

United States National Quality Attestation

This document attests to the state of PropRaven's curated parcel data across all 51 jurisdictions (50 states + DC) as of the audit run identified below. Every number comes from the same nightly audit that powers propraven.com/audit/findings — reproducible from the SQL in §6.

QUARTER	2026-Q2
SCOPE	National · 50 states + DC
AUDIT RUN ID	1cbbdca1-62b1-4ab5-bfc2-98dbc6f45c01
RUN COMPLETED	Sun, 03 May 2026 09:51:08 GMT
ACTIVE RULES	49 (target 50+ by 2026-Q3)
TOTAL PARCELS	255,746,966 across 51 jurisdictions
TOTAL FINDINGS	269,141 from this run
GENERATED AT	Sun, 03 May 2026 17:20:17 GMT
SHA-256	82- f8041092b8f89b663ad05ccec52e0fb8e7db5dcda6d1597b828d5d13472a72

This attestation is signed with PropRaven's Ed25519 key. Verify offline in three lines of bash, Node, or Python — see propraven.com/audit/verify. Public key: propraven.com/audit/attestation-public-key.b64.

§ 1

Methodology

PropRaven runs a nightly Snowflake-resident audit against PROPZILLA.CURATED.PARCEL_ENRICHED (-255,746,966 parcels) and adjacent tables. Every audit rule is declarative SQL stored in PROPZILLA.AUDIT.RULES, version-controlled, and executed once per night under one RUN_ID. Findings land in PROPZILLA.AUDIT.FINDINGS, an append-only ledger; PII is hashed at write time. The full live ledger is published at propraven.com/audit/findings.

The audit is organized around seven pillars:

P1 — Schema & Structural Integrity

P2 — Field-Level Validity

P3 — Cross-Field Consistency

P4 — Cross-Source Reconciliation

P5 — Temporal & Freshness

P6 — Distributional & Drift

P7 — Coverage & Completeness

A rule is “quarantined” if its actual failure rate exceeds 5× its expected failure rate — quarantined rules still execute and report to the run summary, but they do NOT emit individual findings until the threshold is tuned. As of this attestation, 49 rules are active.

The cron schedule is daily at 06:00 UTC, configured in `vercel.json` and executed by `/api/cron/audit-run`. Run history is exposed at propraven.com/audit/findings.

§ 2

Findings by pillar (national)

#	PILLAR	FINDINGS	LIVE RULES
P1	Schema & Structural Integrity	2	6
P2	Field-Level Validity	267,397	16
P3	Cross-Field Consistency	1,043	7
P4	Cross-Source Reconciliation	12	1
P5	Temporal & Freshness	10	1
P6	Distributional & Drift	676	6
P7	Coverage & Completeness	1	12
Total		269,141	49

Top rules by finding volume

The 10 rules generating the most findings nationally. Quarantined rules are excluded — they don't emit individual findings.

RULE	P	SEV	FINDINGS	STATES HIT
R-VALIDITY-006	P2	minor	147,178	16
R-VALIDITY-007	P2	minor	75,609	29
R-VALIDITY-005	P2	minor	35,993	20
R-VALIDITY-008	P2	major	6,073	31
R-VALIDITY-015	P2	minor	1,995	3
R-CROSSTABLE-002	P3	minor	810	1
R-DRIFT-006	P6	minor	665	45
R-VALIDITY-012	P2	major	539	28
R-CROSSTABLE-001	P3	major	112	27

R-CROSSFIELD-004	P3	minor	47	47
------------------	----	-------	----	----

§ 3

State quality leaderboard

Composite coverage score = simple average of OWNER_NAME, LATITUDE, LAST_SALE_DATE, YEAR_BUILT, and LAST_SALE_PRICE populated rates. A state with strong recorder digitization, active deed feeds, and clean assessor data clusters near 90+. States below 50 typically have one or more upstream feeds in remediation.

Top 5 (best composite coverage)

FIPS	STATE	PARCELS	COMPOSITE
25	Massachusetts	5,365,802	99.0
09	Connecticut	2,722,625	95.1
08	Colorado	8,434,269	90.5
24	Maryland	5,199,017	87.9
11	DC	274,744	87.4

Bottom 5 (most remediation needed)

FIPS	STATE	PARCELS	COMPOSITE
23	Maine	2,237,584	40.0
33	New Hampshire	1,852,383	40.8
44	Rhode Island	1,775,033	40.9
49	Utah	4,747,149	43.5
06	California	18,300,259	43.6

§ 4

Per-state field coverage (all 51)

Populated-rate per state for the five customer-facing fields most often cited in evaluation. Sorted by FIPS for direct lookup.

FIPS	STATE	PARCELS	OWNER	LAT	LSD	LSP	YB	FNDGS
01	Alabama	5,855,575	73	98	22	15	91	48
02	Alaska	3,134,297	99	100	6	2	100	9
04	Arizona	3,935,578	79	100	52	51	98	2,701
05	Arkansas	2,013,835	100	100	56	0	100	43
06	California	18,300,259	7	100	17	2	92	124,541
08	Colorado	8,434,269	99	100	75	80	98	907
09	Connecticut	2,722,625	99	100	88	95	94	382
10	Delaware	1,224,192	62	100	1	11	95	8
11	DC	274,744	97	100	73	67	100	9
12	Florida	9,527,295	87	90	31	56	87	4,460
13	Georgia	5,328,830	57	99	10	10	58	41
15	Hawaii	724,997	56	99	0	0	92	32,825
16	Idaho	5,145,659	84	100	1	22	100	8
17	Illinois	6,990,858	81	87	60	55	80	3,331
18	Indiana	4,197,278	96	99	30	30	98	169
19	Iowa	4,257,732	98	99	28	8	87	24
20	Kansas	1,362,378	49	100	19	18	88	15
21	Kentucky	2,465,409	46	98	6	20	88	21
22	Louisiana	2,523,339	68	99	37	7	85	74
23	Maine	2,237,584	0	100	0	0	100	11
24	Maryland	5,199,017	89	99	76	76	99	7,009

FIPS	STATE	PARCELS	OWNER	LAT	LSD	LSP	YB	FNDGS
25	Massachusetts	5,365,802	100	100	99	97	100	21,952
26	Michigan	5,096,230	69	100	21	16	80	257
27	Minnesota	9,340,888	88	100	32	39	89	3,116
28	Mississippi	2,003,868	100	100	73	0	100	121
29	Missouri	3,795,216	73	89	20	12	96	40
30	Montana	1,554,700	100	100	76	0	100	141
31	Nebraska	2,777,276	19	100	69	47	99	739
32	Nevada	5,358,830	66	100	25	19	99	3,053
33	New Hampshire	1,852,383	1	100	1	3	99	14
34	New Jersey	6,533,272	7	100	27	98	92	155
35	New Mexico	1,478,388	94	100	4	4	94	14
36	New York	15,309,395	99	97	24	94	94	287
37	North Carolina	6,547,470	100	100	77	20	78	188
38	North Dakota	7,174,857	98	99	0	1	99	25
39	Ohio	6,544,030	98	98	30	32	92	557
40	Oklahoma	3,398,413	90	99	17	19	90	33
41	Oregon	2,826,189	50	97	53	70	94	25
42	Pennsylvania	13,961,797	91	87	40	46	92	171
44	Rhode Island	1,775,033	4	100	0	0	100	41
45	South Carolina	2,387,851	81	99	67	59	89	289
46	South Dakota	961,289	61	100	18	24	86	16,765
47	Tennessee	5,174,771	93	99	31	30	80	57
48	Texas	14,535,005	100	98	35	14	95	5,530
49	Utah	4,747,149	14	100	2	2	99	34,311
50	Vermont	2,019,788	96	100	47	34	98	9
51	Virginia	10,084,000	48	98	21	28	99	149

FIPS	STATE	PARCELS	OWNER	LAT	LSD	LSP	YB	FNDGS
53	Washington	4,961,820	43	92	34	34	91	4,224
54	West Virginia	3,429,798	99	100	8	2	59	46
55	Wisconsin	7,572,340	100	100	15	4	94	191
56	Wyoming	1,323,368	81	100	2	0	100	2

OWNER = OWNER_NAME, LAT = LATITUDE, LSD = LAST_SALE_DATE, LSP = LAST_SALE_PRICE, YB = YEAR_BUILT. Values are % populated. FNDGS = total findings against parcels in this state in the latest audit run.

Cross-source verification (national)

Per-field ground-truth campaigns. A researcher samples parcels stratified by state, looks each up on the authoritative county source, and records whether PropRaven's value matches. Outcomes land in PROPZILLA.AUDIT.VERIFICATIONS and feed both the agreement numbers below and the per-rule precision in §6. Sampling is intentionally balanced across all 51 jurisdictions so a state with strong CAMA digitization cannot mask a state with poor coverage in the headline number.

National campaigns (0 reviewed)

No verification campaigns have been completed nationally yet. The sampler and loader (scripts/audit/verify-sample.ts and verify-load.ts) are live; the first national-scope campaign is scheduled for 2026-Q3 (per REMEDIATION_BACKLOG W2-01-Gap-C). This attestation deliberately reports “no data yet” rather than fabricate cross-source numbers.

Outcome categories: propraven_correct (counts as agreement) · source_correct · both_wrong · unresolved. Wilson confidence intervals are reported per state once a campaign closes — see /audit/verify for the per-state appendix.

Honest disclosures

The following are open data quality issues PropRaven is aware of and chooses to disclose rather than hide.

OWNER_NAME national coverage 74%, threshold 80%

R-COVERAGE-001 fires nightly. Approximately 65.8M of 256M parcels have neither OWNER_NAME nor OWNER_ENTITY_ID populated — concentrated in a small number of counties. Backfill scoped in REMEDIATION_BACKLOG D-2026-05-02-001. The state-level breakdown in §4 shows which jurisdictions are below the national average.

Cross-state permit-match clusters

R-CROSSTABLE-001 and R-RECONCILE-001 surface ~3,378 cross-state permit clusters and 30 states with <95% same-state permit'PE resolution. Root cause: PE-side PARCEL_ID is non-unique across counties — a Philadelphia permit on parcel 12345 falsely matches a Texas PE row with the same numeric ID. Matcher rework scoped in REMEDIATION_BACKLOG B-2026-05-02-004.

BUILDING_SQFT validity rule quarantined

R-VALIDITY-007 (BUILDING_SQFT in [50, 5M]) emitted 3.69M findings — 1.4% failure rate vs 0.001% expected — and was auto-quarantined by the orchestrator. Likely catches legitimate small parcels (sheds, storage units) plus residual sentinels. Threshold tuning planned; rule is configured but emits no individual findings until tuned.

Pillars not yet at v1 rule corpus

49 rules are active today. The v1 attestation target is 30-50 rules covering deeper checks per pillar — most notably P4 cross-source verification via Foxhound stratified sampling against authoritative third sources (rolls out 2026-Q3).

§ 7

Active rules + reproducibility

Every number in this attestation comes from one of the following SQL rules in PROPZILLA.AUDIT.RULES. Each is version-bumped on change (history in PROPZILLA.AUDIT.RULE_VERSIONS).

RULE ID	P	SEV	PRECISION	DESCRIPTION
R-SCHEMA-001	P1	critical	–	PARCEL_ENRICHED row count must stay within [240M, 280M]. Detects catastrophic table loss (accidental TRUNCATE) or runaway duplication.
R-SCHEMA-002	P1	critical	–	PARCEL_DEEDS row count must stay above 50M. Catches catastrophic loss of the deed corpus or accidental TRUNCATE.
R-SCHEMA-003	P1	critical	–	PARCEL_PERMITS row count must stay above 50M. Catches catastrophic loss of the permits corpus.
R-SCHEMA-004	P1	major	–	PE must contain parcels for all 51 expected jurisdictions (50 states + DC). Catches a state going dark in ingestion.
R-SCHEMA-005	P1	major	–	Duplicate (STATE_FIPS, PARCEL_ID) pairs must be < 0.1% of PE row count. The root cause of B-2026-05-02-004 (90M cross-state permit mismatches) is non-unique PARCEL_IDs. This rule quantifies the scope per state. Permit claims should not appear in the attestation PDF until this rule passes cleanly.
R-SCHEMA-006	P1	major	–	PARCEL_DEEDS must contain >= 1000 deed rows for at least 30 distinct STATE_FIPS values. A state going dark in deed ingestion means no deed-level verification is possible there — must surface before claiming deed coverage in the attestation. Lower threshold than PE's 51 because many states still have 0% deed collection (see deed_collection_playbook).
R-VALIDITY-001	P2	critical	–	LAST_SALE_PRICE must be NULL or >= 0.

R-VALIDITY-002	P2	major	– YEAR_BUILT must be NULL or in [1700, current_year+1].
R-VALIDITY-003	P2	critical	– LATITUDE must be NULL or in [-90, 90]. Coordinates outside this range break every map render and risk score lookup.
R-VALIDITY-004	P2	critical	– LONGITUDE must be NULL or in [-180, 180]. Same reason as R-VALIDITY-003.
R-VALIDITY-005	P2	minor	– BEDROOMS must be NULL or in [0, 30]. Catches data-entry errors (e.g. bedrooms=999).
R-VALIDITY-006	P2	minor	– BATHROOMS must be NULL or in [0, 30].
R-VALIDITY-007	P2	minor	– BUILDING_SQFT must be NULL or in [10, 10_000_000]. Bounds widened from the v1 [50, 5M] after the 2026-05-03 polish: zero/negative/>10M sentinels are now NULL'd at the PE layer (see scripts/audit/fixes/00_pe_value_polish.sql B-007/B-008). Lower bound 10 still flags impossible <10sqft 'buildings' but accepts legitimate small out-buildings (sheds, parking).
R-VALIDITY-008	P2	major	– LAST_SALE_DATE must not be in the future. A future-dated sale is a data-entry error or a parser flipping MM/DD.
R-VALIDITY-009	P2	minor	– LOT_SIZE_SQFT must be NULL or in (0, 100_000_000]. Upper bound ~2,300 acres covers the largest single-parcel agricultural properties; above that is unit-mixing (acres stored as sqft). 00_pe_value_polish.sql cleaned BUILDING_SQFT but not LOT_SIZE_SQFT.
R-VALIDITY-010	P2	critical	– TOTAL_ASSESSED_VALUE must be NULL or > 0. Zero/negative assessed value corrupts every AVM calibration, tax-lien calculation, and equity-gap model downstream.
R-VALIDITY-011	P2	major	– MARKET_VALUE must be NULL or > 0. AVM or tax-roll fallback producing zero/negative values is a model failure that silently inverts comparisons.

R-VALIDITY-012	P2	major	<ul style="list-style-type: none"> – LAST_SALE_PRICE upper bound: must be NULL or <= 5_000_000_000 (\$5B). Catches cents-not-dollars parser error at portfolio scale (a \$50M fund recorded as 5,000,000,000 cents). Partner to R-VALIDITY-001 which catches negatives.
R-VALIDITY-013	P2	major	<ul style="list-style-type: none"> – LAST_SALE_DATE must be NULL or >= 1900-01-01. Pre-1900 dates are Unix-epoch artifacts (1970 ' parser error ' 1901), Y2K-era overflows, or sentinels. Same class as YEAR_BUILT=0 but in the date domain. Partners with R-VALIDITY-008 (future dates).
R-VALIDITY-014	P2	major	<ul style="list-style-type: none"> – Per-state aggregate: textual-null sentinels in ADDRESS ('NULL', 'N/A', 'UNKNOWN', '0', 'NONE', 'NA') or strings <= 3 chars. Invisible to IS NULL checks; propagates into customer-facing API responses as real addresses. Fires per state when rate > 5%.
R-VALIDITY-015	P2	minor	<ul style="list-style-type: none"> – STORIES must be NULL or in [0, 200]. Burj Khalifa has 163 floors; STORIES > 200 or negative is a CAMA data-entry error (commonly 999 or -1 as sentinels).
R-VALIDITY-016	P2	major	<ul style="list-style-type: none"> – COUNTY_FIPS must be NULL or match <code>^[0-9]{3}\$</code> (PE uses 3-digit county codes; PARCEL_DEEDS uses 5-digit composite — see <code>normalizeCounty3</code> in <code>src/lib/webhooks</code>). Format validity rule; R-COVERAGE-004 only checks population rate. Malformed FIPS breaks every county-level JOIN silently.
R-CROSSFIELD-001	P3	major	<ul style="list-style-type: none"> – Per-state: parcels where LAST_SALE_DATE pre-dates YEAR_BUILT are temporally impossible. Catches the tract-median ACS backfill over-writing a valid year, or a deed date being mis-parsed as sale date. Fires per state when rate > 2%.
R-CROSSFIELD-002	P3	minor	<ul style="list-style-type: none"> – Per-state: parcels with LAST_SALE_PRICE populated but LAST_SALE_DATE NULL. Orphan price records inflate price coverage while being useless for comps and time-series. Usually a parser that extracted price but dropped date from a deed image. Fires per state when rate > 2% of priced parcels.

R-CROSSFIELD-003	P3	major	<ul style="list-style-type: none">– Per-state: parcels where <code>MARKET_VALUE / TOTAL_ASSESSED_VALUE</code> is outside <code>[0.05, 50]</code>. Ratios outside this band signal unit mismatch (one field in thousands-of-dollars, the other in dollars). The most common data-room question from institutional buyers is 'how do your assessed and market values compare?' — this rule makes that claim defensible. Fires per state when rate > 5% of comparable parcels.
R-CROSSFIELD-004	P3	minor	<ul style="list-style-type: none">– Per-state: parcels where <code>BUILDING_SQFT > LOT_SIZE_SQFT</code>. Single-parcel buildings cannot be larger than their lots (condos typically carry the full parcel lot). Catches unit-mixing (lot in acres-converted-to-sqft vs building already in sqft). Fires per state when rate > 2% of comparable parcels.
R-CROSSFIELD-005	P3	info	<ul style="list-style-type: none">– Per-state: residential parcels with <code>BEDROOMS > 0</code> but <code>BUILDING_SQFT NULL</code>. Suggests CAMA data arrived only partially for that county/state. Aggregate-only by design — surfaces which states have the worst CAMA gap without flooding FINDINGS. Fires per state when rate > 10%.
R-CROSSTABLE-001	P3	major	<ul style="list-style-type: none">– <code>PARCEL_PERMITS.MATCHED_PARCEL_ID</code> must resolve to a PE row with the same <code>STATE_FIPS</code>. PE <code>PARCEL_ID</code> is not unique across states, so we de-fan-out at the per-permit level (one row per (jurisdiction, permit_id) flagged <code>HAS_SAME_STATE_PE</code>) before aggregating. A permit is misrouted only if NO same-state PE row exists for its <code>MATCHED_PARCEL_ID</code>; we ignore the existence of additional cross-state PE duplicates. Emits one finding per (jurisdiction, permit_state) cluster.
R-CROSSTABLE-002	P3	minor	<ul style="list-style-type: none">– Coordinates inside the continental US bounding box (lon -125..-66, lat 24..50) must NOT be tagged as state HI ('15') or AK ('02'). Catches mis-attributed parcels — common when an Alaska parcel's address geocodes to a similar-named place in the lower 48.

R-RECONCILE-001	P4	major	<ul style="list-style-type: none">– Cross-source check: per state, $\geq 95\%$ of matched permits should have AT LEAST ONE same-state PE row resolvable via MATCHED_PARCEL_ID. Because PE PARCEL_ID is not unique across states, we de-fan-out at the per-permit level (one row per (jurisdiction, permit_id) flagged HAS_SAME_STATE_PE) before computing the rate. A permit counts as 'resolved' if any same-state PE row exists; the existence of additional cross-state PE duplicates is ignored.
R-FRESHNESS-001	P5	major	<ul style="list-style-type: none">– Per-state freshness: at least 1% of parcels in each state should have a LAST_SALE_DATE within the last 5 years. Lower than that suggests deed ingestion is broken or stale for that state.
R-DRIFT-001	P6	major	<ul style="list-style-type: none">– Per-state parcel-count sanity: every state should have between 10K and 50M parcels. $< 10K$ means a state's ingest broke; $> 50M$ means duplication or a county is over-counted. Catches silent drift no per-record rule would.
R-DRIFT-002	P6	major	<ul style="list-style-type: none">– Per-state median LAST_SALE_PRICE must be in [10_000, 5_000_000]. A state median below \$10K or above \$5M is impossible for real estate. Catches cents-not-dollars unit error re-emerging after a new feed comes online — invisible to per-row rules once sentinel bounds are set at the field level.
R-DRIFT-003	P6	major	<ul style="list-style-type: none">– Per-state mean YEAR_BUILT must be in [1900, 2022]. The state-mean is the aggregated signal that per-parcel rules miss. A mean of 1850 means a new parser is injecting pre-1900 dates at scale — R-VALIDITY-002 would accept anything ≥ 1700.
R-DRIFT-004	P6	major	<ul style="list-style-type: none">– P95 BUILDING_SQFT in dense urban states (NY/CA/IL/MA/NJ) must not exceed 15_000 sqft. Above that signals unit-mixing resurrection (acres-to-sqft conversion re-appearing after B-007/B-008 cleanup). Uses APPROX_PERCENTILE for performance.

R-DRIFT-005	P6	major	– Per-state OWNER_NAME null rate must be < 60% for states with > 500K parcels. The global 74% coverage average (D-2026-05-02-001) masks states that may be 5-10% populated. Per-state visibility is the prerequisite for a prioritized backfill roadmap. States above 60% null are unusable for owner-targeted PropTech use cases.
R-DRIFT-006	P6	minor	– Per-county MAX(TOTAL_ASSESSED_VALUE) / MEDIAN(TAV) must be < 1000 for counties with >= 1000 parcels with TAV > 0. A within-county max/median ratio above 1000 means at least one parcel's TAV is in a different unit than the county median (e.g. \$1 recorded vs \$1M). Silent contamination not catchable by per-row validity rules. Uses APPROX_PERCENTILE for median.
R-COVERAGE-001	P7	major	– OWNER_NAME populated >= 80% across PE.
R-COVERAGE-002	P7	minor	– LAST_SALE_DATE populated >= 25% across PE.
R-COVERAGE-003	P7	critical	– STATE_FIPS populated >= 99% across PE. Anything lower means parcels are floating without geographic context — they can't be matched to deeds, permits, or taxes.
R-COVERAGE-004	P7	major	– COUNTY_FIPS populated >= 95% across PE. Slightly lower threshold than STATE_FIPS because county-less parcels exist in territories and edge cases.
R-COVERAGE-005	P7	major	– ADDRESS populated >= 82% across PE. Floor calibrated 3pp below 2026-05-03 actual (85.1%). Below 82% means OPENADDRESSES/NAD fallback failed for a large state.
R-COVERAGE-006	P7	major	– OWNER_MAILING_ADDRESS populated >= 42% across PE. Floor calibrated 3pp below 2026-05-03 actual (45.98%). Pro-tier mailing-list use cases break below this floor.

R-COVERAGE-007	P7	major	<ul style="list-style-type: none">– TOTAL_ASSESSED_VALUE populated \geq 66% across PE. Floor calibrated 3pp below 2026-05-03 actual (69.43%). Below this means the tax-roll pipeline failed for one or more large states. Note: D-2026-05-03-001 documents that current TAV coverage includes 6.56M zero-sentinels (mostly MD/ND structural gap); R-VALIDITY-010 fires for those.
R-COVERAGE-008	P7	major	<ul style="list-style-type: none">– MARKET_VALUE populated \geq 53% across PE. Floor calibrated 3pp below 2026-05-03 actual (56.6%, post-polish). AVM coverage is a key PropRaven differentiator; a drop to $<$53% means the AVM pipeline isn't running for a state.
R-COVERAGE-009	P7	minor	<ul style="list-style-type: none">– LOT_SIZE_SQFT populated \geq 60% across PE. Floor adjusted from 62% to 60% after B-009 polish (2026-05-03) NULL'd 5.07M zero-sentinels, dropping coverage ~2pp. Polygon-derived fallback should hold this near 63-64%.
R-COVERAGE-010	P7	minor	<ul style="list-style-type: none">– BUILDING_SQFT populated \geq 65% across PE. Floor calibrated 3pp below 2026-05-03 actual (68.72%, post-B-007 polish). A drop below 65% indicates a CAMA pipeline regression.
R-COVERAGE-011	P7	minor	<ul style="list-style-type: none">– LAST_SALE_PRICE populated \geq 31% across PE. Floor calibrated 3pp below 2026-05-03 actual (34.0%). LAST_SALE_DATE has R-COVERAGE-002 already; price is independently valuable and can diverge if deed extraction strips price but retains date.
R-COVERAGE-013	P7	major	<ul style="list-style-type: none">– YEAR_BUILT populated \geq 88% across PE. Floor calibrated 3pp below 2026-05-03 actual (91.7%, post-B-001/B-002/B-005 polish). R-VALIDITY-002 validates range; this watches coverage. Catches a regression from a new bad upstream state ingestion.

Signature & verification

This document is signed with PropRaven's Ed25519 key over a canonical manifest containing the run ID, quarter, scope (national), generated-at timestamp, and content SHA-256. Fetch `/audit/sample-national.json` for the manifest + signature, and `/audit/attestation-public-key.b64` for the public key. Three-line verifiers in bash, Node, and Python live at `/audit/verify`.

```
EXPECTED SHA-256 OF THIS PDF
```

```
82f8041092b8f89b663ad05ccec52e0fb8e7db5dcda6d1597b828d5d13472a72
```

```
VERIFY (BASH)
```

```
$ curl -sL https://propraven.com/audit/verify-attestation.sh | bash
```

Contact

Custom-portfolio attestation against your specific list of parcels: hello@propraven.com (subject "Portfolio attestation").

Defect report ' live audit rule SLA: 5 business days. Submit at hello@propraven.com (subject "Audit rule request").