

Semi-Annual Plume Status Report

South Archibald Plume October 2026

CONTAMINANTS

The primary contaminant is trichloroethene (TCE). The California maximum contaminant level (MCL) for TCE is 5 micrograms per liter (µg/l). The maximum TCE concentration detected in a groundwater sample collected from wells within the plume during the last five years (July 2021 to June 2026) is 71 µg/l.

LOCATION

The South Archibald TCE plume is located in the southern Chino Basin within the City of Ontario. Exhibit 1 shows the spatial extent of the plume where detectable TCE concentrations are equal to or greater than 0.5 µg/l, as delineated by the Chino Basin Watermaster (Watermaster) for the *2024 State of the Basin Report*.¹ This extent is based on the five-year maximum TCE concentration measured from July 2019 to June 2024. The TCE plume is approximately 23,200 feet long, extending southward from State Route 60 to roughly Kimball Avenue, and is about 14,300 feet wide extending from Grove Avenue to Turner Avenue. Exhibit 1 also shows the complete extent of the plume and the extent of the plume with concentrations greater than 5 µg/l as delineated by the responsible parties during the most recent sampling event in 2025.

Regulatory Orders

- 2005 Draft Cleanup and Abatement Orders (CAOs) —Included six Draft CAOs that were issued to the following parties in 2005: Aerojet-General Corporation, The Boeing Company, Northrop Grumman Corporation, Lockheed Martin Corporation, General Electric Company, and United States Department of Defense.
- Draft CAO R8-2012-00XX for the City of Ontario, City of Upland, and Inland Empire Utilities Agency (IEUA), Former Ontario-Upland Sewage Treatment Plant (Regional Recycling Plant No. 1), City of Ontario, San Bernardino County — Draft CAO that was issued jointly to the City of Ontario, City of Upland, and IEUA in 2012.
- Stipulated Settlement and CAO No. R8-2016-0016 for the City of Ontario, the City of Upland, the IEUA, Aerojet Rocketdyne, Inc.², The Boeing Company, General Electric Company, Lockheed Martin Corporation and the United States of America, Former Ontario-Upland Sewage Treatment Plant (Regional Recycling Plant No. 1) City of Ontario— Final CAO that was issued to all parties previously issued Draft CAOs in 2005 and 2012, excluding Northrop Grumman.

¹ West Yost. (2025). *Optimum Basin Management Program – 2024 State of the Basin Report*. Prepared for the Chino Basin Watermaster. September 2025.

² Formerly known as Aerojet-General Corporation.

REGULATORY AND MONITORING HISTORY

In the mid-1980s, as part of its work associated with the Chino Basin Storage Program, the Metropolitan Water District of Southern California collected water quality samples that indicated that TCE was present in private wells in the southern Chino Basin. The Santa Ana Regional Water Quality Control Board (Santa Ana Water Board) confirmed these findings through subsequent rounds of sampling.

In 2005, the Santa Ana Water Board issued Draft CAOs to six parties who were tenants on the Ontario Airport property. On a voluntary basis, four of these parties — Aerojet-General Corporation, The Boeing Company, General Electric Company, and Lockheed Martin Corporation, collectively the ABGL parties, worked with the U.S. Department of Defense to investigate the source of contamination. As part of the investigation, the ABGL parties collected water quality samples from private wells and residential taps, as well as from four triple-nested monitoring wells (ABGL wells) constructed in the northern portion of the plume. Private residences in the area where TCE concentrations in groundwater were above the MCL were provided alternative water systems.

In 2008, Santa Ana Water Board staff conducted research to identify the likely source of TCE contamination. Based on their findings, the Santa Ana Water Board staff identified discharges of wastewater to the RP-1 treatment plant and associated disposal areas as potential sources of TCE. Several industries, including previously identified tenants of the Ontario Airport property, were found to have likely used TCE solvents before and during the early 1970's and discharged waste into the sewage system of the Cities of Ontario and Upland, which were tributary to the RP-1 treatment plant and disposal areas. In 2012, the Santa Ana Water Board issued an additional Draft CAO jointly to the City of Ontario, City of Upland, and IEUA as the previous and current operators of the RP-1 treatment plant and disposal area (collectively the RP-1 parties).

From 2007 through 2014, under the oversight of the Santa Ana Water Board, the ABGL parties and the RP-1 parties individually and jointly conducted biennial sampling at private residential wells and taps in areas where groundwater was potentially contaminated with TCE. By 2014, the ABGL parties had sampled all private wells and taps within the plume area at least once and the data were documented in a report published in November 2014.³ Both the ABGL and RP-1 parties provided potable water to residences, either through water tank systems or by bottled water service, in areas where samples had contained TCE concentrations equal to or above 80 percent of the MCL (e.g., equal to or greater than 4.0 µg/l).

In July 2015, the RP-1 parties completed a draft feasibility study report for the South Archibald plume (Feasibility Study).⁴ The Feasibility Study established cleanup objectives for domestic water supply and plume remediation, and evaluated remediation alternatives to achieve these objectives. In August 2015, the RP-1 parties prepared a Draft Remedial Action Plan (RAP) presenting the preferred alternatives for plume remediation and domestic water supply.⁵ A public review period followed and in September 2015, two community meetings were held to educate the public about the plume, the Feasibility Study, and the RAP, and to solicit comments on these reports. In November 2015, the RP-1 parties completed the revised

³ Erler & Kalinowski, Inc. (2014). *Supplemental Data Report Trichloroethene Plume Central Chino Basin*. Prepared for Aerojet Rocketdyne, Boeing, General Electric, and Lockheed Martin. November 19, 2014.

⁴ Dudek. (2015). *Draft Feasibility Study Report South Archibald Plume, Ontario, California*. Prepared for City of Ontario, City of Upland, and Inland Empire Utilities Agency. July 2015.

⁵ Dudek. (2015). *Draft Remedial Action Plan South Archibald Plume, Ontario, California*. Prepared for City of Ontario, City of Upland, and Inland Empire Utilities Agency. August 2015.

Draft Feasibility Study and RAP, which addressed input from the public, ABGL, and other parties and included responses to comments.^{6,7}

In September 2016, the Santa Ana Water Board issued the Final Stipulated Settlement and CAO R8-2016-0016 (Stipulated CAO) jointly to the RP-1 parties and the ABGL parties. The Stipulated CAO was adopted by all parties in November 2016, thus approving the preferred plume remediation and domestic water supply alternatives identified in the RAP. The parties also reached a settlement agreement that aligned with the Stipulated CAO and authorized funding to initiate implementation of the plume remediation alternative.

In July 2021, the RP-1 parties collaborated with the Santa Ana Water Board and Watermaster to distribute a Community Fact Sheet to residences overlying the plume. The Fact Sheet addressed the health and environmental impacts of TCE and other potential contaminants such as per- and polyfluoroalkyl substances (PFAS), as well as their presence in the plume area, and available sampling resources.⁸

REMEDIAL ACTION

Plume Remediation

The plume remediation alternative identified in the Feasibility Study, RAP, and Stipulated CAO involves utilizing both existing and newly constructed Chino Basin Desalter Authority (CDA) wells and treatment facilities to pump and treat TCE and other volatile organic compounds (VOCs) from the South Archibald plume. To do so, the RP-1 parties and the CDA developed a Joint Facility Development Agreement to implement the Chino Basin Improvement and Groundwater Clean-Up Project (Project) to modify the CDA facilities to treat TCE and other VOCs while continuing to use existing facilities (i.e., reverse osmosis membranes) to treat total dissolved solids (TDS) and nitrate. The Project consisted of: 1) the construction and operation of three new CDA wells (II-10, II-11, and II-12) in the vicinity of the plume; 2) the construction of a dedicated pipeline to convey groundwater produced from these three new wells to the Chino-II Desalter treatment facility; and 3) the replacement of existing decarbonators at the Chino-II Desalter facility with an air stripping system to remove TCE and other VOCs from the water treated through the reverse osmosis (RO) trains. Additionally, a new pipeline was constructed to connect existing CDA Well I-11 to the pipeline conveying groundwater produced at the new CDA wells to the Chino-II Desalter facility.

Portions of the Project construction were funded by Proposition 1 Grant Agreement No. D1712507 (Prop 1 Grant Agreement) and Title XVI grants from the United States Bureau of Reclamation. Construction of CDA wells II-10 and II-11 was completed in September 2015 and the equipping of these wells was completed in 2018. Pumping initiated at wells II-11 and II-10 in July and September 2018, respectively. An onsite monitoring well (II-MW-3) near the proposed location of Well II-12 was constructed in 2019 and the construction of Well II-12 was completed in November 2020. The CDA finished equipping Well II-12 in July 2021, and pumping began on August 24, 2021.

⁶ Dudek. (2015). *Draft Feasibility Study Report South Archibald Plume, Ontario, California*. Prepared for City of Ontario, City of Upland, and Inland Empire Utilities Agency. November 2015.

⁷ Dudek. (2015). *Draft Remedial Action Plan South Archibald Plume, Ontario, California*. Prepared for City of Ontario, City of Upland, and Inland Empire Utilities Agency. November 2015.

⁸ Santa Ana Water Board. (2021). Community Fact Sheet.

https://documents.geotracker.waterboards.ca.gov/regulators/deliverable_documents/9334058463/20210407_CommunityFactSheet_SouthArchibaldPrivateWells-Short_ADA_Final.pdf

Domestic Water Supply

The domestic water supply alternative identified in the Feasibility Study and RAP includes the installation of tank systems for some residences, where potable water is delivered from the City of Ontario, and the installation of a pipeline to connect other residences directly to the City of Ontario potable water system. Pursuant to the Stipulated CAO, the Cities of Ontario and Upland assumed the responsibility for implementing the domestic water supply alternative and in February 2017, the Cities submitted a *Domestic Water Supply Work Plan* (2017 Work Plan) to the Santa Ana Water Board, outlining the approach to continue providing alternative water supplies to affected residences that had been provided potable water, either through water tank systems or by bottled water service since 2014.⁹ The Santa Ana Water Board approved the 2017 Work Plan on March 3, 2017.¹⁰ At that time, 32 residences were using previously installed tank systems and 21 residences were receiving bottled water.

The alternative water supply plan options include: 1) the continued use or installation of a tank system; 2) connection to an existing City of Ontario water main; 3) connection to a future City of Ontario water main; or 4) the continuation of bottled water service. In accordance with the schedule in the Stipulated CAO and the work plan, tank systems were to be installed within six months of resident consent, connections to Ontario's existing municipal water system were to be constructed within three months of resident consent, and construction and connection to a new water main was to occur within 18 months of resident consent. Additionally, bottled water would be supplied to any newly affected residents immediately upon the determination of the presence of TCE in their water supply at concentrations greater than 4 µg/l, or 80 percent of the MCL.

MONITORING AND REPORTING

Pursuant to the Stipulated CAO and the 2017 Work Plan, the Cities of Ontario and Upland collect annual groundwater quality samples from approximately 50-60 private wells and taps at about 45 residential and agricultural locations within the plume area. The purpose of this sampling is to: 1) evaluate the lateral extent of the plume in accordance with the Stipulated CAO; 2) identify locations where TCE concentrations in private water supply wells exceed the MCL; 3) identify locations where TCE concentrations that were previously above the MCL are now below the MCL; and 4) identify residences that may qualify for participation in the City of Ontario's alternative water supply program. Since 2017, the Cities of Ontario and Upland have conducted nine rounds of sampling. The results are documented in annual groundwater monitoring reports that are submitted to the Santa Ana Water Board and available to view on the State Water Resources Control Board's GeoTracker online portal.¹¹

The IEUA and CDA also conduct groundwater quality sampling under a separate monitoring and reporting plan developed in 2021 pursuant to the Prop 1 Grant Agreement for the implementation of the Chino Basin Improvement and Groundwater Clean-Up Project (Prop 1 Monitoring Plan¹²). As part of the monitoring program, and at the request of the Santa Ana Water Board and California State Water Resources Control Board (State Board), in 2021 CDA constructed two new monitoring wells to monitor

⁹ Dudek. (2017). *Domestic Water Supply Work Plan South Archibald Plume, Ontario, California*. Prepared for the City of Ontario, City of Upland. February 2017.

¹⁰ Santa Ana Water Board. (2017). *Domestic Water Supply Workplan – South Archibald Trichloroethylene Plume, Ontario, California*. Letter to the City of Ontario from Kurt Berchtold. March 3, 2017.

¹¹ https://geotracker.waterboards.ca.gov/profile_report?global_id=T10000004658

¹² Hazen and Sawyer. (2021). *Monitoring Plan – Chino Basin Improvement and Groundwater Clean-up Project*. Prepared for CDA and IEUA. January 2021.

key locations in the plume: 1) multi-nested Well II-MW-5 (a, b, c, d) located within the area of the highest concentration of TCE within the plume and 2) Well II-MW-4 located just upgradient of CDA Well II-12.^{13,14} In November and December 2025, subsequent to the adoption of the Prop 1 Monitoring Plan, CDA constructed two additional nested monitoring wells (II-MW-6 and II-MW-7) east and southeast of the plume to monitor plume migration. During well construction, groundwater samples were collected at both wells from each of the four monitoring zones (a through d) and TCE was only detected in one zone at II-MW-7 below the MCL, confirming that the plume has not migrated east and southeast to these locations. Well II-MW-7 will also provide future performance monitoring for Well II-12 by tracking its effectiveness in removing the core of the plume and whether pumping is causing downward migration of contaminants to deeper zones. The locations of monitoring wells II-MW-4, II-MW-5, II-MW-6, and II-MW-7 are shown in Exhibit 1.

The Prop 1 Monitoring Plan includes monthly, quarterly, annual, or biennial sampling for TCE, nitrate, and TDS at 20 wells located within and near the plume, including 13 CDA production wells, 4 CDA monitoring wells, and 3 nearby cooperating agency wells.

In addition, monitoring well II-MW-5, which was located at the predicted point of highest TCE concentration in the plume was sampled for four other constituents— 1,2,3-trichloropropane (1,2,3-TCP), 1,4-dioxane, perchlorate, and hexavalent chromium -- once upon construction completion (March 2021) and again the following year. Since then, voluntary sampling for these additional constituents has been conducted at II-MW-5 on three separate occasions. Monitoring wells II-MW-6 and II-MW-7 were also sampled for the four additional constituents at construction and will be sampled again 1 year post-construction.

Groundwater data from all the monitoring events are uploaded to the State Board's GeoTracker website along with quarterly and annual Operational Reports, as required by the Prop 1 Monitoring Plan¹⁵. After five years of operation, Operational Reports will only be required on an annual basis.

In addition to the monitoring conducted by the CDA and the RP-1 Parties, Watermaster routinely collects groundwater samples from private wells in the plume area. Watermaster uses data from its own monitoring efforts, along with data collected by the CDA, IEUA, and the City of Ontario, to delineate the South Archibald TCE plume as part of the biennial Chino Basin State of the Basin Report.

RECENT ACTIVITY

In accordance with the Stipulated CAO, the most recent annual sampling event conducted by the Cities of Ontario and Upland at private wells and taps within the plume area took place from October to November 2025. The sampling was conducted pursuant to the 2025 Sampling Workplan, which was submitted by the City of Ontario in June 2025 and approved by the Santa Ana Water Board on August 22, 2025.¹⁶ During the 2025 sampling event, a total of 47 samples were collected at 35 residential, commercial, and

¹³ CDA Board of Directors July 2020 Meeting Agenda and Minutes.

<https://www.chinodesalter.org/AgendaCenter/ViewFile/Agenda/07022020-309>

¹⁴ Santa Ana Water Board. (2020). *Comments on Responses to Comments on Monitoring and Reporting Plan and Request for Additional Monitoring for Inland Empire Utilities Agency and Chino Basin Desalter Authority Clean-Up Project (Grant Agreement No. D1712507)*. April 24, 2020.

¹⁵ The Prop 1 Monitoring Plan requires Operational Reports to be submitted quarterly starting on January 31, 2026 following the completion of the Prop 1 Grant Agreement term.

¹⁶ EEC Environmental. 2025. Workplan Private Water Supply Well Sampling. Prepared for City of Ontario. June 30, 2025.

agricultural locations. Additionally, the CDA collected samples from ten CDA pumping and monitoring wells located within and adjacent to the plume. The results of these sampling efforts are documented in the *2025 Annual Groundwater Monitoring Report*¹⁷ and summarized below:

- TCE was detected in 17 samples at residential, commercial, and agricultural locations, ranging from 0.31 µg/l to 46 µg/l and exceeded the MCL of 5 µg/l in six of these samples.
- TCE was also detected at nine CDA production and monitoring wells sampled throughout 2025.
 - TCE was detected in all groundwater samples from CDA production wells I-10, I-11, II-11, and II-12, but only exceeded the MCL of 5 µg/l in CDA Well II-12.
 - The concentration of TCE ranged from 1.2 µg/l to 50 µg/l in groundwater samples collected at various screen intervals from Well II-MW-5 and from 13 µg/l to 40 µg/l in samples collected from Well II-MW-4.
- TCE concentrations in fourteen residential locations along the western edge of the plume continue to decline over time. TCE concentrations at CDA Well II-12 and three of the monitoring well intervals in CDA Well II-MW-5 also had a statistically significant decreasing trend.
- TCE concentrations remain the highest in the north-central part of the plume with increasing concentrations observed in residential locations and at CDA Well II-MW-4 in the central part of the plume just north of CDA Well II-12, likely due to groundwater pumping at Well II-12.
- TCE concentrations are also increasing at CDA Wells I-8 and I-11 at the southern extent of the plume. This likely reflects concentrations of TCE in groundwater south of CDA Well II-12 prior to well construction.
- Two residential locations were identified as suitable candidates for removal from the alternative water supply program.

On February 17, 2026, the Santa Ana Water Board reviewed the *2025 Annual Groundwater Monitoring Report* and had no comments.

As of the end of 2025, 19 affected residences were being supplied water by 13 tank systems. Of these, approximately ten systems are located at the western edge of the plume, where TCE concentrations have remained stable or declined over time. The City of Ontario will continue to monitor TCE at all potentially affected residences and provide residences that have TCE concentrations that exceed 80 percent of the MCL with an alternative water supply. The City has submitted the work plan for the next annual sampling event in the fall of 2026, which includes 19 candidate sample locations requested by the Santa Ana Water Board to further define the plume in the east-northeast areas.¹⁸ On September 17, 2026, the Santa Ana Water Board approved and provided comments on the work plan. A report of the findings will be submitted to the Santa Ana Water Board by December 31, 2026.

The Prop 1 Grant Agreement term ended in January 2026 with the completion of CDA facility construction, marking the start of the Operational Phase of the Project and the associated, required reporting. The first Operational Report was submitted to the Santa Ana Water Board in June 2026, covering the first quarter

¹⁷ Dudek. (2025). *Annual Groundwater Monitoring Report South Archibald TCE Plume – Ontario, California*. Prepared for the City of Ontario and City of Upland. December 2025.

¹⁸ EEC Environmental. 2026. *Workplan Private Water Supply Well Sampling*. Prepared for City of Ontario. July 15, 2026.

of the operational period from January to March 2026 and the second quarter Operational Report was submitted in August 2026.^{19,20} Results from the second quarter report show that TCE concentrations declined in Well II-12 from 2021 to 2023 and have since stabilized between 20 and 30 µg/l. Additionally, since operation began in August 2021, Well II-12 has removed 1,118 pounds of TCE.

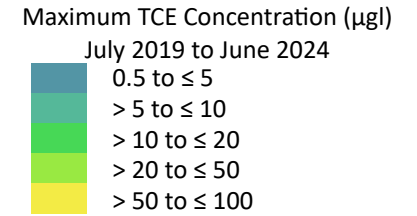
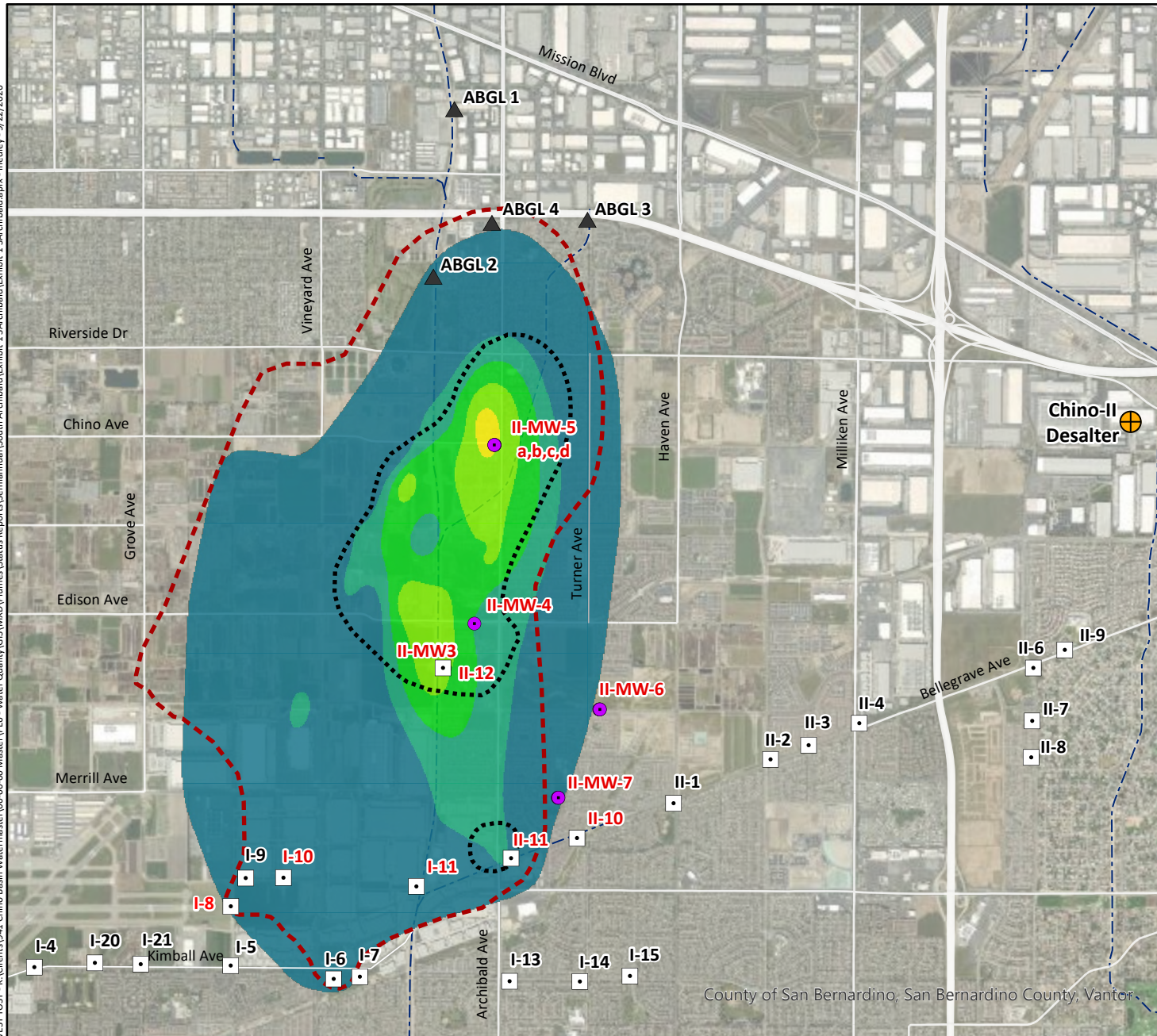
In August 2026, in compliance with the CAO, the Cities of Ontario and Upland, and the IEUA submitted a draft Five-Year Remedy Review Report to the Santa Ana Water Board to evaluate the effectiveness of the activities performed pursuant to the RAP.²¹ The report concludes that the selected remedial action is on track to achieve the long-term remediation goals for a reduction in contaminant concentration and plume size. Since operation began, Well II-12 has removed approximately 1,072 pounds of TCE and it is predicted that continued operation of the pump-and-treat system will continue to reduce the overall size of the plume and remove TCE from the Area of Attainment. Data from wells along the southern end of the plume show that the hydraulic barrier produced from the well field has successfully contained the plume in the Area of Attainment and data from wells to the west of the plume indicate that the wells have successfully prevented the plume from westward migration. Future data from the two new monitoring wells (II-MW-6 and II-MW-7) will indicate whether the plume is migrating eastward and how effective Well II-12 continues to be in removing the core of the plume, while also monitoring for potential downward migration to lower parts of the aquifer.

¹⁹ Inland Empire Utilities Agency. (2026). Groundwater Treatment and Remediation Grant Program Quarterly Operational Report – Year 1, Quarter 1. June 15, 2026.

²⁰ Inland Empire Utilities Agency. (2026). Groundwater Treatment and Remediation Grant Program Quarterly Operational Report – Year 1, Quarter 2. August 13, 2026.

²¹ Hazen and Sawyer. (2026). Five-Year Remedy Review Report – Mitigation of TCE Impacts to Groundwater South Archibald Plume, Ontario, CA. Prepared for City of Ontario, City of Upland, and Inland Empire Utilities Agency. August 26, 2026.

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(Delineated by Chino Basin Watermaster in the 2024 State of the Basin Report)

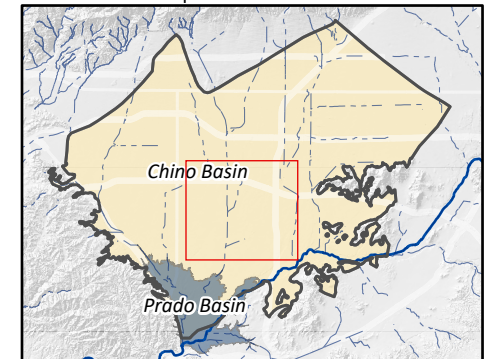
Approximate Extent of the Plume
Delineated in the 2025
Annual Groundwater Monitoring Report

- Extent Greater Than 5 µg/l
- Complete Extent

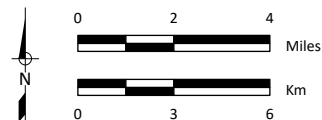
Chino Basin Desalter Authority Facilities:

- Pumping Well*
- Monitoring Well*
- Chino-II Desalter Treatment Facility
- ABGL Monitoring Well
- Streams & Flood Control Channels

*Red labels indicate wells that are specifically discussed in the report.



Prepared by:



Prepared for:
Chino Basin Watermaster
Semi-Annual Plume Report
South Archibald



South Archibald
TCE Plume

Exhibit 1