

# Formal Comment on the Draft Environmental Impact Statement

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## Ho'onani Village Mixed-Use Development Project

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LUC Docket No. A25-811 | Comment Period Closes May 7, 2026

**Submitted by:**

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**Submitted to:**

Emily Ballard, Pioneer Design Group – Hawai'i LLC  
Martina Segura, State of Hawai'i Land Use Commission

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## Section 1 — Statement of Interest and Standing

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I am a Maui resident based in Ha'ikū, with a direct interest in the environmental quality, water resources, and public health outcomes of development in the Kahului–Pu'unēnē corridor. My professional background is in software and systems engineering, with over forty years of experience including federally-funded research at HRL Laboratories and other DARPA-supported programs, an MS in Computer Science from the University of Southern California; I read technical assessments as part of my regular practice and am qualified to evaluate the analytical sufficiency of the DEIS at issue here.

I participated in the EIS scoping process. On December 14, 2025, I submitted written comments to the EIS preparer (received and date-stamped by the State of Hawai'i Land Use Commission on December 16, 2025) raising PFAS contamination concerns in the project vicinity, specifically referencing the Hawai'i Department of Health's documented detection of PFAS in the adjacent Maui Business Park water system. That submission is part of the official project record. This formal comment supplements those scoping comments and is submitted to preserve all rights to challenge the adequacy of the EIS under HRS Chapter 343 and applicable administrative rules.

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## Section 2 — Executive Summary

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The DEIS does not adequately evaluate water resource sustainability or contamination risk. Specific deficiencies:

- The DEIS itself acknowledges that current Kahului Aquifer System pumpage exceeds the CWRM-designated sustainable yield by approximately six- to sevenfold, yet concludes the project will not adversely impact the system without supporting modeling.
- The proposed sole water source (Puunene-Pump 6, State Well No. 5226-02) is a 1934 plantation well with documented contamination history in the Hawai'i DOH Groundwater Contamination Maps (atrazine 1985; desethyl atrazine 2003); historically classified by DOH as irrigation-only (IRR), not potable. August 2025 baseline sampling tested only specific conductance — no PFAS, VOCs, metals, atrazine, atrazine degradation products, or other legacy plantation agrochemicals.

- No PFAS or emerging-contaminant analysis, despite DOH-confirmed contamination in the adjacent Wai'ele wells (Maui Business Park system).
- No analysis of contamination migration pathways from Central Maui Landfill, Kahului Airport AFFF history, or the Wai'ele wells.
- No quantification of recharge loss vs. demand increase.
- No cumulative-impact analysis with adjacent in-progress energy infrastructure on Pulehu Road (Pūlehu Solar, Waena BESS).
- No reverse-osmosis brine disposal plan; no determination of public-vs-private system regulatory status.

These omissions, individually and collectively, fail the disclosure requirements of HRS Chapter 343 and HAR Title 11, Chapter 200.1. The DEIS should not be accepted as complete without supplemental analysis. Specific requested actions are listed in Section 10.

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## Section 3 — Groundwater Sustainability

The DEIS identifies the proposed source well as located in the **Kahului Aquifer System**, immediately adjacent to its boundary with the Pā'ia Aquifer System (DEIS Vol. II, Water Resources). By the DEIS's own admission, this aquifer has a CWRM-designated sustainable yield of 1.0 MGD while current pumpage is "about 6 to 7 MGD." This is independently confirmed by November 2025 statements from DLNR, which reported a 12-month moving average of 6.562 MGD and acknowledged that CWRM is actively reviewing sustainable-yield values with the U.S. Geological Survey because existing values "may not fully reflect present hydrologic conditions." DLNR further noted that, because the relevant aquifers lack groundwater management area designation, the State currently has no statutory authority to regulate pumping in the system. The Kahului Aquifer System has a documented contamination history. The Hawai'i DOH Safe Drinking Water Branch *Groundwater Contamination Maps* (2004 and 2005 editions) record that the **Reynolds Well #1 (State Well No. 5129-01)** was rendered inactive following DBCP detection at 0.06 µg/L (sample date November 24, 2003). Maui County Department of Water Supply has acknowledged the closures of the Reynolds Well, the Old Maui High School Well, and the Pauwela Well (Ha'ikū) due to DBCP contamination (Maui County Council Water Resources Committee Minutes, August 30, 2011, statement of DWS Director Dave Taylor).

Adding the project's average demand of approximately 1.1 MGD (max-day 1.65 MGD) to a system already at six- to sevenfold its regulatory sustainable yield is a foreseeable HRS 343 impact. The DEIS author's conclusion that the proposed well "would not adversely impact any ongoing use of existing wells or the utility of the Kahului Aquifer System" is asserted as opinion without modeling, in direct tension with the same author's documentation of existing overdraft. The DEIS contains no sustainable-yield analysis under full build-out plus regional growth, no drought scenario, no climate-adjusted recharge projection, and no drawdown modeling.

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## Section 4 — The Proposed Water Source: Puunene-Pump 6 Well (State Well No. 5226-002)

The DEIS proposes to reactivate a single legacy plantation well as the sole drinking-water source for an approximately 1,600-unit residential and mixed-use development. Documented characteristics (per DEIS Vol. II):

- **Origin:** former HC&S plantation pumping facility, constructed 1934, in continuous use through 2014.
- **Structure:** vertical access tunnel with elevator and two horizontal skimming tunnels; ground elevation

182 ft.

- **Location:** TMK (2) 3-8-006:001 (portion), east side of Pulehu Road right-of-way, south of the development parcel.
- **Historical salinity (HC&S era):** 1,300 to 2,000  $\mu\text{S}/\text{cm}$  specific conductance (chlorides 350 to 550 mg/L) — brackish.
- **August 28, 2025 sampling:** 1,200 to 1,230  $\mu\text{S}/\text{cm}$  (chlorides ~325 to 330 mg/L); only specific conductance was measured.
- **Treatment proposed:** reverse osmosis filtration for salinity reduction.

Four deficiencies attach. **First**, the DEIS identifies no redundant or alternate source; the entire project depends on one 1934 well in a six- to sevenfold-overdrafted aquifer. **Second**, the DEIS does not disclose that the proposed Pump 6 source itself has documented contamination detections in the official DOH record. The Hawai'i DOH Safe Drinking Water Branch *Groundwater Contamination Maps* (2004 and 2005 editions) list **Puunene Pump 6 (State Well No. 5226-02)** with detections of **atrazine at 0.09  $\mu\text{g}/\text{L}$**  (sample date March 12, 1985) and **desethyl atrazine** — atrazine's primary degradation product — **at 0.06  $\mu\text{g}/\text{L}$**  (sample date November 24, 2003). The same DOH records flag the well's historical use status as **"IRR"** (irrigation use only — not classified for potable service). The DEIS proposes to convert this irrigation-classified, atrazine-detected well to drinking-water service for an approximately 1,600-unit residential development, with August 2025 baseline sampling that tested only specific conductance — no atrazine, no atrazine degradation products, no PFAS (despite documented contamination in the nearby Wai'ele wells and proximity to Kahului Airport AFFF history), no VOCs, no other legacy plantation agrochemicals (DBCP, EDB, TCP — historically detected by DOH at the Old Maui High School Well, Pauwela Well, and other Maui wells across the same plantation-era exposure window), no metals, no nitrates, and no full DOH Environmental Action Level contaminant panel. **Third**, reverse osmosis concentrates dissolved constituents — including any contaminants — into a brine reject stream typically 20 to 25 percent of throughput; the DEIS specifies no disposal pathway, no monitoring, and no environmental analysis for this waste stream. If contaminants are present in source water, RO concentrates rather than removes them. **Fourth**, the DEIS indicates the system will be private if no County DWS agreement is finalized, but does not analyze the regulatory implications — testing, reporting, public disclosure, and long-term remediation responsibility differ materially between Safe Drinking Water Act-regulated public systems and private systems.

A 1934 plantation well, in a regulatorily overdrafted aquifer, with documented adjacent PFAS contamination, eight decades of upgradient agrochemical exposure, sampled only for salinity, is not a sufficient water-quality baseline to support an HRS 343 finding of adequate disclosure.

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## Section 5 — Wastewater Treatment, RO Brine, and Reuse

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The project proposes on-site wastewater treatment to R-1 quality with reuse for irrigation, plus reverse-osmosis treatment of the Pump 6 source water (Section 4). Two waste streams arise that the DEIS does not adequately analyze.

**Reverse-osmosis concentrate (brine).** RO treatment concentrates source-water dissolved constituents — including any PFAS, DBCP, EDB, TCP, organochlorines, nitrates, or metals present in the Pump 6 source — into a reject stream typically 20 to 25 percent of throughput, with contaminants concentrated roughly four- to fivefold relative to the source. The DEIS specifies no disposal pathway, no contaminant characterization of the brine, and no environmental analysis. If the brine is routed into the on-site WWTP, it loads that system with concentrated source-water contaminants the WWTP was not designed to remove. If discharged elsewhere — to injection well, surface water, or land — it constitutes an unanalyzed concentrated waste stream.

**Treated wastewater reuse for irrigation.** Conventional wastewater treatment does not remove PFAS or the legacy plantation agrochemicals identified in Sections 4 and 6. Where the source water itself has not been tested for these compounds, neither has the WWTP influent or effluent. Application of treated effluent to land for irrigation places any unremoved contaminants onto soil that already contains decades of vadose-zone agrochemical residue, where the same irrigation-return-flow mechanism described in Section 6 transports them downward into the same aquifer system that supplies the project. The result is a closed-loop accumulation pathway: contaminants drawn from the aquifer at the well, partially concentrated by RO, partially passed through the WWTP, returned to soil via irrigation, and re-mobilized into the aquifer — at each cycle, the persistent fraction concentrates further.

The DEIS contains no PFAS or persistent-contaminant analysis of WWTP influent or effluent, no evaluation of whether the proposed treatment technology removes PFAS or legacy fumigants, no characterization or disposal plan for RO brine, and no monitoring requirement for either waste stream.

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## Section 6 — Offsite Contamination Migration

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DOH has confirmed PFAS contamination in the **Wai‘ele Wells 1 and 2 Chlorinator** serving the Maui Business Park water system, immediately adjacent to the project site (<https://health.hawaii.gov/news/submenu/pfas-detected-in-maui-business-park-system/>):

- PFOA: 2.2 ng/L
- PFHpA: 2.0–2.2 ng/L
- PFHxA: 2.8 ng/L
- PFPeA: 4.1 ng/L
- PFBA: 3.3 ng/L

Detections were reported by laboratory February 20, 2024, confirmed March 27, 2024, and notified to DOH April 3, 2024 — all publicly available before DEIS publication, and explicitly raised by this commenter during scoping. The DOH notice does not identify the affected aquifer; the project preparer is positioned to verify the Wai‘ele aquifer assignment against the CWRM Well Index Database, but the DEIS does not perform or disclose this analysis. Given that the Wai‘ele wells, the proposed Pump 6 source, and adjacent contamination sources sit within the same regional groundwater flow regime in central Maui, cross-contamination is foreseeable regardless of the named aquifer subdivision.

**Irrigation return flow as a contaminant transport pathway.** DLNR's November 2025 statement that irrigation return flow contributes meaningfully to recharge of the Kahului Aquifer System cuts both ways: the same return flow mobilizes legacy plantation agrochemicals (DBCP, EDB, TCP, organochlorines, nitrates) bound in the vadose zone of former HC&S lands, transporting them downward into the aquifer (Oki & Giambelluca, *Ground Water*, 1987). The 1992 Hāpoko detections — eight to thirteen years after surface application bans — empirically confirm multi-decade leaching timescales, and ongoing irrigated agriculture by Mahi Pono on the surrounding former HC&S lands sustains the transport mechanism. The DEIS quantifies neither the recharge term nor the contaminant transport term.

The site is also approximately one mile from Kahului Airport, a known historical AFFF source, and across Pulehu Road from the **Central Maui Landfill**, which operates under a Groundwater and Leachate Monitoring Plan administered by the County of Maui Department of Environmental Management. The publicly available 2019 update of that plan does not include PFAS within its monitored analyte panel, and the DEIS does not analyze whether landfill leachate constitutes an additional contamination pathway to the proposed water

source. Groundwater contamination is not confined by parcel boundaries; it follows regional flow patterns and is influenced by pumping. A new development that increases groundwater extraction has the foreseeable potential to draw existing plumes toward its own residential supply. The DEIS includes no contaminant plume mapping, no upgradient or downgradient analysis, and no monitoring well network.

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## Section 7 — Recharge Reduction vs. Demand Increase

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The project will substantially increase impervious surface coverage through roads, rooftops, and parking, reducing groundwater recharge at the same time it increases extraction. The DEIS does not quantify recharge lost, does not provide a net water balance comparing recharge reduction to extraction increase, and does not evaluate low-impact development alternatives. For a project of this scale (~166 acres) the aggregate recharge impact is reasonably foreseeable as significant; combined with existing Kahului Aquifer System overdraft, the structural imbalance accelerates depletion.

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## Section 8 — Cumulative Impacts: Adjacent Energy Infrastructure on Pulehu Road

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The DEIS does not analyze the cumulative impact of Ho'onani Village in combination with two other major projects sited on Pulehu Road, both of which began construction prior to DEIS publication:

- **Pūlehu Solar** (Longroad Energy): 20 MW(ac) photovoltaic with 80 MWh / 4-hour BESS and a new substation, 363 acres on the makai (west) side of Pūlehu Road, construction 2025, completion targeted 2027.
- **Waena BESS** (Hawaiian Electric): 40 MW / 160 MWh standalone load-shifting battery energy storage on HECO-owned property along Pulehu Road, construction announced late 2025.

HRS Chapter 343 and HAR 11-200.1 require cumulative-impact disclosure across reasonably foreseeable past, present, and future actions. Three considerations are unaddressed: (1) the combined developed footprint of Ho'onani Village (166 ac) plus Pūlehu Solar (363 ac) — roughly 529 acres of land-use change in the same recharge corridor — is not analyzed in any net-recharge calculation; (2) BESS thermal-runaway fire-suppression systems are a recognized emerging-contaminant pathway; the DEIS does not disclose or analyze the fire-suppression chemistry of the adjacent BESS facilities; (3) transformer dielectric fluids and stormwater runoff from large solar arrays are foreseeable contamination considerations not addressed. Isolated analysis of the 166-acre parcel does not satisfy the cumulative-impact standard when three substantial concurrent land-use changes occur in the same corridor over the same aquifer system.

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## Section 9 — Regulatory Standard and Legal Position

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Under HRS Chapter 343 and HAR Title 11, Chapter 200.1, an EIS must identify and evaluate all reasonably foreseeable impacts of a proposed action. The impacts identified in Sections 3 through 8 are not speculative; they are grounded in documented aquifer conditions, confirmed adjacent contamination in the official DOH record, prior scoping comments that placed PFAS risk formally before the preparer, and known characteristics of PFAS compounds in groundwater systems. When credible risks are raised during scoping and not substantively addressed in the DEIS, they become documented omissions on the record. Approval without supplemental analysis would leave the County without the primary protection the EIS process is designed to provide: a documented record showing that impacts were understood and considered.

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## Section 10 — Requested Actions

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I respectfully request that the DEIS be supplemented prior to any acceptance or approval to include:

1. A comprehensive water budget and aquifer sustainability analysis for the Kahului Aquifer System under current overdraft conditions, including drought and regional build-out scenarios, with explicit reconciliation against the November 2025 CWRM/USGS sustainable-yield review;
  2. A full contaminant-panel analysis of Puunene-Pump 6 source water, benchmarked against current Hawai'i DOH Environmental Action Levels (EALs) and the 2024 EPA PFAS National Primary Drinking Water Regulations, and including at minimum:
    - PFAS via US EPA Method 1633 or equivalent;
    - Volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs);
    - Atrazine and its degradation products (including desethyl atrazine), which have been detected in this exact well per DOH Groundwater Contamination Maps (1985 and 2003 sampling events);
    - Legacy plantation pesticides and fumigants explicitly including dibromochloropropane (DBCP), ethylene dibromide (EDB), and 1,2,3-trichloropropane (TCP), all of which have been detected in other Maui aquifer wells with shared agrochemical exposure history;
    - Other pesticides and herbicides documented in plantation use in the source area;
    - Heavy metals (including arsenic, lead, chromium);
    - Nitrates and nitrites;
  3. Identification of an alternate or backup water source so the project is not single-source-dependent;
  4. A reverse-osmosis brine management plan including disposal pathway, brine contaminant characterization, and environmental impact analysis;
  5. Verification of the aquifer assignment of the Wai'eale wells against the CWRM Well Index Database, plus PFAS/emerging-contaminant testing of soil, groundwater, and wastewater;
  6. Groundwater flow and contaminant transport modeling covering the Pulehu Road corridor and the Wai'eale wells, Kahului Airport AFFF history, and Central Maui Landfill;
  7. A net recharge vs. extraction balance analysis across the project footprint;
  8. A cumulative-impact analysis covering Ho'onani Village, Pūlehu Solar, and Waena BESS, with disclosure of fire-suppression chemistry at adjacent BESS facilities;
  9. Evaluation of the proposed wastewater treatment system's capability for persistent-contaminant removal (PFAS, DBCP, EDB, TCP, organochlorines), with explicit analysis of the closed-loop reinjection pathway from irrigation reuse of treated effluent back into the same aquifer that supplies the project;
  10. A formal regulatory determination as to whether the water system will be public or private, with disclosure of the testing, monitoring, and reporting framework that will apply for the operational life of the development;
  11. A long-term monitoring and mitigation plan with enforceable thresholds.
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# Section 11 — Reservation of Rights

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This comment is submitted to satisfy participation requirements and to preserve all legal rights with respect to this proceeding. By submitting these comments, I reserve the right to raise any and all issues related to the adequacy of the DEIS and the lawfulness of any approvals granted on the basis of the current document, including but not limited to challenges under HRS Chapter 343. Nothing in this comment should be construed as a waiver of any right, claim, or objection not expressly addressed herein.

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Respectfully submitted,

Gerald (Jerry) Isdale  
Ha'ikū, Maui, Hawai'i  
May 1, 2026

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## Appendix Reference

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A detailed technical assessment of PFAS contamination pathways relevant to this project, including regulatory framework, exposure pathway analysis, and required testing specifications, is available as a separate appendix and may be submitted as a supplement to this comment.

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## References

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### Primary project documents:

1. State of Hawai'i Land Use Commission, Docket No. A25-811 — Draft Environmental Impact Statement, Ho'onani Village Mixed-Use Development, Volumes I-III, published March 23, 2026; [https://files.hawaii.gov/dbedt/erp/Doc\\_Library/2026-03-23-MA-DEIS-Hoonani-Village-Mixed-Use-Development-Vol-I-of-III.pdf](https://files.hawaii.gov/dbedt/erp/Doc_Library/2026-03-23-MA-DEIS-Hoonani-Village-Mixed-Use-Development-Vol-I-of-III.pdf) (Vols II and III at corresponding URLs).
2. Pioneer Design Group – Hawai'i LLC, applicant notice of DEIS availability and 45-day comment period, dated March 20, 2026 (LUC RECEIVED stamp 03/18/2026).
3. Isdale, J., scoping comment to EIS preparer, sent December 14, 2025; received and date-stamped by State of Hawai'i Land Use Commission December 16, 2025.

### Aquifer status and water resources:

4. Hawai'i Department of Land and Natural Resources / Commission on Water Resource Management, statements quoted in Brian Perry, "State clarifies Central Maui pumping data; groundwater aquifer limits are under review," *Maui Now*, November 28, 2025; <https://maui-now.com/2025/11/28/state-clarifies-central-maui-pumping-data-groundwater-aquifer-limits-are-under-review/>
5. Maui Tomorrow Foundation, *Maui's Water Resources: A General Overview*; <https://maui-tomorrow.org/maui-water-resources-a-general-overview/>

### PFAS contamination — Maui Business Park:

6. Hawai'i Department of Health, *PFAS Detected in Maui Business Park System* (notice page); <https://health.hawaii.gov/news/submenu/pfas-detected-in-maui-business-park-system/>

### PFAS regulatory framework:

7. Hawai'i Department of Health, Hazard Evaluation and Emergency Response Office, *PFAS Environmental Action Levels (EALs)*, November 2024; <https://health.hawaii.gov/heer/files/2024/11/PFAS-EALs-HIDOH-Nov-2024.pdf>
8. U.S. Environmental Protection Agency, *PFAS National Primary Drinking Water Regulations*, final rule, 2024; <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>

#### **Pump 6 and adjacent well contamination — primary records:**

9. Hawai'i Department of Health, Safe Drinking Water Branch, Groundwater Protection Program, *Groundwater Contamination Maps, 2004* (9th edition); <https://health.hawaii.gov/sdwb/files/2013/06/conm-aps04.pdf> — direct DOH record of atrazine detection (0.09 µg/L, 03/12/1985) at Puunene Pump 6 (State Well 5226-02), DBCP detection (0.06 µg/L, 11/24/2003) at Reynolds Well #1 (State Well 5129-01), and IRR (irrigation-use) status flag for Pump 6.
10. Hawai'i Department of Health, Safe Drinking Water Branch, Groundwater Protection Program, *Groundwater Contamination Maps, 2005* (10th edition); <https://health.hawaii.gov/sdwb/files/2013/06/conm-aps05.pdf> — direct DOH record of desethyl atrazine detection (0.06 µg/L, 11/24/2003) at Puunene Pump 6 (State Well 5226-02).
11. Maui County Council Water Resources Committee, Minutes, August 30, 2011; <https://www.mauicounty.gov/Archive.aspx?ADID=15621> — includes statement by DWS Director Dave Taylor acknowledging closure of the Reynolds Well in Central Maui, the Old Maui High School Well, and the Pauwela Well (Ha'ikū) due to DBCP contamination.

#### **Adjacent contamination context — broader Maui plantation pesticide history:**

12. *Pineapple's Lasting Legacy: The Poisoned Wells of Maui*, Environment Hawai'i; <https://www.environment-hawaii.org/?p=3547> — documents DBCP and TCP detections at the Old Maui High School Well (TCP 400–450 ppt), Pauwela (TCP 1,200 ppt; DBCP), and other Maui wells (Napili, Ka'anapali, Maliko Gulch springs, Honolua) in the 1977–1996 period.
13. Sierra Club Maui Group, *East Maui Wells Timeline*; <https://mauisierraclub.org/east-maui-wells-timeline/> — documents the Hamakuapoko ("H'poko") exploratory wells (Maui BWS 1991), the 1993 East Maui Water Plan FEIS, the 1994 court ruling that the EIS was inadequate, and subsequent litigation history.
14. Oki, D. S. & Giambelluca, T. W. (1987). *DBCP, EDB, and TCP Contamination of Ground Water in Hawaii*. *Ground Water*, 25(6). Water Resources Research Center, University of Hawai'i at Mānoa. DOI: 10.1111/j.1745-6584.1987.tb02210.x — establishes the contamination-transport mechanism and the geographic correlation between plantation cultivation and well contamination in Hawai'i, including Maui.

#### **Central Maui Landfill:**

15. County of Maui Department of Environmental Management, *Central Maui Landfill Groundwater and Leachate Monitoring Plan*, March 2019 update; [https://health.hawaii.gov/shwb/files/2021/07/20190404\\_UPDATED-March-2019\\_GROUNDWATER-AND-LEACHATE-MONITORING-PLAN\\_current.pdf](https://health.hawaii.gov/shwb/files/2021/07/20190404_UPDATED-March-2019_GROUNDWATER-AND-LEACHATE-MONITORING-PLAN_current.pdf)

#### **Adjacent in-progress energy infrastructure:**

16. Longroad Energy, *Pūlehu Solar* project page; <https://www.longroadenergy.com/renewable-energy-portfolio/pulehu/>
17. Hawaiian Electric Company, press release, *Hawaiian Electric to begin construction of first standalone load-shifting battery energy storage system on Maui* (Waena BESS), December 18, 2025; <https://www.hawaiianelectric.com/hawaiian-electric-to-begin-construction-of-first-standalone-load-shifting-battery-energy-storage-system-on-maui>

**Well registry:**

18. State of Hawai'i Commission on Water Resource Management, Well Information Release Request portal; <https://dlnr.hawaii.gov/cwrm/groundwater/wellinfo/> — well-by-well registry data for State Well No. 5226-02 (Puunene-Pump 6) and the Wai'ele wells. *Note: as of 2026, the publicly searchable well-index table has been removed for security reasons; primary well data is available only by individual Well Information Release Request submitted to CWRM. A request has been initiated by this commenter for State Well 5226-02 and is pending response.*