection Limit
CTU6A-17-130599	02-24-2017	Chloro-1,3-butadiene[2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Chloro-1-propene[3-]	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Chloro-1-propene[3-]	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Chlorobenzene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Chlorobenzene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Chlorodibromomethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Chlorodibromomethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Chloroethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Chloroethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Chloroform	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Chloroform	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Chloromethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Chloromethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Chlorotoluene[2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Chlorotoluene[2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Chlorotoluene[4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Chlorotoluene[4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dibromo-3-Chloropropane[1,2-]	0.5	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dibromo-3-Chloropropane[1,2-]	0.5	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dibromoethane[1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dibromoethane[1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dibromomethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dibromomethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichlorobenzene[1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichlorobenzene[1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichlorobenzene[1,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichlorobenzene[1,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichlorobenzene[1,4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichlorobenzene[1,4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichlorodifluoromethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichlorodifluoromethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichloroethane[1,1-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichloroethane[1,1-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichloroethane[1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichloroethane[1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0

Table E2-2

Treated Effluent Analytical Results Summary Table - CTUA 2017 Annual Sample, DP-1835

Field Sample ID	Sample Date	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Sample Matrix	Filtered	Lab Method	Report Detection Limit
CTU6A-17-130598	02-24-2017	Dichloroethene[1,1-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichloroethene[1,1-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichloroethene[cis-1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichloroethene[cis-1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichloroethene[trans-1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichloroethene[trans-1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichloropropane[1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichloropropane[1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichloropropane[1,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichloropropane[1,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichloropropane[2,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichloropropane[2,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichloropropene[1,1-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichloropropene[1,1-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichloropropene[cis-1,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichloropropene[cis-1,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Dichloropropene[trans-1,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Dichloropropene[trans-1,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Diethyl Ether	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Diethyl Ether	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Ethyl Methacrylate	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Ethyl Methacrylate	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Ethylbenzene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Ethylbenzene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Hexachlorobutadiene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Hexachlorobutadiene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Hexanone[2-]	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Hexanone[2-]	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Iodomethane	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Iodomethane	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Isobutyl alcohol	15.0	ug/L	U	N	W	N	SW-846:8260B	50.0
CTU6A-17-130599	02-24-2017	Isobutyl alcohol	15.0	ug/L	U	N	W	N	SW-846:8260B	50.0
CTU6A-17-130598	02-24-2017	Isopropylbenzene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Isopropylbenzene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Isopropyltoluene[4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0

Table E2-2

Treated Effluent Analytical Results Summary Table - CTUA 2017 Annual Sample, DP-1835

Field Sample ID	Sample Date	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Sample Matrix	Filtered	Lab Method	Report Detection Limit
CTU6A-17-130599	02-24-2017	Isopropyltoluene[4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Methacrylonitrile	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Methacrylonitrile	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Methyl Methacrylate	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Methyl Methacrylate	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Methyl tert-Butyl Ether	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Methyl tert-Butyl Ether	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Methyl-2-pentanone[4-]	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Methyl-2-pentanone[4-]	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Methylene Chloride	1.0	ug/L	U	N	W	N	SW-846:8260B	10.0
CTU6A-17-130599	02-24-2017	Methylene Chloride	1.0	ug/L	U	N	W	N	SW-846:8260B	10.0
CTU6A-17-130598	02-24-2017	Naphthalene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Naphthalene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Propionitrile	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Propionitrile	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Propylbenzene[1-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Propylbenzene[1-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Styrene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Styrene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Tetrachloroethane[1,1,1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Tetrachloroethane[1,1,1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Tetrachloroethane[1,1,2,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Tetrachloroethane[1,1,2,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Tetrachloroethene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Tetrachloroethene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Toluene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Toluene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Trichloro-1,2,2-trifluoroethane[1,1,2-]	2.0	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Trichloro-1,2,2-trifluoroethane[1,1,2-]	2.0	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Trichlorobenzene[1,2,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Trichlorobenzene[1,2,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Trichlorobenzene[1,2,4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Trichlorobenzene[1,2,4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Trichloroethane[1,1,1-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Trichloroethane[1,1,1-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0

ENCLOSURE 2

Table E2-2

Treated Effluent Analytical Results Summary Table - CTUA 2017 Annual Sample, DP-1835

Field Sample ID	Sample Date	Parameter Name	Report Result	Report Units	Lab Qualifier	Detected	Sample Matrix	Filtered	Lab Method	Report Detection Limit
CTU6A-17-130598	02-24-2017	Trichloroethane[1,1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Trichloroethane[1,1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Trichloroethene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Trichloroethene	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Trichlorofluoromethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Trichlorofluoromethane	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Trichloropropane[1,2,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Trichloropropane[1,2,3-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Trimethylbenzene[1,2,4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Trimethylbenzene[1,2,4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Trimethylbenzene[1,3,5-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Trimethylbenzene[1,3,5-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Vinyl acetate	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130599	02-24-2017	Vinyl acetate	1.5	ug/L	U	N	W	N	SW-846:8260B	5.0
CTU6A-17-130598	02-24-2017	Vinyl Chloride	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Vinyl Chloride	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Xylene[1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130599	02-24-2017	Xylene[1,2-]	0.3	ug/L	U	N	W	N	SW-846:8260B	1.0
CTU6A-17-130598	02-24-2017	Xylene[1,3-]+Xylene[1,4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	2.0
CTU6A-17-130599	02-24-2017	Xylene[1,3-]+Xylene[1,4-]	0.3	ug/L	U	N	W	N	SW-846:8260B	2.0

Notes:

U - in the lab qualifier column means analyte is classified as not detected.

N - in the detect flag column means the analyte was undetected.

Y - in the detect flag column means the analyte was detected.

F - filtered.

H - analytical holding time was exceeded.

Q - One or more quality control criteria have not been met.

ENCLOSURE 3

Groundwater Elevation Contour Map –
2017 Quarter 1, DP-1835

EPC-DO: 17-166

LA-UR-17-23244

U1601822

Date: MAY 3 1 2017

ENCLOSURE 3

Explanation of groundwater elevation contour map. The regional aquifer beneath Los Alamos National Laboratory (LANL) is a complex hydrogeological system. The top of the aquifer is predominantly under phreatic (water-table) conditions, including in the area of the chromium plume beneath Mortandad Canyon. Groundwater flow directions and fluxes that control contaminant transport in the aquifer are generally dictated by the shape of the regional water table. The general shape of the regional water table beneath Pajarito Plateau is predominantly controlled by the areas of regional recharge to the west (the flanks of Sierra de los Valles and the Pajarito fault zone) and discharge to the east (the Rio Grande and the White Rock Canyon Springs). At more local scales such as the chromium site, the structure of the regional phreatic flow is also expected to be influenced by (1) local infiltration zones (e.g., beneath canyons); (2) heterogeneity and anisotropy in the aquifer properties; and (3) discharge zones (municipal water-supply wells, springs, and extraction wells within the chromium project area).

At the chromium site, the water-table elevations vary in time as a result of transient effects that include (1) extraction-well pumping in the chromium project area from extraction wells, (2) injection wells, and pumping of Los Alamos County's water-supply wells. The effects of water-supply pumping are very small compared to the local effect that may be caused by extraction and injection at project wells. Furthermore, a long-term water decline of about 0.5-1 ft/yr is observed in the regional water levels throughout the aquifer beneath the Pajarito Plateau. The decline might be caused by long-term changes in the aquifer recharge and discharge conditions.

Because of the long-term declines and pumping transients described above, the water-level data and the respective water-table maps are time dependent and representative of specific periods of time. This water-table map uses the average water-level data for February 2017. The averaged water levels are computed for the well screens near the water table in the chromium project area. Well screens deeper in the aquifer (>~75 ft) such as R-35a, R-44 Screen 2 and R-45 Screen 2 are not included in the analysis. The actual water levels applied in the contouring process are shown next to each well in Figure E3-1.

The process of water-table contouring is theoretically constrained by conformity rules: (1) the contour lines should be perpendicular to the flowpaths and (2) the length and the width of the flownet cells formed by the contour lines between two adjacent flowpaths should have the same ratios. These rules are theoretically valid only for the case of two-dimensional (lateral) groundwater flow in a uniform, isotropic aquifer with no recharge/discharge sources within flownet cells. Deviations from the conformity rules are caused by three-dimensional flow effects, aquifer heterogeneity and anisotropy as well as groundwater recharge/discharge wells/zones. This water table map, Figure E3-1, is contoured by attempting to satisfy the following goals simultaneously: (1) to match the water-level data at the monitoring wells, (2) to generally preserve flownet conformity, (3) to account for pumping effects, (4) to account for injection effects, and (5) to account for conceptual models of groundwater flow in the regional aquifer. The contouring is performed using a combination of manual and automated techniques; the automated contouring is done using the Minimum Curvature Surface method.

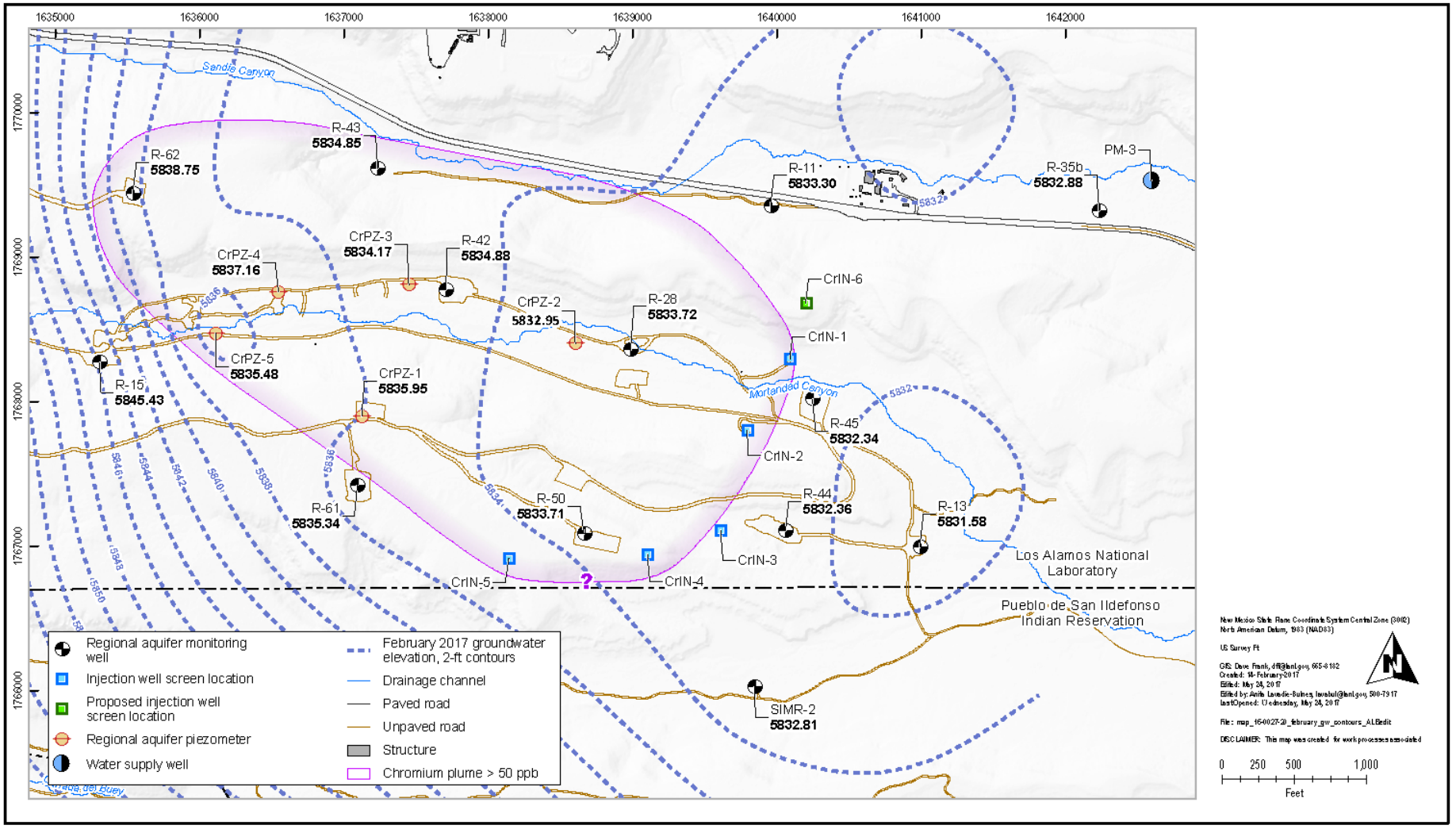
Long-term water-level data suggests that the water table is quite flat in the area of the chromium plume. The low gradient in this area may be related to: (1) the relatively high permeability of Puye Formation and Miocene pumiceous sediments, (2) anisotropy of the regional aquifer, (3) localized aquifer recharge along the canyons above the regional aquifer, (4) faults or other lineaments that affect regional-scale hydraulic conductivity, and (5) nearby water-supply

pumping. Note that observations of transients in the water levels observed at the monitoring wells within the plume (e.g., R-28, R-11, R-36, R-35b, R-42, R-43, and R-50) do not appear to be substantially affected by the water-supply pumping at the nearby production wells (PM-3, PM-5, PM-2, PM-4, and O-4) (LANL 2009, 107453).

CrEX-1 was pumped continuously for most of this reporting quarter. The exception is the period between February 7 and February 21. CrEX-3 was not pumped during the quarter except during sampling events. Injection wells CrIN-4 and CrIN-5 received water from CrEX-1 during the periods when CrEX-1 was pumping.

ENCLOSURE 3

Figure E3-1. Groundwater Elevation Contour Map – 2017 Quarter 1, DP-1835



ENCLOSURE 4

Groundwater Monitoring Wells
Analytical Results Summary Table –
2017 Quarter 1, DP-1835

EPC-DO: 17-166

LA-UR-17-23244

U1601822

Date: MAY 3 1 2017

Table E4-1
Groundwater Monitoring Wells Analytical Results Summary Table - 2017 Quarter 1, DP1835

Sample	Location ID	Sample Date	Parameter Name	Result	Report Units	Lab Qualifier	Detect Flag	Filtered	Lab Method	Report Detection Limit
CASA-17-129323	R-11	02-09-2017	Chloride	4.07	mg/L		Y	Y	EPA:300.0	0.2
CASA-17-129323	R-11	02-09-2017	Perchlorate	0.780	ug/L		Y	Y	SW-846:6850	0.2
CASA-17-129323	R-11	02-09-2017	Chromium	16.3	ug/L		Y	Y	SW-846:6020	10.0
CASA-17-129323	R-11	02-09-2017	Fluoride	0.345	mg/L		Y	Y	EPA:300.0	0.1
CASA-17-129323	R-11	02-09-2017	Nitrate-Nitrite as Nitrogen	5.81	mg/L		Y	Y	EPA:353.2	0.5
CASA-17-129323	R-11	02-09-2017	Sulfate	10.4	mg/L		Y	Y	EPA:300.0	0.4
CASA-17-129323	R-11	02-09-2017	Total Dissolved Solids	186	mg/L		Y	Y	EPA:160.1	14.3
CASA-17-129339	R-11	02-09-2017	Chloride	4.13	mg/L		Y	Y	EPA:300.0	0.2
CASA-17-129339	R-11	02-09-2017	Perchlorate	0.802	ug/L		Y	Y	SW-846:6850	0.2
CASA-17-129339	R-11	02-09-2017	Chromium	16.8	ug/L		Y	Y	SW-846:6020	10.0
CASA-17-129339	R-11	02-09-2017	Fluoride	0.343	mg/L		Y	Y	EPA:300.0	0.1
CASA-17-129339	R-11	02-09-2017	Nitrate-Nitrite as Nitrogen	6.22	mg/L		Y	Y	EPA:353.2	0.5
CASA-17-129339	R-11	02-09-2017	Sulfate	10.3	mg/L		Y	Y	EPA:300.0	0.4
CASA-17-129339	R-11	02-09-2017	Total Dissolved Solids	177	mg/L		Y	Y	EPA:160.1	14.3
CAMO-17-129291	R-13	02-10-2017	Chloride	2.49	mg/L		Y	Y	EPA:300.0	0.2
CAMO-17-129291	R-13	02-10-2017	Perchlorate	0.422	ug/L		Y	Y	SW-846:6850	0.2
CAMO-17-129291	R-13	02-10-2017	Chromium	4.34	ug/L	J	Y	Y	SW-846:6020	10.0
CAMO-17-129291	R-13	02-10-2017	Fluoride	0.233	mg/L		Y	Y	EPA:300.0	0.1
CAMO-17-129291	R-13	02-10-2017	Nitrate-Nitrite as Nitrogen	0.71	mg/L		Y	Y	EPA:353.2	0.05
CAMO-17-129291	R-13	02-10-2017	Sulfate	3.23	mg/L		Y	Y	EPA:300.0	0.4
CAMO-17-129291	R-13	02-10-2017	Total Dissolved Solids	133	mg/L		Y	Y	EPA:160.1	14.3
CASA-17-129340	R-43 S1	02-13-2017	Chloride	8.27	mg/L		Y	Y	EPA:300.0	0.2
CASA-17-129340	R-43 S1	02-13-2017	Perchlorate	0.949	ug/L		Y	Y	SW-846:6850	0.2
CASA-17-129340	R-43 S1	02-13-2017	Chromium	173	ug/L		Y	Y	SW-846:6020	10.0
CASA-17-129340	R-43 S1	02-13-2017	Fluoride	0.297	mg/L		Y	Y	EPA:300.0	0.1
CASA-17-129340	R-43 S1	02-13-2017	Nitrate-Nitrite as Nitrogen	5.74	mg/L		Y	Y	EPA:353.2	0.5

Table E4-1
Groundwater Monitoring Wells Analytical Results Summary Table - 2017 Quarter 1, DP1835

Sample	Location ID	Sample Date	Parameter Name	Result	Report Units	Lab Qualifier	Detect Flag	Filtered	Lab Method	Report Detection Limit
CASA-17-129340	R-43 S1	02-13-2017	Sulfate	16.4	mg/L		Y	Y	EPA:300.0	0.4
CASA-17-129340	R-43 S1	02-13-2017	Total Dissolved Solids	154	mg/L		Y	Y	EPA:160.1	14.3
CASA-17-129329	R-43 S2	02-13-2017	Chloride	5.51	mg/L		Y	Y	EPA:300.0	0.2
CASA-17-129329	R-43 S2	02-13-2017	Perchlorate	0.858	ug/L		Y	Y	SW-846:6850	0.2
CASA-17-129329	R-43 S2	02-13-2017	Chromium	14.7	ug/L		Y	Y	SW-846:6020	10.0
CASA-17-129329	R-43 S2	02-13-2017	Fluoride	0.187	mg/L		Y	Y	EPA:300.0	0.1
CASA-17-129329	R-43 S2	02-13-2017	Nitrate-Nitrite as Nitrogen	3.65	mg/L		Y	Y	EPA:353.2	0.5
CASA-17-129329	R-43 S2	02-13-2017	Sulfate	8.24	mg/L		Y	Y	EPA:300.0	0.4
CASA-17-129329	R-43 S2	02-13-2017	Total Dissolved Solids	161	mg/L		Y	Y	EPA:160.1	14.3
CAMO-17-129297	R-44 S1	02-10-2017	Chloride	2.23	mg/L		Y	Y	EPA:300.0	0.2
CAMO-17-129297	R-44 S1	02-10-2017	Perchlorate	0.455	ug/L		Y	Y	SW-846:6850	0.2
CAMO-17-129297	R-44 S1	02-10-2017	Chromium	13.5	ug/L		Y	Y	SW-846:6020	10.0
CAMO-17-129297	R-44 S1	02-10-2017	Fluoride	0.247	mg/L		Y	Y	EPA:300.0	0.1
CAMO-17-129297	R-44 S1	02-10-2017	Nitrate-Nitrite as Nitrogen	1.05	mg/L		Y	Y	EPA:353.2	0.05
CAMO-17-129297	R-44 S1	02-10-2017	Sulfate	3.15	mg/L		Y	Y	EPA:300.0	0.4
CAMO-17-129297	R-44 S1	02-10-2017	Total Dissolved Solids	129	mg/L		Y	Y	EPA:160.1	14.3
CAMO-17-129298	R-44 S2	02-17-2017	Chloride	2.14	mg/L		Y	Y	EPA:300.0	0.2
CAMO-17-129298	R-44 S2	02-17-2017	Perchlorate	0.346	ug/L		Y	Y	SW-846:6850	0.2
CAMO-17-129298	R-44 S2	02-17-2017	Chromium	8.19	ug/L	J	Y	Y	SW-846:6020	10.0
CAMO-17-129298	R-44 S2	02-17-2017	Fluoride	0.289	mg/L		Y	Y	EPA:300.0	0.1
CAMO-17-129298	R-44 S2	02-17-2017	Nitrate-Nitrite as Nitrogen	0.63	mg/L		Y	Y	EPA:353.2	0.05
CAMO-17-129298	R-44 S2	02-17-2017	Sulfate	2.58	mg/L		Y	Y	EPA:300.0	0.4
CAMO-17-129298	R-44 S2	02-17-2017	Total Dissolved Solids	180	mg/L		Y	Y	EPA:160.1	14.3
CAMO-17-129411	R-45 S1	02-07-2017	Chloride	5.3	mg/L		Y	Y	EPA:300.0	0.2
CAMO-17-129411	R-45 S1	02-07-2017	Perchlorate	0.603	ug/L		Y	Y	SW-846:6850	0.2
CAMO-17-129411	R-45 S1	02-07-2017	Chromium	43.4	ug/L		Y	Y	SW-846:6020	10.0

Table E4-1
Groundwater Monitoring Wells Analytical Results Summary Table - 2017 Quarter 1, DP1835

Sample	Location ID	Sample Date	Parameter Name	Result	Report Units	Lab Qualifier	Detect Flag	Filtered	Lab Method	Report Detection Limit
CAMO-17-129411	R-45 S1	02-07-2017	Fluoride	0.242	mg/L		Y	Y	EPA:300.0	0.1
CAMO-17-129411	R-45 S1	02-07-2017	Nitrate-Nitrite as Nitrogen	2.93	mg/L		Y	Y	EPA:353.2	0.25
CAMO-17-129411	R-45 S1	02-07-2017	Sulfate	8.15	mg/L		Y	Y	EPA:300.0	0.4
CAMO-17-129411	R-45 S1	02-07-2017	Total Dissolved Solids	163	mg/L		Y	Y	EPA:160.1	14.3
CAMO-17-129412	R-45 S2	02-07-2017	Chloride	4.0	mg/L		Y	Y	EPA:300.0	0.2
CAMO-17-129412	R-45 S2	02-07-2017	Perchlorate	0.435	ug/L		Y	Y	SW-846:6850	0.2
CAMO-17-129412	R-45 S2	02-07-2017	Chromium	19	ug/L		Y	Y	SW-846:6020	10.0
CAMO-17-129412	R-45 S2	02-07-2017	Fluoride	0.325	mg/L		Y	Y	EPA:300.0	0.1
CAMO-17-129412	R-45 S2	02-07-2017	Nitrate-Nitrite as Nitrogen	0.81	mg/L		Y	Y	EPA:353.2	0.05
CAMO-17-129412	R-45 S2	02-07-2017	Sulfate	4.64	mg/L		Y	Y	EPA:300.0	0.4
CAMO-17-129412	R-45 S2	02-07-2017	Total Dissolved Solids	159	mg/L		Y	Y	EPA:160.1	14.3
CAMO-17-129716	R-50 S1	01-18-2017	Chloride	8.36	mg/L		Y	Y	EPA:300.0	0.2
CAMO-17-129716	R-50 S1	01-18-2017	Perchlorate	0.563	ug/L		Y	Y	SW-846:6850	0.2
CAMO-17-129716	R-50 S1	01-18-2017	Chromium	121	ug/L		Y	Y	SW-846:6020	50.0
CAMO-17-129716	R-50 S1	01-18-2017	Fluoride	0.199	mg/L		Y	Y	EPA:300.0	0.1
CAMO-17-129716	R-50 S1	01-18-2017	Nitrate-Nitrite as Nitrogen	1.96	mg/L		Y	Y	EPA:353.2	0.25
CAMO-17-129716	R-50 S1	01-18-2017	Sulfate	12.0	mg/L		Y	Y	EPA:300.0	0.4
CAMO-17-129413	R-50 S1	02-21-2017	Chloride	8.64	mg/L		Y	Y	EPA:300.0	0.2
CAMO-17-129413	R-50 S1	02-21-2017	Perchlorate	0.599	ug/L		Y	Y	SW-846:6850	0.2
CAMO-17-129413	R-50 S1	02-21-2017	Chromium	133	ug/L		Y	Y	SW-846:6020	10.0
CAMO-17-129413	R-50 S1	02-21-2017	Fluoride	0.262	mg/L		Y	Y	EPA:300.0	0.1
CAMO-17-129413	R-50 S1	02-21-2017	Nitrate-Nitrite as Nitrogen	2.05	mg/L		Y	Y	EPA:353.2	0.5
CAMO-17-129413	R-50 S1	02-21-2017	Sulfate	12.0	mg/L		Y	Y	EPA:300.0	0.4
CAMO-17-129413	R-50 S1	02-21-2017	Total Dissolved Solids	126	mg/L		Y	Y	EPA:160.1	14.3
CAMO-17-131748	R-50 S1	03-22-2017	Chloride	9.03	mg/L		Y	N	EPA:300.0	0.2
CAMO-17-131748	R-50 S1	03-22-2017	Perchlorate	0.628	ug/L		Y	N	SW-846:6850	0.2

Table E4-1
Groundwater Monitoring Wells Analytical Results Summary Table - 2017 Quarter 1, DP1835

Sample	Location ID	Sample Date	Parameter Name	Result	Report Units	Lab Qualifier	Detect Flag	Filtered	Lab Method	Report Detection Limit
CAMO-17-131748	R-50 S1	03-22-2017	Fluoride	0.246	mg/L		Y	N	EPA:300.0	0.1
CAMO-17-131748	R-50 S1	03-22-2017	Nitrate-Nitrite as Nitrogen	2.57	mg/L		Y	N	EPA:353.2	0.25
CAMO-17-131748	R-50 S1	03-22-2017	Sulfate	12.8	mg/L		Y	N	EPA:300.0	0.4
CAMO-17-129717	R-50 S2	01-18-2017	Chloride	2.21	mg/L		Y	Y	EPA:300.0	0.2
CAMO-17-129717	R-50 S2	01-18-2017	Perchlorate	0.324	ug/L		Y	Y	SW-846:6850	0.2
CAMO-17-129717	R-50 S2	01-18-2017	Chromium	4.71	ug/L	J	Y	Y	SW-846:6020	10.0
CAMO-17-129717	R-50 S2	01-18-2017	Fluoride	0.255	mg/L		Y	Y	EPA:300.0	0.1
CAMO-17-129717	R-50 S2	01-18-2017	Nitrate-Nitrite as Nitrogen	0.49	mg/L		Y	Y	EPA:353.2	0.05
CAMO-17-129717	R-50 S2	01-18-2017	Sulfate	2.62	mg/L		Y	Y	EPA:300.0	0.4
CAMO-17-129302	R-50 S2	02-16-2017	Chloride	2.08	mg/L		Y	Y	EPA:300.0	0.2
CAMO-17-129302	R-50 S2	02-16-2017	Perchlorate	0.331	ug/L		Y	Y	SW-846:6850	0.2
CAMO-17-129302	R-50 S2	02-16-2017	Chromium	4.26	ug/L	J	Y	Y	SW-846:6020	10.0
CAMO-17-129302	R-50 S2	02-16-2017	Fluoride	0.326	mg/L		Y	Y	EPA:300.0	0.1
CAMO-17-129302	R-50 S2	02-16-2017	Nitrate-Nitrite as Nitrogen	0.46	mg/L		Y	Y	EPA:353.2	0.05
CAMO-17-129302	R-50 S2	02-16-2017	Sulfate	2.46	mg/L		Y	Y	EPA:300.0	0.4
CAMO-17-129302	R-50 S2	02-16-2017	Total Dissolved Solids	121	mg/L		Y	Y	EPA:160.1	14.3
CAMO-17-131749	R-50 S2	03-22-2017	Chloride	2.13	mg/L		Y	N	EPA:300.0	0.2
CAMO-17-131749	R-50 S2	03-22-2017	Perchlorate	0.34	ug/L		Y	N	SW-846:6850	0.2
CAMO-17-131749	R-50 S2	03-22-2017	Fluoride	0.314	mg/L		Y	N	EPA:300.0	0.1
CAMO-17-131749	R-50 S2	03-22-2017	Nitrate-Nitrite as Nitrogen	0.51	mg/L		Y	N	EPA:353.2	0.05
CAMO-17-131749	R-50 S2	03-22-2017	Sulfate	2.66	mg/L		Y	N	EPA:300.0	0.4
CAMO-17-129303	R-62	02-21-2017	Chloride	11.2	mg/L		Y	Y	EPA:300.0	0.4
CAMO-17-129303	R-62	02-21-2017	Perchlorate	0.813	ug/L		Y	Y	SW-846:6850	0.2
CAMO-17-129303	R-62	02-21-2017	Chromium	217	ug/L		Y	Y	SW-846:6020	10.0
CAMO-17-129303	R-62	02-21-2017	Fluoride	0.15	mg/L		Y	Y	EPA:300.0	0.1
CAMO-17-129303	R-62	02-21-2017	Nitrate-Nitrite as Nitrogen	1.64	mg/L		Y	Y	EPA:353.2	0.25

Table E4-1
Groundwater Monitoring Wells Analytical Results Summary Table - 2017 Quarter 1, DP1835

Sample	Location ID	Sample Date	Parameter Name	Result	Report Units	Lab Qualifier	Detect Flag	Filtered	Lab Method	Report Detection Limit
CAMO-17-129303	R-62	02-21-2017	Sulfate	20.1	mg/L		Y	Y	EPA:300.0	0.8
CAMO-17-129303	R-62	02-21-2017	Total Dissolved Solids	144	mg/L		Y	Y	EPA:160.1	14.3
CAMO-17-127261	SIMR-2[2]	11-21-2016	Chloride	2.17	mg/L		Y	Y	EPA:300.0	0.2
CAMO-17-127261	SIMR-2[2]	11-21-2016	Perchlorate	0.417	ug/L		Y	Y	SW-846:6850	0.2
CAMO-17-127261	SIMR-2[2]	11-21-2016	Chromium	4.89	ug/L	J	Y	Y	SW-846:6020	10.0
CAMO-17-127261	SIMR-2[2]	11-21-2016	Fluoride	0.164	mg/L		Y	Y	EPA:300.0	0.1
CAMO-17-127261	SIMR-2[2]	11-21-2016	Nitrate-Nitrite as Nitrogen	0.67	mg/L		Y	Y	EPA:353.2	0.05
CAMO-17-127261	SIMR-2[2]	11-21-2016	Sulfate	2.81	mg/L		Y	Y	EPA:300.0	0.4
CAMO-17-127261	SIMR-2[2]	11-21-2016	Total Dissolved Solids	160	mg/L		Y	Y	EPA:160.1	14.3
-	SIMR-2[1]	-	Chloride	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Perchlorate	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Chromium	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Fluoride	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Nitrate-Nitrite as Nitrogen	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Sulfate	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Total Dissolved Solids	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Chloride	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Perchlorate	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Chromium	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Fluoride	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Nitrate-Nitrite as Nitrogen	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Sulfate	-	-	-	-	-	-	-
-	SIMR-2[1]	-	Total Dissolved Solids	-	-	-	-	-	-	-

Notes:

Table E4-1
Groundwater Monitoring Wells Analytical Results Summary Table - 2017 Quarter 1, DP1835

Sample	Location ID	Sample Date	Parameter Name	Result	Report Units	Lab Qualifier	Detect Flag	Filtered	Lab Method	Report Detection Limit

[1] Data has been collected but is unavailable at the time of this report's preparation in accordance with the Memorandum of Agreement between Pueblo de San Ildefonso and DOE/LANS. This data will be presented in the next quarterly report.

[2] Fourth Quarter 2016 SIMR-2 data reported here in accordance with DP-1835 Fourth Quarter 2016 Report (EPC-DOL 17-066). Data was unavailable at the time of that report's preparation in accordance with the Memorandum of Agreement between Pueblo de San Ildefonso and DOE/LANS.

J - in the lab qualifier comment means the analyte is classified as estimated.

Y - in the detect flag column means the analyte was detected.

Y - in the filtered column means the sample was filtered.

ENCLOSURE 5

Groundwater Extraction and Treated Groundwater
Injection Summary Tables –
2017 Quarter 1, DP-1835

EPC-DO: 17-166

LA-UR-17-23244

U1601822

Date: MAY 3 1 2017

Table E5-1
Daily Extraction Summary Table -
2017 Quarter 1, DP1835

Date	CrEX-1 (gal)	CrEX-2 (gal)	CrEX-3 (gal)
1/5/2017	631	N/A	N/A
1/6/2017	79,283	N/A	N/A
1/7/2017	65,282	N/A	N/A
1/8/2017	77,984	N/A	N/A
1/9/2017	102,093	N/A	N/A
1/10/2017	82,847	N/A	N/A
1/11/2017	80,575	N/A	N/A
1/12/2017	86,958	N/A	N/A
1/13/2017	63,222	N/A	N/A
1/14/2017	80,791	N/A	N/A
1/15/2017	84,536	N/A	N/A
1/16/2017	96,849	N/A	N/A
1/17/2017	66,536	N/A	N/A
1/18/2017	37,105	N/A	N/A
1/19/2017	67,168	N/A	N/A
1/20/2017	90,740	N/A	N/A
1/21/2017	91,621	N/A	N/A
1/22/2017	81,693	N/A	N/A
1/23/2017	89,919	N/A	N/A
1/24/2017	76,221	N/A	N/A
1/25/2017	104,107	N/A	N/A
1/26/2017	96,786	N/A	N/A
1/27/2017	78,352	N/A	N/A
1/28/2017	98,347	N/A	N/A
1/29/2017	91,137	N/A	N/A
1/30/2017	77,861	N/A	N/A
1/31/2017	86,685	N/A	N/A
2/1/2017	79,876	N/A	N/A
2/2/2017	79,753	N/A	N/A
2/3/2017	78,888	N/A	N/A
2/4/2017	61,706	N/A	N/A
2/5/2017	91,742	N/A	N/A
2/6/2017	82,488	N/A	N/A
2/7/2017	59,900	N/A	N/A
2/21/2017	14,378	N/A	N/A
2/22/2017	88,261	N/A	N/A
2/23/2017	102,028	N/A	N/A
2/24/2017	84,391	N/A	N/A
2/25/2017	122,976	N/A	N/A
2/26/2017	97,923	N/A	N/A
2/27/2017	92,983	N/A	N/A

Table E5-1
Daily Extraction Summary Table -
2017 Quarter 1, DP1835

Date	CrEX-1 (gal)	CrEX-2 (gal)	CrEX-3 (gal)
2/28/2017	76,994	N/A	N/A
3/1/2017	116,936	N/A	N/A
3/2/2017	105,696	N/A	N/A
3/3/2017	81,350	N/A	N/A
3/4/2017	92,278	N/A	N/A
3/5/2017	112,295	N/A	N/A
3/6/2017	105,450	N/A	N/A
3/7/2017	99,317	N/A	N/A
3/8/2017	94,567	N/A	N/A
3/9/2017	89,444	N/A	N/A
3/10/2017	64,135	N/A	N/A
3/11/2017	87,488	N/A	N/A
3/12/2017	120,751	N/A	N/A
3/13/2017	72,969	N/A	N/A
3/14/2017	80,527	N/A	N/A
3/15/2017	78,811	N/A	N/A
3/16/2017	78,811	N/A	N/A
3/17/2017	66,450	N/A	N/A
3/18/2017	70,641	N/A	N/A
3/19/2017	92,703	N/A	N/A
3/20/2017	82,568	N/A	N/A
3/21/2017	106,459	N/A	N/A
3/22/2017	76,021	N/A	N/A
3/23/2017	78,510	N/A	N/A
3/24/2017	70,415	N/A	N/A
3/25/2017	96,372	N/A	N/A
3/26/2017	88,374	N/A	N/A
3/27/2017	90,590	N/A	N/A
3/28/2017	80,114	N/A	N/A
3/29/2017	80,059	N/A	N/A
3/30/2017	81,930	N/A	N/A
3/31/2017	65,242	N/A	N/A

Notes:
N/A - If groundwater was extracted on this day from this location it was not treated and injected through the UIC wells.

Table E5-2
Daily Injection Summary Table -
2017 Quarter 1, DP1835

Date	CrIN-1[1] (gal)	CrIN-2[1] (gal)	CrIN-3[1] (gal)	CrIN-4 (gal)	CrIN-5 (gal)	CrIN-6[1] (gal)
1/5/2017	0	0	0	1,641	1,330	0
1/6/2017	0	0	0	35,671	40,734	0
1/7/2017	0	0	0	30,434	35,141	0
1/8/2017	0	0	0	36,071	42,005	0
1/9/2017	0	0	0	47,308	54,694	0
1/10/2017	0	0	0	39,231	43,837	0
1/11/2017	0	0	0	40,328	41,288	0
1/12/2017	0	0	0	33,850	36,338	0
1/13/2017	0	0	0	39,562	39,905	0
1/14/2017	0	0	0	39,635	40,668	0
1/15/2017	0	0	0	41,464	43,518	0
1/16/2017	0	0	0	45,678	51,672	0
1/17/2017	0	0	0	30,653	35,731	0
1/18/2017	0	0	0	20,914	16,627	0
1/19/2017	0	0	0	43,893	29,571	0
1/20/2017	0	0	0	41,154	39,287	0
1/21/2017	0	0	0	68,656	22,833	0
1/22/2017	0	0	0	20,468	60,553	0
1/23/2017	0	0	0	46,844	43,718	0
1/24/2017	0	0	0	38,620	36,499	0
1/25/2017	0	0	0	53,693	50,891	0
1/26/2017	0	0	0	49,426	44,718	0
1/27/2017	0	0	0	37,441	40,249	0
1/28/2017	0	0	0	46,057	49,409	0
1/29/2017	0	0	0	42,557	46,167	0
1/30/2017	0	0	0	36,772	39,895	0
1/31/2017	0	0	0	43,052	45,005	0
2/1/2017	0	0	0	38,575	45,932	0
2/2/2017	0	0	0	39,932	40,141	0
2/3/2017	0	0	0	39,291	42,743	0
2/4/2017	0	0	0	30,877	33,019	0
2/5/2017	0	0	0	45,776	49,988	0
2/6/2017	0	0	0	41,614	44,876	0
2/7/2017	0	0	0	29,520	31,426	0
2/21/2017	0	0	0	7,236	5,081	0
2/22/2017	0	0	0	45,328	43,218	0
2/23/2017	0	0	0	49,678	41,635	0
2/24/2017	0	0	0	39,150	41,889	0
2/25/2017	0	0	0	53,922	61,967	0
2/26/2017	0	0	0	44,216	48,599	0
2/27/2017	0	0	0	44,169	46,014	0

Table E5-2
Daily Injection Summary Table -
2017 Quarter 1, DP1835

Date	CrIN-1[1] (gal)	CrIN-2[1] (gal)	CrIN-3[1] (gal)	CrIN-4 (gal)	CrIN-5 (gal)	CrIN-6[1] (gal)
2/28/2017	0	0	0	35,057	38,119	0
3/1/2017	0	0	0	58,018	56,854	0
3/2/2017	0	0	0	40,819	37,625	0
3/3/2017	0	0	0	61,524	40,275	0
3/4/2017	0	0	0	44,140	36,737	0
3/5/2017	0	0	0	56,255	46,001	0
3/6/2017	0	0	0	52,730	42,119	0
3/7/2017	0	0	0	50,577	40,728	0
3/8/2017	0	0	0	45,982	37,430	0
3/9/2017	0	0	0	40,798	47,071	0
3/10/2017	0	0	0	57,813	37,153	0
3/11/2017	0	0	0	44,053	65,673	0
3/12/2017	0	0	0	44,473	66,246	0
3/13/2017	0	0	0	50,706	36,215	0
3/14/2017	0	0	0	41,698	41,487	0
3/15/2017	0	0	0	49,237	35,784	0
3/16/2017	0	0	0	58,710	41,350	0
3/17/2017	0	0	0	32,348	32,178	0
3/18/2017	0	0	0	35,473	35,206	0
3/19/2017	0	0	0	46,076	45,966	0
3/20/2017	0	0	0	41,050	61,254	0
3/21/2017	0	0	0	42,271	63,062	0
3/22/2017	0	0	0	37,779	56,425	0
3/23/2017	0	0	0	38,982	58,156	0
3/24/2017	0	0	0	34,039	50,905	0
3/25/2017	0	0	0	73,325	48,966	0
3/26/2017	0	0	0	59,297	39,409	0
3/27/2017	0	0	0	53,659	35,526	0
3/28/2017	0	0	0	54,603	39,789	0
3/29/2017	0	0	0	55,752	42,838	0
3/30/2017	0	0	0	40,848	49,203	0
3/31/2017	0	0	0	32,536	60,551	0

Notes:

[1] Treated groundwater not injected into UIC well during the reporting period.

ENCLOSURE 6

Facility Layout Map –
2017 Quarter 1, DP-1835

EPC-DO: 17-166

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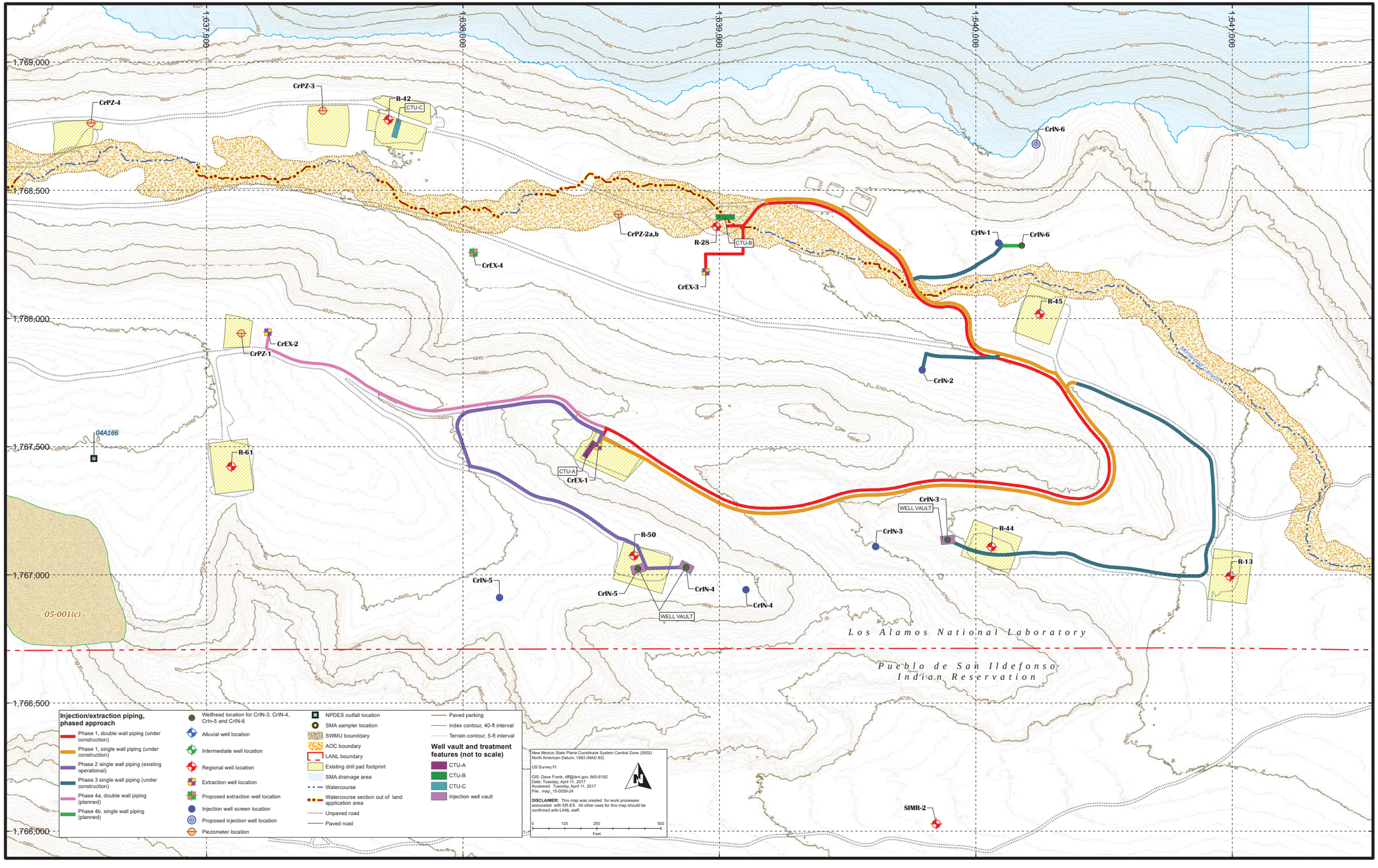
Date: MAY 3 1 2017



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