MOUNTAIN MAN MINING

Est. 2017 · Sparks, Nevada

Paydirt

Making a living as a small-scale miner in the western United States — the economics, the equipment, the ground, and the law, at $4,000 gold.

A MOUNTAIN MAN MINING FIELD GUIDE

GOLD CLAIMS & MINES FOR SALE — AMERICAN WEST

MOUNTAINMANMINING.COM · PRICES AND REGULATIONS CURRENT AS OF JULY 2026

ABOUT THIS BOOK

This book was prepared in July 2026. Metal prices, government fee schedules, and regulations change; every number in these pages that depends on them is stamped with its date and should be re-verified before you spend money on it. Gold is quoted at its July 29, 2026 spot price of roughly $4,045 per troy ounce and silver at roughly $58 per troy ounce throughout, with sensitivity tables showing what happens at lower prices — because the single most reliable feature of metal prices is that they move.

Nothing here is legal, tax, or investment advice. Mining law is genuinely complicated, penalties for getting permits wrong are real, and several states treat the same activity very differently. Before staking claims, buying equipment, or disturbing ground, confirm the current rules with the BLM or Forest Service field office that manages the land, the state agencies named in Chapter 7, and — for anything involving meaningful money — a lawyer and accountant familiar with mining. Mine sites, old workings especially, can kill you; nothing here substitutes for proper safety training.

All economic models in this book are illustrative. They use defensible mid-range assumptions that are stated explicitly so you can rerun them with your own numbers. Your ground, your costs, and your results will differ.

ABOUT THE PUBLISHER

Mountain Man Mining LLC, established 2017 and based in Sparks, Nevada, connects prospectors and investors with verified gold, silver, and hardrock claims across the American West. We buy, sell, and broker unpatented federal mining claims; run a consignment program for claim owners; handle BLM filing services; and maintain a searchable Mining Library of 1,500+ historical documents plus the Open Ground claim-research program. Straightforward listings, real title records, no fluff — **MountainManMining.com**.

Disclosure: Chapter 18 presents claims currently offered for sale by the publisher. Everything this book teaches about independent due diligence — Chapters 5 and 6 especially — applies fully to our listings, and we encourage it.

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PART I · CHAPTER 1

Why Small-Scale Mining Works Again

Gold at $4,000 an ounce did not just make existing mines richer. It turned millions of yards of gravel and thousands of narrow veins that were waste rock a few years ago back into ore.

For most of the last century, the honest answer to "can a small operator make a living mining gold in the American West?" was: barely, sometimes, and usually not. The gold was still there — the West never ran out of gold, it ran out of gold that paid at the prevailing price with the prevailing costs. That constraint has now moved further in the small miner's favor than at any time since the 1930s, and it is worth understanding exactly why before a single dollar goes into equipment.

On July 29, 2026, spot gold traded at about **$4,045 per troy ounce** — up 23.5% in a year, and more than double the price of early 2024. In January 2026 it touched an intraday record near **$5,608** before pulling back. Silver has moved even harder in percentage terms, trading around **$58 per ounce**. Measured against the year 2000, gold has multiplied roughly fourteen-fold while diesel, steel, and labor — the things a small miner actually buys — have gone up perhaps three- to four-fold. That growing wedge between the price of the product and the cost of producing it is the entire economic story of this book.

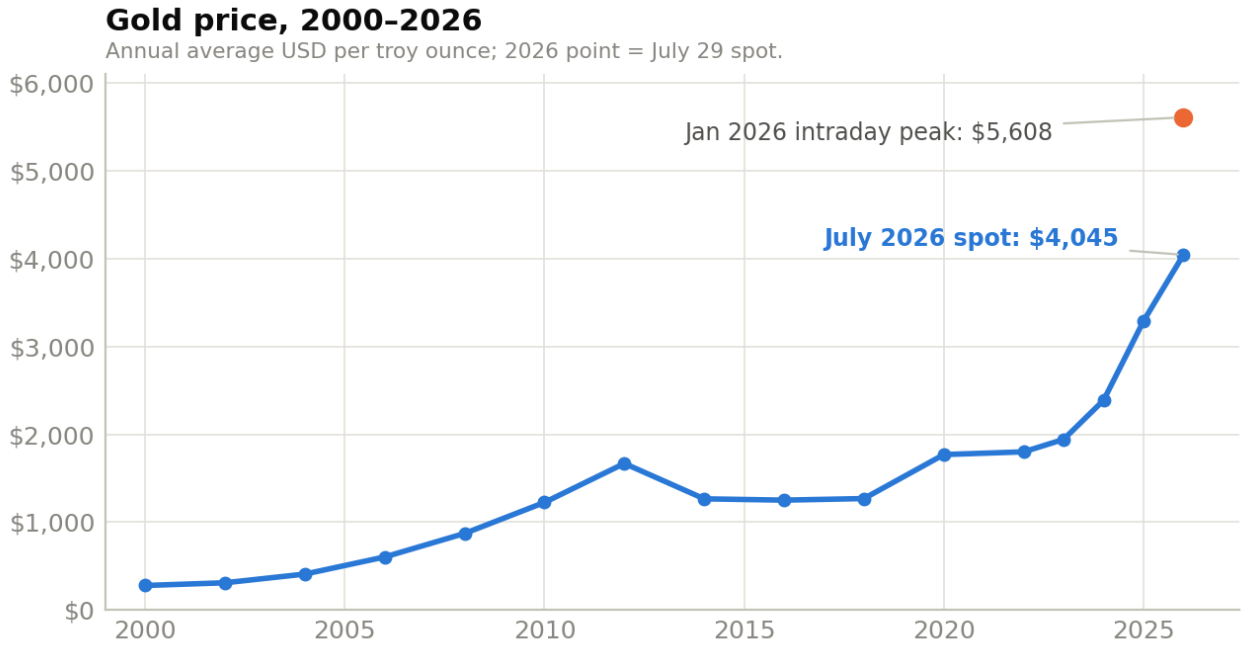

Figure 1.1 — Gold, 2000–2026. The 2024–2026 move is the steepest sustained rise in the modern era. Sources: LBMA/World Gold Council annual averages; July 29, 2026 spot.

What a Price Does to a Resource

A gold deposit is not a fixed thing. It is a gradient — a little bit of very rich material surrounded by progressively larger volumes of progressively leaner material. Where you draw the line between "ore" (rock that pays) and

"waste" (rock that doesn't) is purely an economic decision called the **cutoff grade**, and it moves every time the gold price or your costs move. Chapter 8 develops the arithmetic properly; the headline is simple. A small hardrock operation with all-in costs of $280 per ton needed roughly **6 grams of gold per tonne** to break even at $1,800 gold. At $4,045 it needs about **2.6 g/t**. A placer operator who needed a third of a gram per yard at $2,000 gold breaks even around **0.16 grams per yard** today at the same cost per yard.

Halving the cutoff grade does not double the available ore — it typically multiplies it many times over, because low-grade material is vastly more abundant than high-grade material. Every historic district in the West is ringed with gravel the old-timers walked away from, dump material they discarded, bench placers too lean for a rocker, and vein extensions that "pinched down" below the grade a 1935 mine could ship. A very large fraction of that material now clears a modern small operator's cutoff. This is why the small-scale opportunity is real and not nostalgia: **you are not looking for gold the old-timers missed; you are re-mining the economic margin they were forced to leave behind, at a price they never dreamed of.**

Why This Favors the Small Operator Specifically

Major mining companies cannot use most of this newly economic material. A company that must replace a million ounces of production a year cannot mobilize for a bench placer with 40,000 yards of pay or a vein segment carrying 8,000 recoverable ounces. Their discovery, permitting, and development cycle runs a decade and a billion dollars; targets below a few hundred thousand ounces are administrative noise to them. But 8,000 ounces at today's prices is roughly $30 million of contained metal — and deposits of that size, and far smaller ones that still support a living, exist by the thousands across Nevada, Arizona, California, Idaho, Montana, Oregon, and Colorado.

Three structural advantages keep this niche open to individuals. First, the **General Mining Law of 1872** still lets any citizen stake a claim on open federal land for a few hundred dollars and hold it for $200 a year — an access right to mineral wealth that exists almost nowhere else on earth. Second, **equipment has never been better or relatively cheaper**: a used mini-excavator, a modular wash plant that two people can assemble, and recovery systems that catch fine gold the old-timers lost are all within a small business loan of reach. Third, **information is free**: the USGS mineral databases, BLM claim records, geologic maps, and a century of district reports are online, so the desktop phase of exploration that once required a Denver library card now requires an evening and a laptop.

> **THE PRICE CUTS BOTH WAYS**
>
> Gold fell roughly 28% from its January 2026 peak to its July 2026 level. A business plan that only works at $4,000+ gold is a bet, not a plan. Every model in this book therefore shows you the numbers at $3,000 and $2,500 as well — and the operations worth building are the ones that still clear their costs there. Treat everything above your $2,500-gold breakeven as margin of safety and windfall, not as baseline income.

What "Making a Living" Means in This Book

This book takes the phrase seriously. The benchmark used throughout is a pre-tax operator income of **$75,000–$150,000 per year per working principal** — a real western-state living — achieved with capital a determined individual can actually raise (roughly $5,000 at the bottom rung to $500,000 at the top of what we cover). Everything is built around that question: what grade, what ground, what equipment, and what season length does it take to get there, and what are all the ways it goes wrong. The short version of the answer, developed over the next fourteen chapters: it is achievable, it is being done right now, and it is a genuine small

business with a genuine failure rate — closer to running an owner-operator logging or fishing operation than to either a hobby or a lottery ticket.

PART I · CHAPTER 2

The Business You Are Actually Entering

Small-scale mining is a seasonal, capital-light extraction business with commodity-price upside and geology risk. The people who make a living at it run it like a business. The people who lose money at it run it like a treasure hunt.

Before the geology and the economics, it is worth being clear-eyed about the shape of the trade. Mining for a living has more in common with owner-operator fishing, logging, or custom farming than with anything in an office: physically hard, seasonal, equipment-centric, weather-dependent, and paid entirely on production. There is no salary, and the ground does not care about your schedule. What it offers in exchange is autonomy, an outdoor life in some of the best country in America, a product with a guaranteed buyer at a transparent world price — no customers, no invoices, no receivables — and, right now, the best margins the trade has seen in generations.

The four rungs of the ladder

Almost everyone who succeeds climbs through some version of these stages, and almost everyone who fails skipped one.

Table 2.1 — The small-scale mining ladder (2026 dollars, gold at $4,045)

Rung	Typical setup	Capital in	People	Season	Realistic annual net range
1. Prospector / weekender	Pans, sluice, highbanker or small dredge; club claims or own 1–2 claims	$500–$8,000	1	20–50 days	–$3,000 to + $15,000
2. Part-time commercial placer	Owned claims, mini-excavator or rented iron, 10–30 yd/day plant	$25,000–$80,000	1–2	60–120 days	$10,000–$90,000
3. Full-time small placer op	Proven pay on Notice-level or permitted ground, excavator + 50–150 yd/day plant	$100,000–$500,000	2–4	100–170 days	$60,000–$400,000+
4. Small hardrock op	High-grade vein, small mill or toll milling, 5–20 tons/day	$150,000–$750,000	2–6	150–250 days	$50,000–$600,000+

The ranges are wide because grade is wide, and the bottom of every range is negative in practice even where the table shows a positive floor — a season can be lost to a permit delay, a broken excavator, or ground that sampled at twice what it ran. The single most important number in the table is the bottom of rung 1: **the cheapest education in this industry is a season spent proving you can find and recover gold before you buy iron**. A $5,000 year of sampling that stops you from spending $200,000 on barren gravel is the best return you will ever earn in mining.

Where the living actually comes from

Strip away the romance and a profitable small operation is three disciplines stacked on top of each other:

1. Proven grade before production. The winners mine gravel or rock whose grade they have measured with enough samples to trust; the losers mine hope. Every chapter of this book returns to this. At today's prices the bar is mercifully low — Chapter 9 shows breakeven placer grades around a tenth of a gram per yard for an efficient operation — but a tenth of a gram must still actually be there, yard after yard.

2. Cost per yard (or per ton) held down relentlessly. Revenue per yard is set by geology and the London price; cost per yard is set by you. The difference between a $10/yard operation and a $22/yard operation doing the same yardage on the same ground is the difference between a comfortable living and a bankruptcy, and it is made of unglamorous things: owned versus rented equipment run at high utilization, short haul distances, gravity-fed water, a plant matched to the excavator that feeds it, and maintenance done in the off-season rather than mid-July.

3. Legal ground with water. A surprising fraction of failed operations die of paperwork, not geology: claims with defective title, ground inside a withdrawal, a dredge season that never opened, a Notice that became a Plan of Operations and ate two years. Chapters 6 and 7 exist because land status and permits are where the most money is lost per hour of neglect.

> **THE HONEST ODDS**
>
> No agency tracks small-miner profitability, but the observable pattern from decades of the trade is roughly this: the large majority of recreational-tier participants never recover their equipment cost (and mostly don't mind — it's recreation). Of those who attempt commercial placer operation, perhaps a quarter to a half build something that reliably pays a living, and the failures cluster in year one, on unproven ground, with too much borrowed iron. Operations that survive three seasons tend to keep surviving — they have found repeatable pay, matched their costs to it, and learned their permits. At $4,000 gold the odds are meaningfully better than they were at $1,800, because the grade bar is less than half as high. They are still odds, not certainties.

The skills inventory

A one- or two-person mining operation has no departments to hide in. Before committing serious capital, an aspiring operator should honestly grade themselves — and their partner, if any — against this list, because every item below eventually presents its bill:

- **Equipment operation and field repair.** Excavator seat time, pumps, welding, hydraulic hoses, small diesel troubleshooting. Paying a mechanic $180/hour three hours from town converts profitable ground to losing ground faster than low grade does.
- **Practical geology.** Reading gravel — where pay concentrates, what bedrock does, why grade dies — and, for hardrock, recognizing vein structure and alteration. Chapter 3 is a working primer; field time with experienced miners is worth more.
- **Sampling discipline and simple statistics.** The nugget effect (Chapter 5) makes gold sampling genuinely treacherous; the operator who understands why one hot pan means almost nothing has an enormous edge.
- **Paperwork stamina.** Claims maintenance, county recordings, a Notice or Plan, water permits, a reclamation bond, quarterly fuel logs. Boring, cheap, and absolutely load-bearing.
- **Cash and bookkeeping.** A season's expenses land before a season's revenue. Operations die of empty fuel cards in August with gold still in the ground.

None of these require credentials. All of them can be learned — most cheaply at rung 1 and 2 scale, where mistakes cost hundreds instead of tens of thousands. The chapters that follow supply the knowledge that can be

put on paper: where gold is, how to secure it, what the numbers must show, and how to stay legal while extracting it. The seat time is yours to acquire.

PART II · CHAPTER 3

Gold Deposits of the West: A Working Geology

You do not need a degree to find payable gold. You need to know which half-dozen deposit types a small operator can actually work, what each looks like on the ground, and — just as important — which famous deposit types to walk away from.

Western gold occurs in a handful of recurring geological situations. Knowing them matters because each type dictates everything downstream: how you sample it, what equipment recovers it, what grade it needs to carry, and whether a two-person operation can work it at all. This chapter is a field-grade summary, biased deliberately toward what is minable at small scale.

Placer Gold — The Small Operator's Home Ground

Placer deposits are gold mechanically concentrated by water: eroded from lode sources upstream, moved during floods, and dropped wherever the water slowed or the riverbed trapped it. Gold is nineteen times denser than water and about seven times denser than gravel, so it behaves unlike everything around it — it works downward relentlessly and concentrates on **bedrock**, in cracks and crevices, behind riffle-like bedrock ribs, on the inside of stream bends, at the downstream ends of gravel bars, and below canyon constrictions where floodwaters lose velocity.

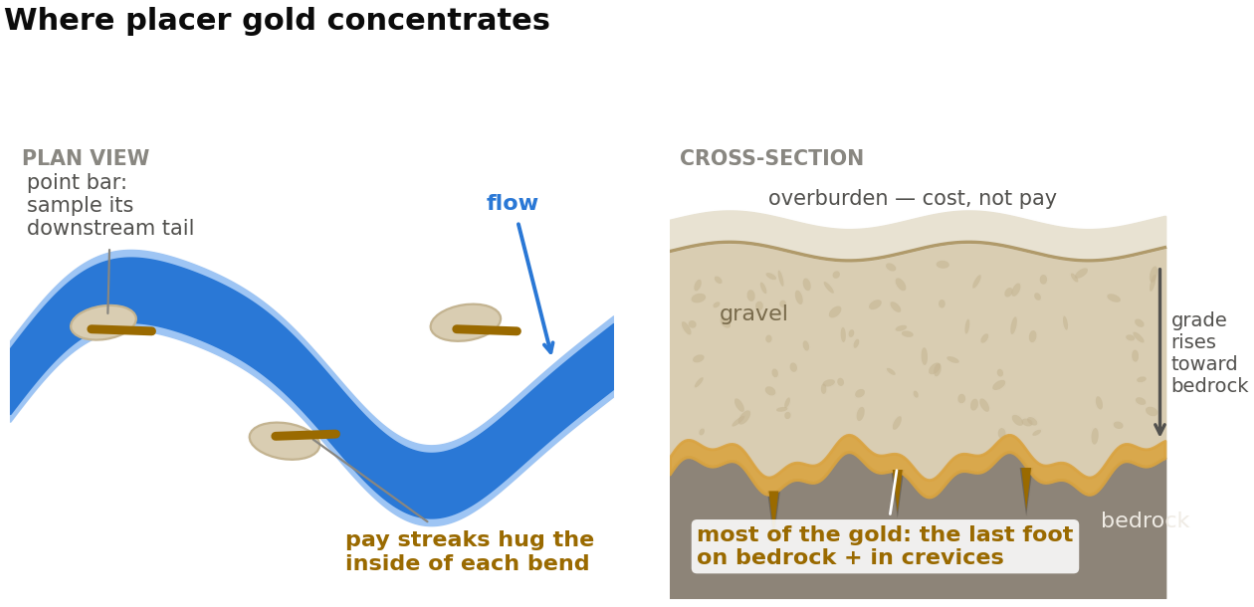

Figure 3.1 — Gold concentrates where water slows and density wins: on the inside of bends and point-bar tails in plan view, and overwhelmingly in the basal gravel and bedrock crevices in section.

The forms worth knowing:

- **Modern stream placers** — pay in and under the active channel. Richest on bedrock and in the first foot above it ("the pay streak"). Accessible with pans, sluices, dredges; regulated most heavily because it is in live water.
- **Bench (terrace) placers** — remnants of ancient channels perched on canyon walls, sometimes hundreds of feet above the modern stream. Dry workable ground, often barely touched because they required more moving of dirt than hand methods justified. **At modern prices with a mini-excavator, benches are arguably the best single opportunity class for small operators.**
- **Ancient (Tertiary) channels** — buried river systems, famous in the northern Sierra Nevada, often under lava caps. Fabulously rich historically; serious ones need drift mining or big stripping, but their eroding edges feed many modern streams.
- **Eluvial/residual placers** — gold weathered in place on hillsides below a vein outcrop, barely transported. Small, sometimes rich, easy to test with a shovel and a drywasher in desert country.
- **Desert placers** — alluvial fans and dry washes of Arizona, Nevada, southeastern California. Worked with drywashers or with trucked/recycled water. Poor sorting means erratic grade, but access and land availability are the best in the West.

One canyon, four generations of pay

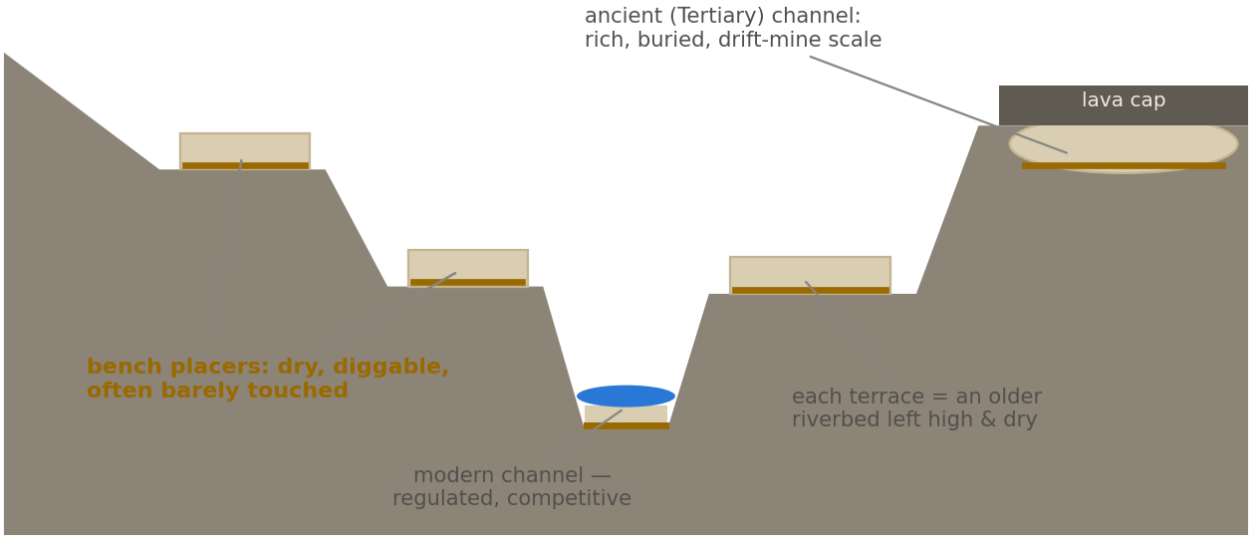

Figure 3.2 — A single canyon typically carries several generations of pay: the modern channel, perched bench placers from each older river level, and sometimes an ancient Tertiary channel high on the wall. The benches are the modern small operator's sweet spot.

READING A PAY STREAK

Pay is never uniform across a channel. It hugs the inside of bends, the downstream tails of bars, and above all the bedrock surface — soft, fractured bedrock (schist, slate) traps far more gold than smooth granite. Grade in the top gravel is routinely a tenth of the grade in the last foot on bedrock. Every sampling plan and every mining plan in Part IV is built around this vertical concentration: **you make your money cleaning bedrock, and you spend your money moving the overburden to reach it.**

Lode types a small operation can mine

Orogenic (mesothermal) quartz veins. The classic "gold-quartz vein" of the Mother Lode, Grass Valley, the Klamath–Trinity country, the Idaho batholith margins, and Montana's older districts. Quartz, often with carbonate and a few percent pyrite or arsenopyrite, in steep veins following faults through metamorphic rock. Grades are famously erratic — barren quartz for tens of feet, then an ore shoot running an ounce to the ton. Persistent with depth, which is why they supported underground mines for a century. For a small operator: the most forgiving lode type, because the gold is mostly **free-milling** (recoverable by crushing and gravity — no chemistry), and thousands of small past producers exist with workings already opened.

Low-sulfidation epithermal veins. Volcanic-hosted bonanza veins — Comstock, Tonopah, Oatman, Bodie, much of the Walker Lane in Nevada. Banded quartz-chalcedony veins with silver, formed shallow; grade concentrates in discrete high-grade shoots that can be spectacular (multi-ounce) but die quickly along strike and at depth. Gold is fine-grained; recovery is harder than orogenic ore, and much of it carries significant silver — relevant at $58 silver. Good small-scale targets where old stopes left pillars, dumps, and un-mined shoot extensions.

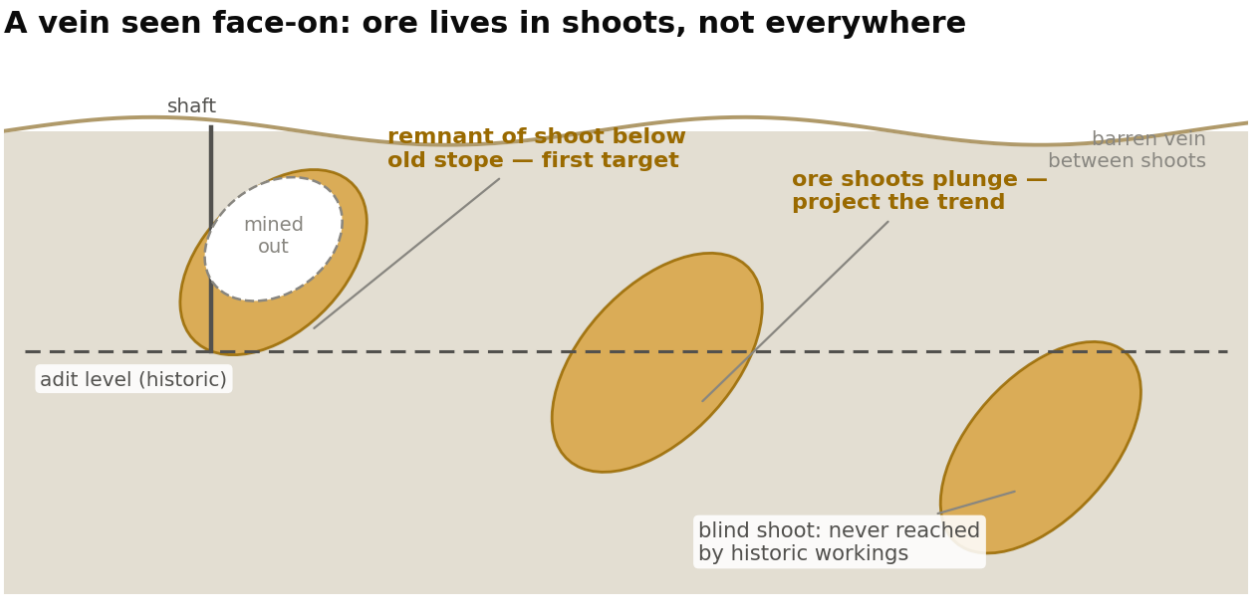

Figure 3.3 — A vein in longitudinal section (looking at the vein plane face-on). Payable ore concentrates in plunging shoots separated by barren vein; historic mines stoped what they could reach from their workings. Remnants below old stopes and shoots beyond the last workings are the small operator's targets.

High-grade "pocket" gold. Southwestern Oregon and parts of the Sierra foothills are famous for near-surface pockets — small volumes of decomposed vein material carrying ounces to hundreds of ounces within a few cubic yards, found by systematic surface tracing ("pocket hunting"). A legitimate, low-capital, high-variance small-miner specialty.

What to leave alone. Carlin-type deposits (the invisible-gold giants of northern Nevada) require cyanide leaching at scale — chemically and financially out of reach. **Porphyry** systems are bulk-tonnage, cents-per-ton margin businesses. **Massive sulfide and refractory ores** (gold locked in sulfides) defeat gravity recovery; if roasting or pressure oxidation is needed, it is not a small-scale project. The quick field test matters: if the historical record or your assays show the district's gold was recovered by amalgamation or gravity, a small mill can work it; if the old mill on site had a cyanide plant or roaster, be very cautious.

Five rules of thumb worth a geology course

- **Gold is where gold was.** Proximity to a documented past producer is the strongest single predictor available to you. Virgin discoveries happen, but the working odds favor the margins, extensions, dumps, and tailings of known systems.
- **Placer points uphill to lode.** Coarse, rough (unworn) placer gold means a nearby source; fine flat flakes have traveled. Tracing rough gold up a drainage to its source vein is the oldest exploration method in the book, and it still works.
- **Structure controls ore.** Veins live in faults; ore shoots live where faults bend, branch, or intersect. On the ground, that means paying attention to where a vein changes direction or width — that is where the old-timers' stopes cluster, and where remaining shoots hide.
- **Iron stains are breadcrumbs.** Weathered pyrite leaves rusty gossan and iron-stained quartz. In gold country, rusty quartz float is always worth panning the soil below.
- **The dumps tell the truth.** A past producer's waste dump and tailings record what grade they mined and what they lost. Sampling dumps is cheap, legal on your own claim, and at $4,045 gold, many dumps that were waste at the time now assay above a small mill's cutoff.

PART II · CHAPTER 4

Districts That Still Pay

The West has hundreds of historic districts. These are the regions where small operators are realistically finding open ground, workable grade, and manageable regulation in 2026 — with the honest trade-offs of each state.

A district recommendation is really three judgments stacked together: is the gold there (geology), can you get ground (land status), and will the state let you work it (regulation)? The rankings below weigh all three, which is why famously golden California sits mid-list and Arizona outranks its geology. Land status changes constantly — verify everything in Chapter 6's databases before acting.

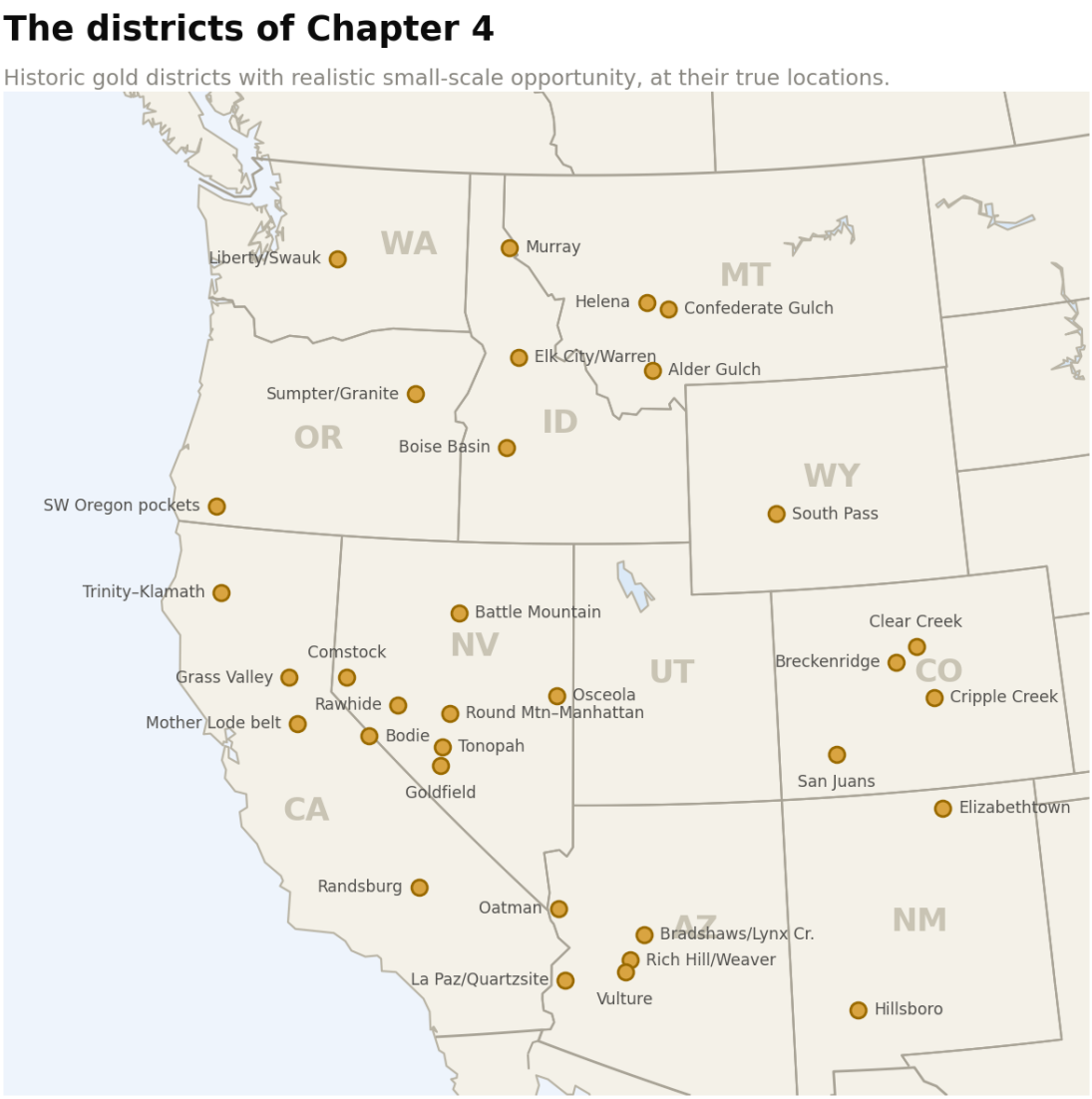

Figure 4.1 — The districts discussed in this chapter, plotted at their true locations. Every dot is a documented historic producer or district with realistic small-scale opportunity in 2026.

Nevada — the most gold, the friendliest rules

Nevada produces roughly three-quarters of US gold and has the West's most mining-accustomed agencies, plus vast open BLM land. The majors own the Carlin and Cortez trends; the small operator's Nevada is elsewhere: the **Walker Lane belt** (epithermal veins and their placers — Rawhide, Aurora, Bodie's Nevada side, Goldfield, Tonopah margins), the placer districts of **Battle Mountain, Round Mountain–Manhattan, and Osceola**, and hundreds of small vein districts in ranges across the state. Water is the constraint — most Nevada placer is dry-country mining with recycled water or drywashing. Silver-rich epithermal dumps and tailings are a distinctive Nevada opportunity at $58 silver.

Arizona — access and season

Geologically less endowed than Nevada for gold, but the practical package is excellent: enormous open BLM and State Trust acreage, a winter-friendly season (mine the desert October–April while northern operators are frozen out), an established small-scale placer culture, and dry-wash methods that sidestep most water regulation. Districts: **La Paz/Quartzsite placers, the Bradshaw Mountains** (hundreds of small orogenic veins with placers below — Lynx Creek is a famous producer), **Rich Hill/Weaver district** (coarse nugget ground), **Oatman** (epithermal), and the **Vulture** district. Grades are modest; costs are low; many successful "snowbird" commercial operators pair an Arizona winter season with a northern summer season.

Idaho — the sleeper

Arguably the best grade-to-competition ratio in the West. The **Boise Basin** (Idaho City–Placerville) was the richest placer district in the state's history and still carries extensive bench and channel gravels; the **Salmon River country** (Elk City, Dixie, Florence, Warren) has both placers and small orogenic lodes; **Murray/Prichard Creek** in the Panhandle drains the Coeur d'Alene margins. Suction dredging operates under a state one-stop permit with seasonal windows. Much ground is National Forest, so 36 CFR 228 procedures (Chapter 7) apply, and winters shorten the season — but claim availability and grade remain genuinely good.

Oregon — pocket country and southern placers

Southwestern Oregon (**Josephine, Jackson counties** — Applegate, Illinois, Rogue drainages) offers orogenic and pocket gold plus extensive placers; **eastern Oregon's Blue Mountains** (Sumpter, Granite, Greenhorn districts) have deep placer ground and small lodes with less regulatory pressure than the salmon-bearing southwest. Oregon's in-stream rules have tightened hard (Chapter 7); the smart Oregon play is bench and upland placer plus lode, not in-stream dredging.

Montana — real gold, real winters

Alder Gulch/Virginia City, Helena's Last Chance district, Confederate Gulch, Libby Creek, and dozens of small vein districts. Good bench placer remains; the state runs a small-miner exclusion (SME) system that keeps sub-5-acre operations reasonably streamlined. Short season, strong local mining tradition, and less claim-market froth than the famous states.

California — the most gold left, the hardest rules

The Sierra foothills, the Klamath–Trinity country, and the northern deserts hold, by most estimates, more remaining placer gold than any other state — the Mother Lode system shed gold for forty million years. But: **suction dredging in live streams has been effectively prohibited statewide since 2009**, in-stream permissions

are the nation's most restrictive, and state environmental process (CEQA, SMARA reclamation plans through counties) adds cost and time. What still works in California: **dry-land bench and terrace mining with full permits, desert placers in San Bernardino/Kern/Imperial counties, dump and tailing reprocessing on patented ground, and small lode operations** on the thousands of historic vein occurrences. California rewards operators with paperwork stamina; casual in-stream mining is largely closed.

Colorado, Washington, Wyoming, New Mexico — Situational

Colorado: excellent lode geology (Cripple Creek margins, San Juans, Clear Creek country) but high elevation, short seasons, heavy recreational claim competition near the Front Range, and much historic ground is patented (private — buy or lease, Chapter 6). **Washington**: decent placers (Liberty, Swauk) under increasingly restrictive in-stream rules. **Wyoming**: limited gold (South Pass) but easy land. **New Mexico**: small districts (Hillsboro, Elizabethtown, Golden) with Arizona-like desert logistics.

Table 4.1 — State scorecard for the small operator (2026)

State	Geology	Open ground	Regulatory climate	Season	Best small-scale play
Nevada	Outstanding	Outstanding	Favorable	Long (water-limited)	Epithermal veins, dry placers, old dumps
Arizona	Good	Outstanding	Favorable	Winter-long	Desert placers, Bradshaw veins
Idaho	Very good	Good	Moderate	May–Oct	Bench placer, small lode, permitted dredging
Oregon	Very good	Good	Tightening	May–Oct	Pocket gold, bench placer, E. Oregon districts
Montana	Good	Good	Moderate	Jun–Oct	Bench placer, small lode
California	Outstanding	Moderate	Most restrictive	Long	Dry-land placer, lode, patented-ground projects
Colorado	Very good	Moderate	Moderate	Short	Lode leases on patented ground

PART II · CHAPTER 5

Exploration on a Small Budget

Professional exploration is a funnel: cheap information first, expensive information only where the cheap information says to spend it. A small operator can run the same funnel for a few thousand dollars — and must, because production capital spent on unproven ground is the industry's leading cause of death.

Stage 1 — The desktop sweep (cost: your evenings)

Every project should begin at a computer, and the order matters:

- **USGS MRDS** (mrdata.usgs.gov/mrds) — the federal database of ~300,000 mineral occurrences. Query your target county for gold; the records classify each site as occurrence, prospect, or **past producer**, with production size where known. Focus ruthlessly on past producers and their surroundings. Download the data and plot it in QGIS (free) over topography.
- **BLM MLRS** (mlrs.blm.gov) — the mining claim system of record. Map which ground around your targets is already claimed, what lapsed recently (lapsed claims are free to relocate), and what has been continuously held for decades (someone believes in it).
- **Surface management maps** (blm.gov/maps) — is the land BLM, Forest Service, state, private, or withdrawn? Ten minutes here saves months. Chapter 6 covers the traps.
- **Geologic maps** (ngmdb.usgs.gov) — overlay MRDS points on mapped geology and the pattern usually jumps out: producers strung along one fault zone, one contact, one formation. That structure, projected beyond the last producer, is your target.
- **The old literature** — USGS Professional Papers and Bulletins (pubs.usgs.gov) and state survey reports describe districts mine-by-mine, with grades, vein widths, and why each mine closed. "Closed by the 1942 gold mine shutdown order" or "abandoned when the price fell" reads very differently at $4,045 than "workings flooded and ore pinched." State surveys: NBMG (Nevada), AZGS (Arizona), IGS (Idaho), DOGAMI (Oregon), MBMG (Montana), CGS (California/Colorado).
- **Imagery** — Google Earth's historical slider plus USGS TopoView's old topo sheets reveal workings, ditches (old-timers built water conveyance only to pay gravel), tailings, and roads that the forest has swallowed.

Stage 2 — Reconnaissance (cost: fuel, a season of weekends)

Ground-truth the desktop list. Walk the workings, photograph and GPS everything, and sample cheaply: pan the streams below each target (a systematic pan line every few hundred yards up a drainage localizes the source), sample dumps and any exposed vein material, note water, access, and slope. The tools are a pan, a shovel, a 5-gallon-bucket classifier, a hand lens, sample bags, and a notebook discipline you never break: **every sample gets an ID, a GPS point, and a written estimate before the assay comes back.**

The nugget effect — why gold sampling lies

Gold's extreme value density means a deposit running a profitable 0.5 g/yd might carry one small nugget per several pans of gravel. Most individual pans from genuinely good ground are therefore nearly empty, and one lucky pan from poor ground can show spectacular color. Single samples mean almost nothing in either direction. The defenses: take **many small samples over few large ones**, sample in a consistent grid (not where it "looks good"), weigh recovered gold rather than eyeballing it, and let only *averages over dozens of samples* make spending decisions. For lode rock, the same applies to assays: five samples across a vein tell you more than one rich grab sample ever can — and dump/grab samples systematically overstate minable grade.

Stage 3 — Systematic sampling (cost: $2,000–$15,000)

Placer: the objective is a grade-and-depth model of the gravel body. On bench ground, dig test pits on a grid — by hand, or far better with a day or two of rented mini-excavator time ($400–600/day) — logging each pit in one-foot layers, processing a measured volume per layer through a small sluice or recirculating plant, and weighing the gold from each. Twenty measured pits across a bench produce a defensible average grade, an overburden ratio, and a bedrock map — the three numbers Chapter 9's economics run on. Expect the pattern: thin lean top gravel, modest middle, and most of the gold in the basal few feet.

Lode: channel samples — a continuous chip line cut across the full vein width, bagged per interval — at regular spacings along every accessible exposure and working, plus dump samples (noting they are biased). Fire assay is the standard: roughly **$30–50 per sample** with prep at commercial labs (ALS, Actlabs, and regional assayers publish fee schedules; 2026 pricing runs about $35–55 all-in per Au fire assay with sample prep). A 60-sample program — enough to outline whether an ore shoot exists — costs $2,500–3,500 in assays. Never skip assays to save money: at these prices, one season of mining is worth $100,000+; $3,000 of certainty is the cheapest insurance available.

Stage 4 — The decision

The funnel ends in a simple discipline. Compute the deposit's average grade from your systematic samples, apply the recovery and payability haircuts of Chapter 8, and compare against the cutoff for your intended operation with a margin: **proceed only if sampled grade ≥ 2× your breakeven grade.** The 2× margin absorbs the sampling error, the mining dilution, and the ground that doesn't repeat. If the ground clears the bar, Chapters 6 and 7 (secure it, permit it) come next; if it doesn't, the funnel did its job for a few thousand dollars, and you feed the next target into Stage 1. Serious small operators keep the funnel loaded with three to five prospects at all times — exploration is not a phase, it is a permanent department of the business.

PART III · CHAPTER 6

Claims: Getting Ground to Stand On

The General Mining Law of 1872 remains the small miner's charter: any citizen may stake a claim to valuable minerals on open federal land and hold it for about $200 a year. This chapter is how to do that correctly — and how to avoid buying someone else's mistake.

What a mining claim is

An unpatented mining claim is a property right to the *minerals* in a parcel of open federal land, plus the right to use the surface as reasonably necessary for mining. It is not ownership of the land — you cannot build a cabin, exclude hunters, or homestead. It is, however, a real property interest: it can be sold, leased, inherited, and mortgaged, and it holds against everyone including the government so long as you maintain it and the land was open when you located it.

Two kinds matter, and the kind must match the deposit:

- **Lode claims** — for veins and mineralized rock in place. Maximum 1,500 feet along the vein by 600 feet wide (about 20.7 acres).
- **Placer claims** — for loose alluvial deposits. 20 acres per individual locator; an association of up to eight people may hold up to 160 acres in one claim.

A placer claim over a vein (or vice versa) is invalid as to that deposit — a classic title defect in claims offered for sale.

The two claim shapes — match the claim to the deposit

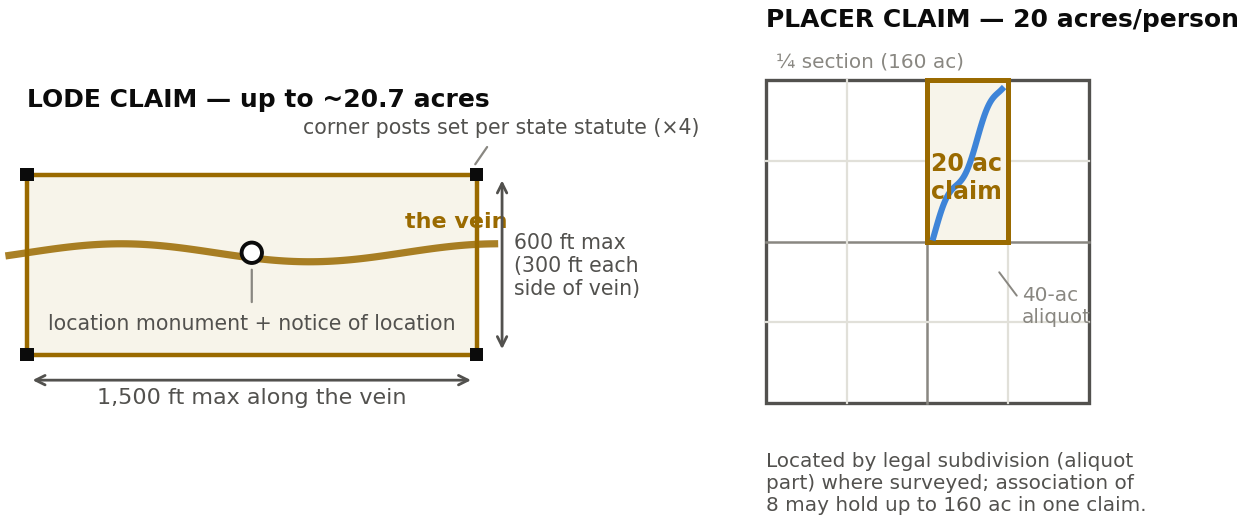

Figure 6.1 — The two claim shapes. A lode claim is a 1,500' × 600' rectangle oriented along the vein, marked by a location monument and corner posts; a placer claim is 20 acres per locator, tied to the PLSS survey grid where the land is surveyed.

The 2026 cost of a claim

Table 6.1 — Federal claim fees (BLM schedule in effect since Sept 1, 2024; verify current year at blm.gov)

Item	Amount	Notes
Location fee (one-time, at filing)	$49	Per claim
Processing fee (one-time, at filing)	$25	Per claim
Initial maintenance fee (at filing)	$200	Per lode claim; per 20 acres for placer
Total to record a new lode claim	**$274**	Plus county recording, typically $10–$40
Annual maintenance fee thereafter	$200/yr	Due every Sept 1; per 20 acres for placer
Small-miner waiver alternative	$15 filing	If you hold ≤10 claims nationwide: file the waiver and perform $100/claim/yr of assessment work instead of paying $200

A serious placer project might hold four to six 20-acre claims (a half-mile of creek plus benches) — roughly $1,600 to establish and $1,200/year to hold, or under $700/year with the small-miner waiver and documented assessment work. Ground control is the cheapest part of this business. **The fatal, unforgiving rule: the maintenance fee or waiver must be received by September 1 every year. Miss it and the claim is void by operation of law** — no grace, no appeal — and anyone may relocate your ground the next morning. Calendar it twice.

How to stake a claim, step by step

1. **Confirm the land is open** (Chapter 5's desktop sweep): federal land, not withdrawn (no wilderness, national monument, park, military, or segregation), and not already validly claimed on MLRS. Where MLRS is ambiguous, check the county recorder and walk the ground looking for monuments and location notices.
2. **Locate on the ground.** Erect a location monument, post the notice of location (claim name, locator, date, acreage, tying the claim to a natural landmark or PLSS corner), and set corner posts per the state's statute — each state has specific monument requirements (Nevada: 4"×4" posts or stone mounds at corners; check your state's code).
3. **Record twice.** File the location certificate with the **county recorder** (state deadlines: commonly 30–90 days from location) *and* with the **BLM state office** within 90 days, with the fees above. Both filings are mandatory; either one missed is fatal.
4. **Map it well.** A GPS'd corner map filed with your certificate prevents the boundary disputes that consume neighbors of sloppy locators.

Buying claims instead — and the due-diligence checklist

Claims are bought and sold freely — listings run from $2,000 for speculative 20-acre placers to six figures for claims with proven reserves and permits. Buying can be rational: it buys sampling history, existing permits, and

sometimes equipment. But the claims market has more misrepresentation per listing than any real estate market in America. Before money moves:

- **Title:** Pull the claim's complete MLRS serial register page: is it active, are fees current, is the chain of title from locator to seller documented by recorded deeds? Buy by **quitclaim deed**, recorded with both county and BLM (transfer filing fee applies).
- **Land status:** Re-verify open status yourself. Claims located inside pre-existing withdrawals are void regardless of how long fees have been paid — BLM cashes maintenance checks without validating claims.
- **The seller's data:** Assay sheets and "average grades" in listings are marketing until you replicate them. Sample the ground yourself under an access agreement before closing, on your own grid, with your own lab. Walk away from any seller who resists independent sampling — and from any listing whose photos of gold, or grades, do not state exactly where and how the samples were taken. Salting (planting gold in samples or ground) is a 150-year-old industry and it is not extinct.
- **Burdens:** Ask specifically about royalties reserved in prior transfers, existing BLM/USFS case files (an abandoned Notice with unfinished reclamation becomes your problem), and unbonded disturbance.

WHERE TO SHOP

Chapter 18 presents the current verified listings at **MountainManMining.com** — the publisher's brokerage — with title work already run through exactly this checklist. The due-diligence standards above apply to those listings too, and we'll be the first to say so.

PATENTED CLAIMS AND PRIVATE GROUND

A **patented** claim is former claim land conveyed to full private ownership decades ago (patenting has been suspended since 1994). Much of the best historic lode ground — Colorado and California especially — is patented. You acquire it like any real estate: purchase, or more commonly a **mining lease with royalty** (typical small-scale terms: modest annual advance payments against a 2–10% net smelter return royalty). Leasing patented ground can be the fastest legal route to a lode operation: no 1872-law validity questions, sometimes existing workings, and on private land the federal surface-management process of Chapter 7 does not apply (state rules still do). The same lease logic applies to private ranch land over placer gravels.

State Lands and Special Cases

State trust lands (notably Arizona's large holdings) are leased through state land departments under separate mineral permit systems — often workable, never under the 1872 law. Tribal lands require tribal and BIA consent and are effectively closed casually. And note the withdrawal trend: recent decades have seen large areas withdrawn (monuments, sage-grouse areas, river corridors). Withdrawals honor *valid existing claims*, which makes older maintained claims inside withdrawal boundaries uniquely valuable — and worth buying rather than trying to stake.

PART III · CHAPTER 7

Permits, Bonds, and Staying Legal

Permitting is where small mining ventures most often stall — and where well-run ones quietly build their moat. The system is layered: federal surface rules, state environmental rules, and water law all apply at once. Learn the thresholds and design your operation to fit inside the fast lanes.

The federal layer: three tiers of disturbance

On BLM land, surface management runs under **43 CFR 3809**; on National Forest, **36 CFR 228**. Both use the same logic:

Table 7.1 — Federal surface-management tiers

Tier	Applies to	Process	Timeline	Bond
Casual use	Negligible disturbance: panning, sluicing, metal detecting, hand digging; no mechanized earth-moving, no chemicals	None — no notification required (BLM). USFS may require a simple contact	Immediate	None
Notice (BLM)	Exploration ≤5 acres of disturbance	File Notice with field office; complete within 15 days unless deficiencies; no NEPA analysis	Weeks	Full reclamation cost
Plan of Operations	Mining beyond casual use; any operation >5 acres; special-status lands	Plan + NEPA review (EA, occasionally EIS); public comment	Months to years	Full reclamation cost

Two design implications follow. First, **the Notice tier is the small explorer's fast lane** — bulk sampling and trenching programs under 5 acres move quickly on BLM ground. Note that a Notice covers *exploration*; production mining, even small, formally needs a Plan on BLM land. In practice many small placer operations run as a modest Plan of Operations with an Environmental Assessment — budget **6–18 months and $5,000–$50,000** (consultant help, baseline surveys) for a small placer Plan, longer where cultural or biological surveys get complicated. On Forest Service ground the equivalent sequence is a Notice of Intent, escalating to a Plan of Operations if the District Ranger finds likely significant disturbance. Second, **design to the thresholds**: phased mining that discloses the full project honestly but disturbs and reclaims sequentially keeps bonds small and relations good. (Deliberately splitting one project into fake little pieces to dodge review is illegal — the line is disclosure.)

Bonds

Every Notice and Plan requires a **financial guarantee covering the full estimated cost for the government to reclaim your disturbance** — earthwork, regrading, seeding, sometimes monitoring. Small placer bonds commonly calculate to **$2,000–$8,000 per disturbed acre**; a tight two-acre operation might post $5,000–$15,000. The bond is not a fee — it returns when you reclaim your own disturbance (which a placer operator does anyway, concurrently, because reclaiming as you go is cheap with the excavator already on site). Several

states run bond pools that let small miners pay a fraction rather than post the whole amount. Budget the bond as parked working capital.

The water layer — where placer mining is really regulated

Everything that touches a stream triggers water law, and this — not the mining law — is what actually constrains western placer mining:

- **Clean Water Act §404/§402:** discharging dredged or fill material into waters of the US needs Corps of Engineers authorization; processing discharge needs an NPDES permit, usually a state general permit for small miners.
- **State suction-dredge regimes (2026 status): California** — dredge permits suspended since 2009; in-stream suction dredging remains effectively prohibited. **Oregon** — permitted (DEQ 700-PM general permit) but with substantial exclusions in salmonid habitat and seasonal windows; reform pressure continues. **Washington** — sharply restricted in critical habitat after mid-2020s rule changes. **Idaho** — allowed with a state one-stop permit in designated waters and seasons; the most workable dredge state. **Nevada/Arizona** — few perennial streams; dry methods dominate and face far less restriction. Always pull the current year's rules — dredge law changes almost annually.
- **Water rights:** Using water — even recirculated — can require a water right or temporary use permit from the state engineer, in most western states. Buying or leasing a small irrigation right, or trucking water to a recirculating plant, are standard solutions. Ask early; nothing stops a season like a water-rights protest.

The state mining layer

Each state adds a reclamation permit tier of its own; most have a streamlined small-miner category (Montana's Small Miner Exclusion, Idaho's placer mining permits, Nevada's small-operation reclamation permits, California's SMARA through county lead agencies — the heaviest of the set). Fees are modest; the work is paperwork and a reclamation plan. Where an operation employs anyone, **MSHA** jurisdiction attaches (Part 46 training plans for surface metal mines — new-miner and annual refresher training, hazard reporting); a genuinely one-person operation has minimal practical exposure but formally remains a mine, and adding even one helper brings training and recordkeeping duties. Take the free MSHA small-mine consultation — they are more helpful to small operators than their reputation suggests.

> **The permitting playbook that works**
>
> (1) Visit the field office *before* filing anything — walk in with your map and ask "how would you like to see this proposed?"; the specialist who processes your Notice would rather shape a good application than reject a bad one. (2) Overshoot on reclamation commitments — concurrent reclamation costs little and buys years of goodwill. (3) Keep every approval, log, and inspection in one binder; agencies trust operators whose paper is instant. (4) Join the local small-miners association — the institutional memory about which offices want what is worth the dues many times over.

Timeline reality

From raw ground to legal production: **casual-use prospecting, immediately; a sampling program under Notice, one to three months; a small placer production operation, commonly 6–18 months** including state permits, bond, and water arrangements; small lode with a mill, similar on patented ground, longer on federal. Fold

this into the business plan: the standard successful sequence is to spend the permitting year sampling under casual use/Notice (Chapter 5), so the ground is proven the day the production permit lands.

PART IV · CHAPTER 8

The Arithmetic of Ore: Cutoff Grades

One equation decides whether ground pays. Learn it cold, run it honestly, and half the fatal mistakes in this industry become impossible for you to make.

The equation

Ground pays when the metal you can *sell* from a unit of material exceeds the cost to mine and process that unit. Three haircuts stand between in-ground gold and money, and forgetting any of them is how optimists go broke:

- **Recovery** — the fraction of contained gold your equipment actually catches. Well-run placer plants: 85–95% of the gold that is catchable at their screen size. Small gravity mills on free-milling ore: 75–90%.
- **Payability** — the fraction of recovered metal value the buyer pays. Raw placer gold is typically 85–92% pure, and refiners charge treatment and assay fees; net payability of **92–95% of contained value** is a good planning number for clean gold sold to a refiner (worse for small lots to local buyers — Chapter 11).
- **Dilution** — the waste rock that inevitably rides along with ore in mining, lowering the grade of what actually goes through the plant. Placer: modest if you mine in benches. Narrow-vein lode: severe — a 12-inch vein mined at 30-inch width has diluted its grade by more than half before the mill ever sees it.

Putting numbers to it at today's price: gold at **$4,045/oz** is $130.05 per gram. A placer operation recovering 90% and paid 93% nets **about $109 per in-ground gram** (roughly $3,385 per in-ground ounce). A small gravity mill at 85% recovery and 96% payability nets **about $106 per gram-per-tonne, per tonne milled**. Those two numbers — call them your *net gram values* — convert any cost estimate directly into a breakeven grade:

> **CUTOFF GRADE = COST PER UNIT ÷ NET VALUE PER GRAM**
>
> **Placer:** at $16 per yard all-in operating cost, cutoff = 16 ÷ 109 ≈ **0.15 g/yd³** (about 1/200 oz). **Lode:** at $300 per tonne all-in, cutoff = 300 ÷ 106 ≈ **2.8 g/t** (about 0.09 oz/ton). Material at cutoff earns zero — it pays the bills and nothing else. **Plan production on ground grading at least twice cutoff**, and treat everything between 1× and 2× as bonus yardage you take opportunistically while you're there.

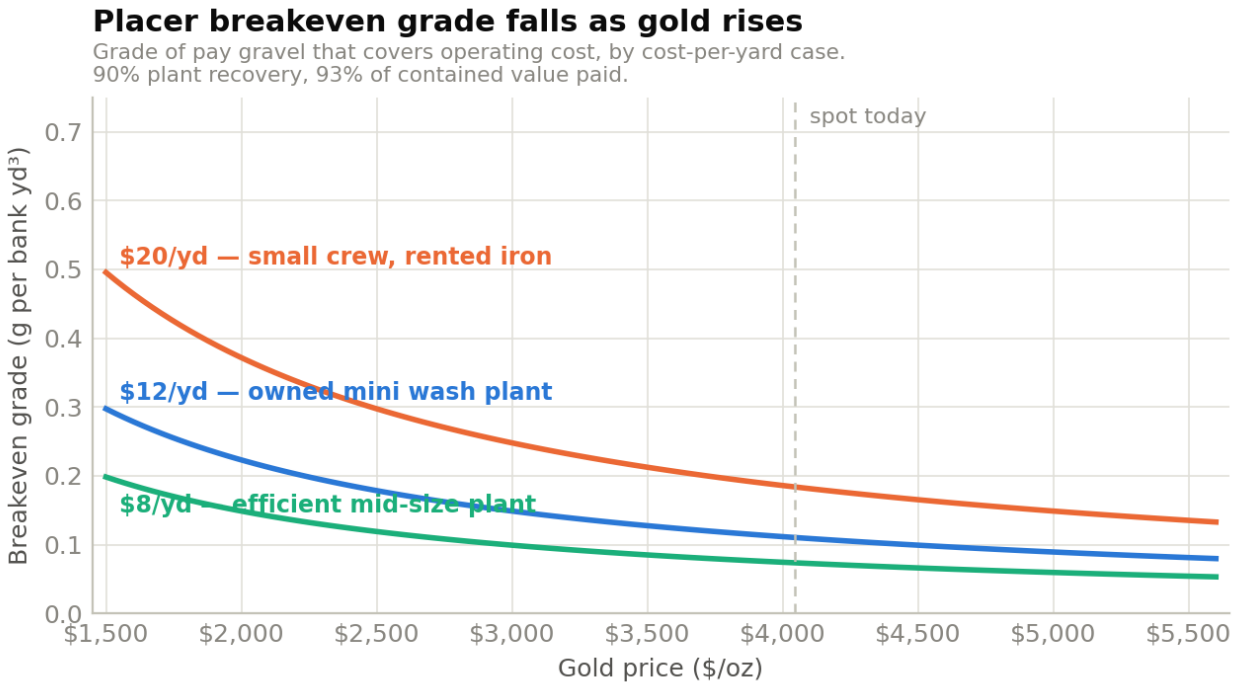

Figure 8.1 — Placer breakeven grade versus gold price for three operating-cost cases. At today's spot, even a high-cost small crew breaks even below 0.2 g/yd — ground the 1970s would have laughed at.

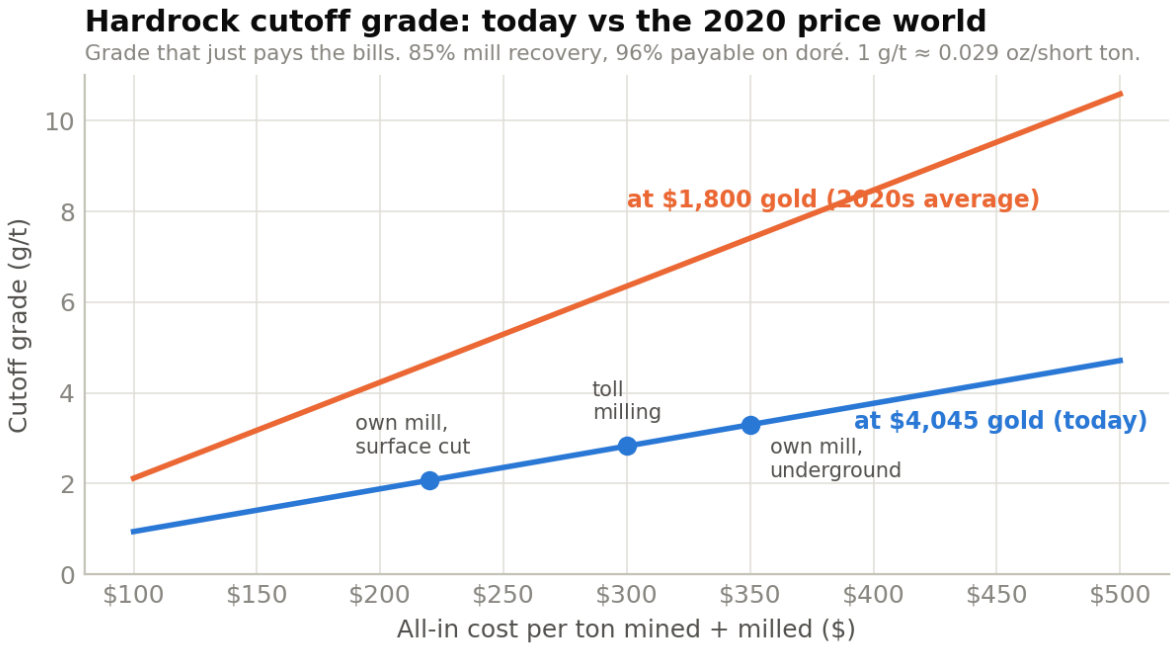

Figure 8.2 — Hardrock cutoff grade versus all-in cost per ton, at today's price and at the 2020s average. The price move cut the grade bar by more than half across every cost structure.

Sensitivity — carry these three numbers

Table 8.1 — Net value per in-ground gram at various gold prices (placer case: 90% recovery × 93% payable; lode case: 85% × 96%)

Gold price	Placer net $/g	Lode net $/(g/t·t)	Placer cutoff @ $16/yd	Lode cutoff @ $300/t
$2,500	$67	$66	0.24 g/yd	4.6 g/t
$3,000	$81	$79	0.20 g/yd	3.8 g/t
$4,045 (today)	$109	$106	0.15 g/yd	2.8 g/t
$5,000	$135	$131	0.12 g/yd	2.3 g/t

Read the table as a stress test. An operation whose ground grades comfortably above the $2,500 *row* is robust to a severe gold correction; one that only works on today's row is a leveraged bet on the price. Since January 2026 the market has already demonstrated a 28% drawdown — build to the $2,500 row and let higher prices be your bonus, not your survival condition.

Units — the trap that eats beginners

Placer grade is quoted per **bank cubic yard** (in-place gravel, before digging fluffs it ~25%); lode grade in grams per metric tonne, while older US reports use troy ounces per short ton (**1 opt = 34.28 g/t**). Old reports also quote dollar grades in the gold price of their day — "$8 gravel" in a 1935 bulletin is gravel at $35 gold, i.e. about 0.23 oz (7 g) per yard, which is spectacular ground worth roughly $760 a yard today. Appendix D holds the conversion tables; recompute every historical grade before it excites you.

PART IV · CHAPTER 9

Placer Economics: From Highbanker to Wash Plant

Placer is the natural entry into commercial mining: capital scales smoothly from a $2,000 highbanker to a half-million-dollar plant, and every tier can pay at today's prices if — only if — the grade is proven first.

The equipment ladder and what it really costs

Table 9.1 — Placer equipment, typical 2026 prices (new; used commonly 50–70%)

Class	Throughput	Price	Notes
Pan, sluice, classifiers	<1 yd/day	$100–$400	Sampling tools forever, income never
Highbanker / power sluice (Keene Mini Max class)	1–3 yd/day	$800–$1,600	One person, portable
Highbanker/dredge combo (2–3")	2–6 yd/day	$2,600–$4,000	The versatile weekender rig
Suction dredge 4"	3–8 yd/day	$5,300–$6,500	Where legal — check Ch. 7 first
Suction dredge 5–6"	6–15 yd/day	$9,000–$20,000	Two-person rigs; permit-dependent
Small trommel/recirculating plant	5–15 yd/hr	$15,000–$60,000	Pairs with mini-excavator
Mid wash plant (50–100 yd/hr class)	50–100 yd/hr	$120,000–$300,000	Needs excavator/loader + water system
Mini-excavator (3–5 t)	—	$40,000–$75,000 (rent $2–4k/mo)	The bench miner's workhorse
Excavator (20 t, used)	—	$60,000–$130,000	Feeds a 50–150 yd/hr plant
Pumps, pipe, settling ponds, fuel storage	—	$8,000–$40,000	Chronically under-budgeted

Two buying rules pay for themselves. **Match the plant to the digger:** a plant that can eat 100 yards an hour fed by an excavator that digs 40 is capital asleep; the reverse burns fuel idling. **Buy the recovery system, rent the earthmoving** in year one — used excavators hold value and rental fleets are everywhere, but a plant with poor fine-gold recovery silently donates 20% of your season to the tailings pile.

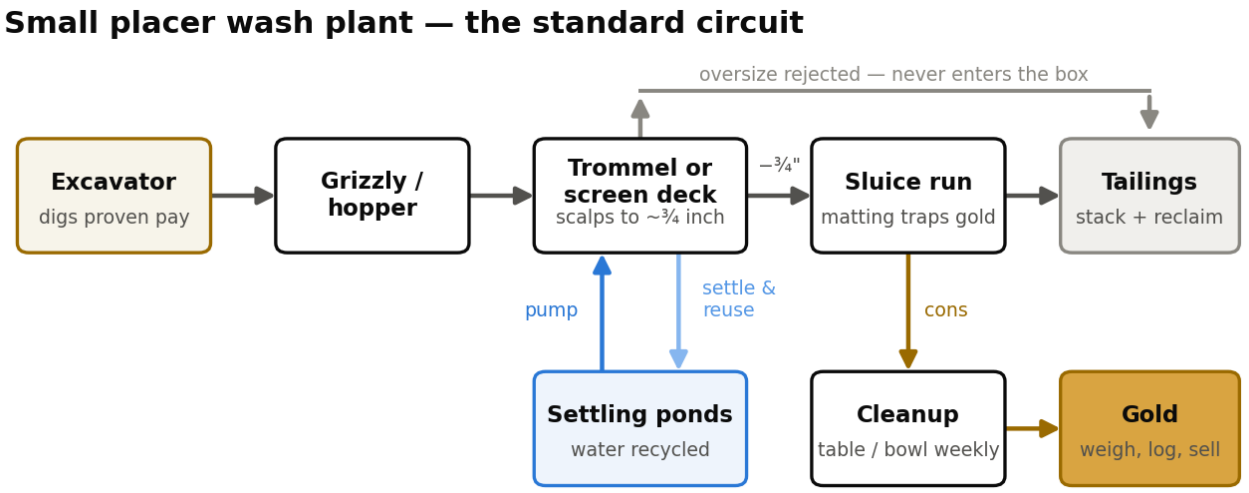

Figure 9.2 — The standard small placer circuit. Screening ahead of the sluice and a recycled-water pond loop are the two highest-leverage design choices; the cleanup line (concentrates to table or bowl) is where the season's gold becomes metal in hand.

Operating Cost per Yard — The Number You Control

Table 9.2 — Representative daily operating budgets (2026)

Item	Weekender (5 yd/day)	Mini plant + mini-ex (50 yd/day)	Mid plant + 20t ex (250 yd/day)
Fuel	$25	$180	$850
Labor (incl. owner draw at market)	—	$450	$2,100
Equipment (depreciation/rental/finance)	$20	$200	$800
Maintenance & wear parts	$10	$70	$300
Water, permits amortized, misc	$5	$50	$150
Total per day	**$60**	**$950**	**$4,200**
Cost per pay yard	**$12.00**	**$19.00**	**$16.80**

The daily yardages above are **pay yards actually washed**, net of downtime, moves, cleanup days, and stripping — a plant rated 30 yd/hr does not wash 240 pay yards in a day, ever. Established operations that own their iron, sit on their water, and strip efficiently get unit costs down to **$8–12/yd**; the table's $17–19 is the honest planning number for a first-year operation. Note what dominates: labor and machine time. Grade is geology, but cost per yard is management.

What a season nets

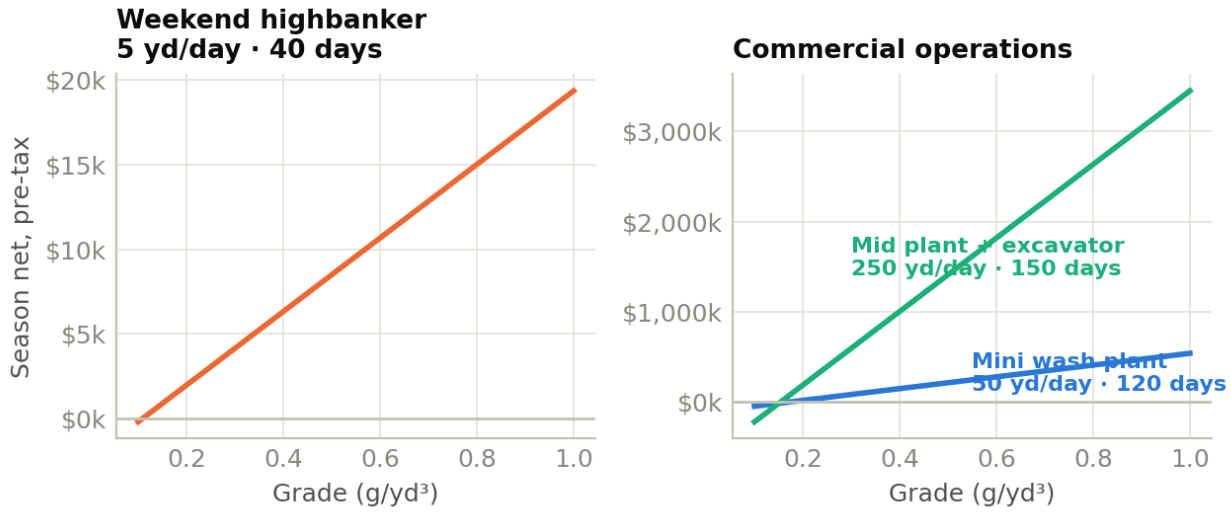

Figure 9.1 — Season net (before capital recovery and tax) versus grade at $4,045 gold, using Table 9.2 costs. The commercial tiers' leverage to grade is the whole game: every 0.1 g/yd is worth ~$65,000 a season to the mini-plant tier and ~$408,000 to the mid tier.

Table 9.3 — Season profit & loss, mini-plant tier (50 pay-yd/day × 120 days = 6,000 yd)

Grade case	0.20 g/yd	0.30 g/yd	0.40 g/yd	0.60 g/yd
Gold recovered & paid (oz equiv.)	32.3	48.4	64.6	96.8
Revenue @ $4,045 (net $109/g)	$130,600	$195,900	$261,200	$391,900
Operating cost ($950 × 120 d)	$114,000	$114,000	$114,000	$114,000
Season net (pre-tax, pre-capex)	**$16,600**	**$81,900**	**$147,200**	**$277,900**
Same ground at $3,000 gold	−$17,100	$31,300	$79,800	$176,700
Same ground at $2,500 gold	−$33,300	$7,100	$47,400	$128,100

The table carries the book's central practical lesson. On **0.4 g/yd ground** — rich by historical standards, common in the sampled remnants of good districts today — a two-person operation with $65,000 of equipment nets on the order of **$147,000 in a 120-day season**, pays back its capital in year one, and still clears $47,000 if gold crashes to $2,500. On 0.2 g/yd ground the same operation is a break-even job at today's price and a loss at any lower one. **The equipment is identical; the sampling made the difference.** This is why Chapter 5 insists on the 2× rule: proven grade ≥ 2× cutoff (here, ≥ 0.35 g/yd) before production capital moves.

Table 9.4 — Season P&L, mid tier (250 pay-yd/day × 150 days = 37,500 yd; capex ≈ $450k)

Grade case	0.15 g/yd	0.25 g/yd	0.35 g/yd	0.50 g/yd
Revenue (net $109/g)	$612,300	$1,020,500	$1,428,700	$2,041,000
Operating cost ($4,200 × 150 d)	$630,000	$630,000	$630,000	$630,000
Season net	**−$17,700**	**$390,500**	**$798,700**	**$1,411,000**

The mid tier's numbers explain why serious money is quietly re-entering western placer: on 0.35 g/yd ground it recovers a $450,000 capital outlay in well under one season. It also explains the graveyard: at 0.15 g/yd — ground that *panned encouragingly* — the same half-million-dollar spread loses money at record gold prices. Volume amplifies whatever the grade truly is.

Operating craft that moves the needle

- **Strip smart.** Overburden moved is pure cost. Mine benches where the overburden-to-pay ratio is lowest first; bank the easy margin before attacking deeper ground.
- **Classify before the box.** Screening feed to under ¾" (grizzly + trommel or vibrating screen) doubles effective sluice capacity and sharply improves fine-gold recovery.
- **Chase the fines.** Most gravel's gold count is dominated by −20 mesh gold the 1900s lost. Modern matting (vortex/talon profiles), correct water velocity, and a cleanup circuit with a concentrating table or centrifugal bowl routinely add 10–20% recovery over a bare riffle box — the cheapest ounces you will ever produce.
- **Recycle water.** A dug settling-pond circuit cuts pumping cost and dissolves most discharge-permit friction; many small plants run months on a single fill plus makeup.
- **Weigh every cleanup against yardage.** A daily grade log is your ore control: when grade falls off the pay streak, the log says stop and move *this week*, not at season's end.

PART IV · CHAPTER 10

Hardrock Economics: Veins, Mills, and Toll Milling

Lode mining is placer's older, harder sibling: more capital, more skills, more ways to fail — and, on a good vein at $4,000 gold, margins per ton that placer cannot touch.

What a small lode operation looks like

Forget headframes. The viable 2026 small lode operation is one of three shapes: (1) an **open surface cut** on an outcropping vein, benched down with an excavator and hydraulic breaker — no explosives licence, no underground exposure — viable to perhaps 40–60 feet of depth; (2) a **rehabilitated adit** on a historic mine, re-timbered and extended along an existing ore shoot, hand-scale underground mining at 4–15 tons/day; (3) a **dump and tailings reprocessing** operation, feeding a gravity mill from material already sitting broken on the surface — the lowest-risk entry into milling there is, and at today's cutoffs a surprising number of old dumps qualify (Chapter 3). All three feed the same downstream question: whose mill?

Toll milling versus your own mill

Toll milling — trucking ore to someone else's plant for a per-ton fee — turns a mining-and-milling business into just a mining business. Custom mills operate in Nevada and Arizona (capacity is scarce and terms move; typical small-lot toll charges run **$75–150/ton plus trucking**, with recovery and payment terms set by head assay). Tolling is the correct first move for almost every new lode operator: it converts your first hundred tons into a bankable metallurgical fact — actual recovered grade — before you buy a mill. Its limits: trucking eats margin with distance, small lots get the worst terms, and mill availability can vanish when you need it.

Owning a mill makes sense once proven ore exceeds roughly 1,000–2,000 tons. The standard small flowsheet is entirely mechanical — **jaw crusher → hammer (or ball) mill → centrifugal concentrator + shaker table** — no cyanide, no mercury, which keeps permitting inside the reach of Chapter 7's small-operation tiers. Budgetary numbers for new equipment (used runs half): jaw crusher $10,000–20,000; hammer mill $15,000–35,000; concentrator and table $10,000–25,000; feeders, conveyors, power (gen-set), water and building bring a **turnkey 1–2 ton/hour gravity mill to roughly $100,000–$250,000 installed**. (US builders such as Mt. Baker Mining & Metals sell integrated 1, 2, and 4–5 tph turnkey systems — get current quotes; prices are on inquiry.) Gravity recovery on genuinely free-milling ore: 75–90%. If test work shows your gold locked in sulfides, stop — sell concentrate to a smelter buyer or walk away; do not attempt leach chemistry at this scale.

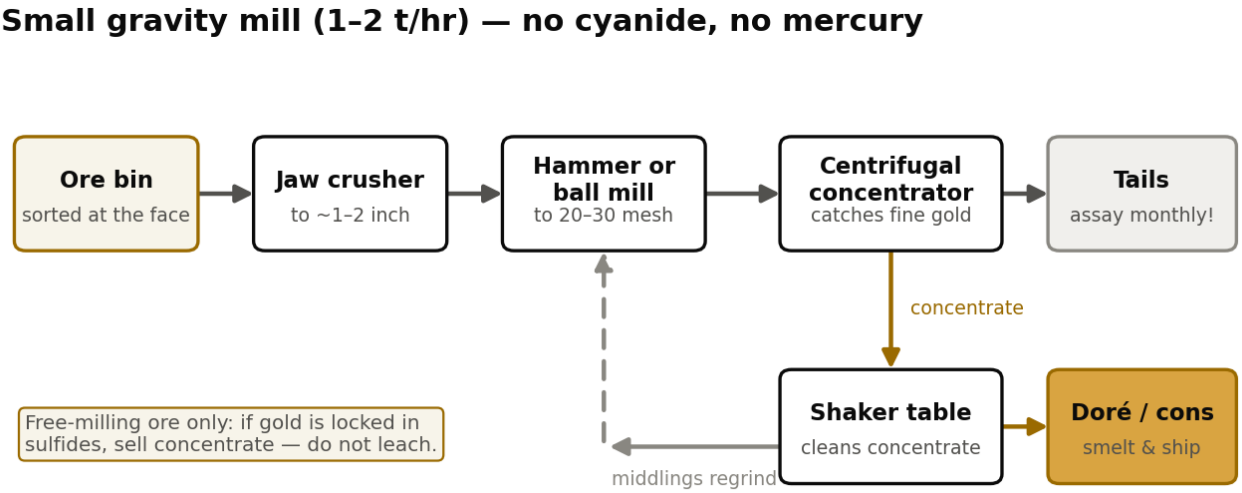

Figure 10.1 — The small gravity mill flowsheet: entirely mechanical, no leach chemistry, which is what keeps a one- or two-person mill permittable. Assaying your own tails monthly is the cheapest metallurgical audit available — rising tail grades mean the grind or the gravity circuit needs attention.

The Numbers

Table 10.1 — Small underground lode operation, annual model (8 t/day × 180 days = 1,440 t; own gravity mill)

Item	Amount	Basis
Head grade (mined, after dilution)	10 g/t	≈ 0.29 oz/ton — a good but unexceptional vein shoot
Revenue (net $106 per g/t·t)	$1,528,000	85% recovery, 96% payable, $4,045 gold
Mining labor (3 crew, loaded)	$324,000	$1,800/day
Consumables, ground support, fuel	$122,000	~$85/t
Milling	$86,000	~$60/t incl. wear parts, power
Maintenance, assays, permits, misc	$110,000	
Total cost (≈ $445/t)	**$642,000**	**Cutoff ≈ 4.2 g/t at this cost**
Annual net (pre-tax, pre-capex)	**≈ $886,000**	**≈ 395 oz recovered**
Same operation at $3,000 gold	≈ $491,000	
Same operation at $1,800 gold	≈ $38,000	The 2010s: this mine barely existed

The last row is the history of the West in one line: a vein that was a break-even hobby through the 2010s is an $880,000-a-year business at today's price. That is precisely why previously abandoned small mines are the richest hunting ground in the current market — and why the due-diligence disciplines of Chapters 5 and 6 matter most exactly here, because everyone else can read the same table.

DILUTION AND ORE CONTROL — THE LODE KILLER

The model's grade is *mined* grade, not vein grade. A 14-inch vein assaying 20 g/t, mined at a 32-inch minimum width, delivers ~9 g/t to the mill before a single misfired round or sloughed wall makes it worse. Narrow-vein profitability is won at the face: tight drilling, resuing (mining vein and waste separately) where the vein is rich enough to justify it, a strict "when in doubt, it's waste" sorting rule at the portal, and assay-based grade control on every round. The difference between disciplined and sloppy ore control on the same vein is routinely a factor of two in head grade — which Table 10.1 shows is the difference between $886,000 and roughly nothing.

Bulk Sampling by Toll Mill — The Low-Risk Entry Sequence

The recommended path into any lode project compresses to: (1) channel-sample the accessible vein (Chapter 5) — decision gate at ≥ 2× cutoff; (2) take a **100–300 ton bulk sample** under a Notice-level authorization, toll-mill it, and reconcile actual recovered grade against your assays — expect recovered grade to come in 10–30% under channel assays, and treat a worse reconciliation as the ground's verdict; (3) only then commit to mill capital and a production Plan. A 200-ton bulk sample at 12 g/t tolled at $140/t all-in (toll + trucking) on a $150/t mining cost returns roughly **$195,000 net** at today's price — the rare case where the prudent test also pays for the next phase.

PART IV · CHAPTER 11

Getting Paid: Recovery, Refining, and Selling

Gold in your cleanup bucket is not money yet. Between the sluice and the bank sit fineness, refining terms, and a market with a wide spread between what informed and uninformed sellers receive. The informed seller keeps five to fifteen points more.

Know what you actually have

Raw placer gold is a natural alloy, typically **85–92% gold ("850–920 fine")** with most of the balance silver — fineness varies by district and even by bar within a district. Lode gold from a gravity mill concentrates to doré after smelting, similar fineness ranges. A thousand dollars of "gold" weight is therefore roughly $850–920 of actual gold plus a real silver credit (at $58 silver, the ~8–12% silver content of placer gold is no longer rounding error — on 100 ounces of 880-fine placer gold, the ~10 oz of contained silver adds about $580). Every selling decision starts from contained metal, so weigh accurately (a $200 0.01-gram scale is mandatory equipment) and learn your ground's fineness from your first refiner settlement.

The selling ladder

Table 11.1 — Where small miners sell, and what each channel really pays

Channel	Typical net (of contained value)	Notes
Local pawn / coin shop	60–80%	Convenience pricing; fine for grams, ruinous for ounces
Local gold buyer / assayer	80–90%	Varies enormously; get competing bids
Refiner, small lot (<10 oz)	90–95%	Melt/assay fee $75–150 + treatment %; fee weighs heavier on small lots
Refiner, production lots (10 oz+)	95–98%	The professional channel; settlement on fire assay of your melted bar
Collector market (nuggets, specimens)	105–200%+	Character nuggets and crystalline specimens sell *above* melt to collectors and jewelers — never melt attractive pieces

The professional pattern for a commercial operation: accumulate cleanups, smelt to a bar per lot (many refiners handle the melt), ship insured or deliver to an established precious-metals refiner, and settle on assay at an agreed percentage against the London price on a date you choose. Establish the relationship before the season with a small pilot lot, confirm the fee schedule in writing, and always ask for the silver payout terms — small-lot terms quietly assume the silver is theirs unless you ask. Sort out **specimen-grade material first**: a quarter-ounce character nugget is a $1,000 melt asset and often a $1,500–2,500 collector asset.

PRICE RISK ON THE SHELF

Gold in your safe is an unhedged position. A season's production held for a hoped-for rally is speculation stacked on top of a mining business that is already long gold. The disciplined pattern: sell production lots on a regular schedule (each cleanup, or monthly), and treat any deliberate holding as a conscious investment decision sized like one. The January-to-July 2026 drawdown took 28% off anyone who held spring production into summer.

Taxes in one honest paragraph

For a miner, sold production is **ordinary business income** (Schedule C or the entity's return), not the collectibles capital-gains treatment an investor gets — with expenses, depreciation, and a notable industry provision, **percentage depletion** (15% of gross income from the property for gold, within taxable-income limits), deductible against it. State severance/net-proceeds taxes apply in some states (Nevada's net proceeds of minerals tax is the notable one). Cash-for-gold transactions do not make income invisible — refiners file information returns, and audit stories in this trade are common. Get a mining-literate accountant in year one; the depletion allowance alone typically pays the fee. This paragraph is orientation, not tax advice.

PART V · CHAPTER 12

Structure, Safety, and Taxes

The boring chapter that keeps the interesting chapters from ending badly.

Business structure

Run even a small operation through an **LLC** from the first commercial season: mining is a liability-generating activity (equipment, visitors, fire, water), claims and permits transfer more cleanly held by an entity, and partners' economics belong in an operating agreement signed while everyone is still friends. Single-member LLC taxation stays simple (disregarded entity). Put in writing with any partner, before the season: capital contributions, draw schedule, who operates what, gold custody and sale procedure, and what happens when one of you quits in August. Gold's portability makes custody discipline — two people at every cleanup, logged weights, photographed bars — a partnership-preserving institution, not an insult.

Insurance and risk transfer

Minimum stack for a commercial operation: **general liability** (agencies increasingly require proof for Plans; $1M CGL for a small placer op commonly runs $2,000–6,000/yr through surplus-lines brokers who know mining), **equipment coverage** (inland marine) on the iron, **auto** on the trucks, and **workers' comp the day you have an employee** — in most states it is mandatory and the uninsured-injury alternative is ruin. An umbrella is cheap once the stack exists.

Safety — the actual hazards, ranked

Small mining's killers are prosaic: **excavation collapse** (never work under a high bank or an unsupported cut face — undercut banks in gravel fail without warning and a yard of gravel weighs a ton and a half), **old workings** (bad air, rotten timber, winzes hidden under debris — stay out of historic underground without training, gas meter, and a partner), **equipment** (crush and rollover; seatbelts on slopes, lockout on the plant before clearing jams), **water** (dredging entrapment, cold-water immersion), and **remoteness** (an ordinary injury three hours from help; carry a satellite communicator, file a daily check-in). MSHA Part 46 training (Chapter 7) is legally triggered by employees, but the 24-hour new-miner curriculum is worth taking regardless — it is built from this industry's actual accident reports.

Bookkeeping that steers

Beyond tax compliance, three logs run the business: the **production log** (yards or tons moved, gold weighed, per day — your grade control and your seller's provenance record), the **cost log** (fuel, parts, hours by machine — the source of your real cost-per-yard, which Chapter 9 showed is the number you manage), and the **compliance binder** (permits, bond, inspections, correspondence). Thirty minutes an evening; the operations that keep them are conspicuously the ones still operating five years later.

PART V · CHAPTER 13

How Small Mines Fail

A field guide to the graveyard, so you can recognize each grave before you dig your own version of it. Ranked roughly by body count.

1. Mining unproven ground

The universal killer. Capital committed on the strength of a hot pan, a seller's assay sheet, or district reputation, without the systematic grid of Chapter 5. The fix is institutional, not motivational: adopt the **2× rule as a bylaw** — no production equipment purchased until sampled grade exceeds twice cutoff on a grid you dug yourself. Corollary: the *sunk-cost season*, where an operator who has found 0.15 g/yd ground keeps washing it because the plant is already there. Table 9.3's first column is a wage, at best, at record prices; move the plant.

2. Undercapitalization — dying before revenue

Season costs land before season revenue. The operation that arrives at July with proven ground, working iron, and an empty fuel account joins the graveyard as surely as the one with no gold. Budget rule: **working capital = one full season of operating cost, in cash, before the season opens** — for the mini-plant tier, that is ~$114,000 of committed liquidity (Table 9.3), not counting capex. If that number is not available, drop a tier; a fully funded highbanker season beats a starved wash-plant season every time.

3. The permit that never came

An operation built for one legal regime (a dredge in California, an in-stream plan in Oregon) that the regime then declined to allow — or a Notice-level assumption that turned into a two-year Plan of Operations. Defenses: confirm the current year's rules with the actual field office *before* buying method-specific equipment; prefer methods with regulatory headroom (bench and dry-land mining over in-stream; gravity mills over anything chemical); and never let the whole plan depend on a single discretionary approval with no fallback ground.

4. Equipment mismatch and mechanical bleed

The $60,000 plant fed by a $12,000 excavator; the dredge bought for a state that then closed dredging; the bargain excavator with a $14,000 undercarriage surprise; mid-season breakdown weeks because there is no critical-spares kit. Mining is a materials-handling business — buy the boring, common, dealer-supported machine, budget 10–15% of equipment value per year for maintenance, and winter is for wrenching, not the first week of the season.

5. Gold-price leverage in the plan

Operations built in 2026 that need $4,000 gold to survive are the 2026 vintage of the operations built in 2011 that needed $1,800 — many of which died by 2015 when the price went there. The stress test is Chapter 8's table: **underwrite at $2,500, operate at whatever the market pays.**

6. Partnership and gold-custody blowups

Unwritten splits, uncounted cleanups, one partner's brother-in-law on the payroll. The instruments of Chapter 12 — operating agreement, custody protocol, production log — exist because this failure mode is as reliable as gravity wherever they are absent.

7. The slow leaks

Claim fees missed on September 1 (ground lost to the fast-fingered); fuel theft from unattended sites; specimen gold melted for spot; assay budgets "saved" into blind mining; reclamation deferred until it became a bond claim. Each is a few thousand dollars a year of pure discipline.

> **THE PRE-MORTEM, ANNUALLY**
>
> Each off-season, write the one-page obituary: "The operation failed in [next year] because…" and fill in the most plausible cause from this chapter given your current facts. Then spend the winter removing that cause. Operators who do this feel mildly foolish for an hour a year; the alternative demographic populates this chapter.

PART V · CHAPTER 14

Three Roadmaps

The preceding thirteen chapters, compressed into three executable multi-year plans. Pick the one that matches your capital and appetite; each is written to be robust at $2,500 gold.

Roadmap A — The proving season(s): $3,000–$8,000

Year 1: Join a prospecting club (GPAA and regional clubs hold claims members may work — the cheapest legal ground in America) and run the Chapter 5 funnel on two or three districts within weekend range. Equipment: pan, sluice, classifier set, a used highbanker (~$1,000), scale, GPS. Goals, in order: learn to read gravel, produce your first weighed ounces, and build the sampled prospect list. A skilled weekender on club or casual-use ground grossing 8–20 grams a good weekend covers costs and banks knowledge. **Year 2:** Stake or buy the best sampled target as your own claim ($274 + diligence) and grid-sample it to the 2× standard. Exit criteria to Roadmap B: a claim you own, with ≥0.35 g/yd proven across enough yardage for three seasons (≥20,000 yd), water solved, and the permit path scoped with the field office. If two years of honest funnel work never produces that — a real possibility — the game has told you its answer for your area, at a total cost of a used snowmobile.

Roadmap B — The commercial placer build: $80,000–$200,000 committed

Off-season 0: Permits filed (state small-miner permit, Notice/Plan as applicable), bond posted, LLC formed, insurance bound, refiner relationship opened with a pilot lot. **Season 1 (prove the system):** rented mini-excavator + owned 10–15 yd/hr recirculating plant (~$40–60k total exposure with working capital); mine the best-sampled cut; target 3,000–5,000 yards at proven grade. At 0.35–0.4 g/yd, Table 9.3 says the season nets $80,000–150,000 — but the season's real product is the *reconciliation*: recovered grade vs. sampled grade, actual cost/yd vs. budget. **Season 2–3 (scale what reconciled):** roll profits into owned excavator and, if yardage supports it, the 50 yd/hr plant class; add one employee (MSHA training, comp) only when the grade log proves the marginal yardage pays their loaded cost. Steady state by season 3 on good ground: **$100,000–$300,000/yr net to the owner**, a machine fleet that holds value, and a sampled pipeline (Chapter 5, never stopped) holding the next three seasons of yardage.

Roadmap C — The lode operation: $150,000–$500,000, for the mechanically serious

Phase 1 (option, don't buy): Lease-option a historic small producer — patented ground via lease-royalty, or unpatented claims with clean title — in a district whose record says free-milling ore (Chapter 3's test). Pay for time to sample, not for the seller's stories. **Phase 2 (channel + bulk):** Channel-sample all accessible workings (~$5–10k with assays); gate at ≥2× the Chapter 10 cutoff for your intended cost structure. Then the 100–300 ton toll-milled bulk sample under a Notice — the reconciliation is the true feasibility study, and its proceeds (≈$195k in the Chapter 10 example) fund Phase 3. **Phase 3 (produce):** Surface cut or adit rehab at 5–10 t/day; own gravity mill once proven ore passes ~1,500 tons; crew of two to four. Modeled economics at 10 g/t mined grade: **≈$886,000/yr net pre-capex** at today's price, ≈$38,000 at $1,800 — so the price cushion is the business case, and the discipline is banking the boom-price years against the eventual lean ones. The failure modes con-

centrate in Phase 3 (dilution, mechanical, geology quitting); the roadmap's whole design is that Phases 1–2 cost under $60,000 and license you to walk away smarter.

PART V · CHAPTER 15

The Silver Question

Silver at $58 rewrites some old rules — but fewer than gold at $4,045 does. Where silver fits a small operation, and where it doesn't.

Silver's 2024–2026 run (to roughly $58/oz, from a long residence in the $20s) invites the question: why not mine silver? The honest answer is that **silver is a harder small-scale business than gold at any price ratio**, for one metallurgical reason: silver rarely occurs free-milling. Outside the oxidized tops of veins, it lives in sulfide and sulfosalt minerals that gravity circuits recover poorly; commercial recovery means flotation concentrate sold to a smelter — offtake terms, minimum lots, and chemistry beyond the small-mill tier. Gold forgives a small operator's flowsheet; silver mostly doesn't.

Where silver *does* pay the small operator:

- **As the credit riding on gold.** Placer gold's 8–12% silver content and epithermal doré's often much higher silver now add a real percentage to every settlement — insist on silver payout terms (Chapter 11).
- **Oxidized bonanza material.** The weathered zones of the great silver camps (Comstock margins, Tonopah, the San Juans, Nevada's dozens of smaller Ag districts) carry native silver, chlorides, and free gold that gravity + tabling handles adequately. Old dumps of "second-class ore" from these camps — material below the 1900s shipping grade of tens of ounces per ton — can assay 10–30 opt silver plus gold: at $58 silver, 15 opt is ~$870/ton gross before recovery haircuts, against Chapter 10-scale costs. Sample old silver-camp dumps exactly as Chapter 5 prescribes; the surprises run both directions.
- **High-grade vein shoots with gold.** Walker Lane-type epithermal shoots are silver-gold deposits; at a 70:1 price ratio, 500 g/t silver contributes like 7 g/t gold. Model both metals in the Chapter 10 arithmetic and some "gold" veins double their margin.

What still doesn't work small: primary sulfide silver requiring flotation, anything needing a smelter contract for its main revenue, and the Coeur d'Alene-style deep vein systems (great geology, industrial scale). Treat silver as gold's rich passenger, occasionally as an oxidized-dump specialty — and let the majors chase it as a primary product.

THE BOOK IN ONE PARAGRAPH

Gold at $4,000 has cut the small miner's grade bar by more than half while the 1872 law still hands any citizen the mineral rights to the West for $200 a year. The living is real: proven placer ground at a third of a gram per yard supports a six-figure two-person season; a proven 10 g/t vein supports much more. Every word of the preceding chapters reduces to four disciplines — **sample until the grade is proven, secure the ground before you love it, permit before you build, and underwrite at $2,500 gold** — and one promise: the ground does not care how you feel, but it pays arithmetic every time.

PART V · CHAPTER 16

The Miner's Year: A Working Calendar

Mining is a calendar business twice over: nature sets the season, and the government sets the deadlines. The operators who prosper run both clocks deliberately. Here is the year as a working small miner actually lives it.

The calendar below is written for a northern placer operation (Idaho, Montana, Oregon, the high Sierra); the desert variant that follows inverts it. Lode operations follow the northern rhythm with a longer working window underground. However your year is arranged, three dates are load-bearing and non-negotiable: **September 1** (BLM maintenance fees or waiver — miss it and the claim is void), your **state permit renewal** date, and the **first day water flows** — because every week of season lost at the front end comes straight out of the profit column, never the cost column.

Table 16.1 — The northern placer year

Months	The work	Why it matters
Dec–Feb The desk season	Reconcile last season (recovered grade vs. sampled, cost/yd vs. budget). Run the Chapter 5 desktop funnel on next targets. Order assays on winter-collected samples. File state permit renewals. Negotiate claim purchases and leases — winter is the buyer's market. Book refiner terms for the coming year.	Every production decision for the coming year is cheapest to change now. Sellers of claims and iron are most motivated in January.
Feb–Apr The wrench season	Full rebuild pass on excavator, pumps, plant: undercarriage, hoses, bearings, sluice matting, screens. Assemble the critical-spares kit. MSHA refresher training if you have crew. Confirm insurance and bond status. Pre-stage fuel contracts.	A July breakdown costs $109 per gram not mined plus the mechanic; a February rebuild costs parts. Winter wrenching is the highest-wage work you will do all year.
Apr–May Access & water	Snow permitting: open roads, repair crossings per permit conditions, dig/clean settling ponds, set water pumps and pipe, strip overburden from the first cuts while ground is firm. Update the field office if your Notice/Plan requires an annual operating update.	Stripping before wash season means the plant never waits on the digger. Agencies notice operators whose season starts tidy.
May–Sep Production	Wash pay gravel. Daily production log: yards, hours, gold weighed per cleanup. Weekly: grade plotted against the sampling model — move the cut when the log says so, not the calendar. Sell gold on schedule, not on hope. Concurrent reclamation of mined-out cuts. **Sept 1: BLM fees/waiver filed — do it in July.**	The grade log is ore control, theft control, and next winter's planning data in one notebook. July filing beats the September 1 stampede and mail risk.
Sep–Oct Close-down	Final cleanup (the year's richest — take your time), plant winterization, fuel stabilized, equipment under cover. Finish season's reclamation and photograph everything for the bond file. Collect next year's samples from freshly cut faces while they're exposed.	Fresh-cut faces are free exploration data that disappears under spring sloughing. The bond photos are what make release inspections painless.
Oct–Nov The selling season	Settle final refiner lots. Books to the accountant early (depletion allowance, equipment depreciation elections). Winter-list any claims you've decided not to work — and evaluate acquiring the ones your summer sampling flagged.	Tax planning in November has options; tax planning in April has regrets.

The desert inversion. Arizona, southern Nevada, and the Mojave run the same year mirrored: production October–April, desk and wrench work through the furnace months of June–August. The two calendars interlock — which is why a growing number of serious small operators run the *snowbird circuit*: a northern placer season May–September, a desert drywash or patio-scale operation November–March, one equipment set apiece, and no idle quarter. At today's prices, the second season is frequently what turns a living into a good living.

THE FIVE DATES THAT VOID CAREERS

(1) **Sept 1** — BLM maintenance fee/waiver received, not postmarked. (2) **County affidavit deadlines** — assessment-work filings where you use the small-miner waiver (30–90 days after the assessment year, varies by state). (3) **State permit anniversary** — reclamation permits and dredge permits lapse quietly. (4) **Bond review dates** — an under-bonded operation can be ordered to stand down in mid-season. (5) **Lease/option deadlines** — advance royalty and work-commitment dates on private ground. Calendar all five twice — paper and phone.

PART V · CHAPTER 17

Questions Miners Actually Ask

Fifteen years of talking with prospectors, buyers, and new operators produces the same twenty questions in every conversation. Here are the ones that matter most, answered straight.

Do I own the land when I own a claim?

No. An unpatented claim gives you the *mineral rights* and the surface use reasonably needed to mine them. The United States still owns the land; the public can still cross it, hunt on it, and camp on it. What you own is real property in the minerals — sellable, leasable, inheritable — and the exclusive right to mine there. (A *patented* claim is different: that is fee-simple private land. Chapter 6.)

Can I build a cabin, park a trailer long-term, or live on my claim?

Only to the extent occupancy is *reasonably incident to actual mining* — the federal test under the occupancy rules (43 CFR 3715 on BLM land). A tool trailer during the season on an active operation is defensible; a residence is not, and "living on my claim" is one of the fastest ways to end up in a compliance action. If you want to live at the mine, the answers are patented ground, private land nearby, or a hard conversation with the field office about what your Plan can justify.

Someone is metal detecting / dredging / digging on my claim. What can I do?

Mineral trespass is real and actionable, but start human: most incursions are ignorance, and a polite conversation with a copy of your location certificate ends it. Post the claim corners and boundary lines clearly. For repeat or commercial-scale jumping: document (photos, dates, plates), then the county sheriff (mineral theft is theft) and the BLM field office. Civil damages are recoverable; self-help confrontation is how mining-district folklore gets written — skip it.

How much gold does a weekend prospector really find?

On decent club or private ground, a skilled operator with a highbanker moves 2–5 yards a day; at 0.3–0.5 g/yd that is **roughly half a gram to two and a half grams a day** — $65–$320 at today's price. Good weekends happen; so do blank ones. The honest average for skilled weekend work on real ground is beer money to truck-payment money — which is exactly why this book insists the step from hobby to business runs through sampling and yardage, not enthusiasm.

Is a suction dredge legal?

Entirely state-dependent and the single most volatile rule set in the industry: effectively no in California, restricted permit systems in Oregon and Washington, a workable one-stop permit in Idaho, largely moot in the dry states. Chapter 7 has the 2026 status; verify the current year before buying a dredge, every time.

Do I need an LLC before I stake my first claim?

For casual prospecting, no. From the first season you'd call *commercial* — employees, serious equipment, meaningful revenue — the LLC, insurance, and bookkeeping stack of Chapter 12 is cheap protection. Many operators form the LLC when they buy or stake the ground they intend to produce from, so title never has to move twice.

What does it actually cost to keep a claim, all-in?

Federal maintenance $200/year (or the ≤10-claim waiver: $15 filing plus $100 of documented assessment work); county recording of the annual affidavit where applicable, $10–40; nothing else is mandatory on a claim you aren't disturbing. Call it **$215–250 a year per claim** held passively — the cheapest option on mineral upside in American finance, and the reason serious operators warehouse a pipeline of sampled prospects.

Are the gold prices I see quoted what I'll actually get?

You will be paid on *contained fine gold*, minus recovery losses you already took at the plant, minus refining terms. Raw placer gold at 850–920 fine sold on professional refiner terms nets 90–98% of its contained value; sold casually at a coin shop, 60–80%. Chapter 11's ladder is worth several thousand dollars a season to a small producer. And character nuggets sell *above* melt — never smelt the pretty ones.

What's a realistic budget to go from nothing to a producing placer operation?

Using this book's models: **$3,000–8,000** to prove ground over one to two seasons (Roadmap A); **$80,000–200,000 committed** — equipment plus a full season of working capital — to build a small commercial operation on proven ground (Roadmap B). Anyone selling a faster path is selling the fast part, not the path.

Should I stake my own claim or buy one?

Stake when you have time, the Chapter 5 skills, and open ground worth holding — total cost under $300. Buy when someone else has already done the expensive part — sampling history, clean title, permits, access — and you can verify it. The arithmetic is simple: a claim with 20 documented test pits at 0.4 g/yd is worth many multiples of a raw 20-acre rectangle, because the sampling is the value. Chapter 18 shows what verified listings look like; Chapters 5 and 6 tell you how to check anyone's — including ours.

Do claims expire? Can I inherit one? Can my kids take over the operation?

A maintained claim lives indefinitely — some Nevada claims have been continuously held for over a century. Claims pass by will or intestacy like any real property; record the transfer documents with both the county and BLM promptly. Permits and bonds, note, do *not* transfer automatically — the successor operator files anew or formally assumes them.

Is small-scale mining legal at all? I keep reading that it's over.

The 1872 Mining Law still stands. What has changed is the *where* and *how*: more withdrawn land, real environmental process, and in-stream restrictions in the salmon states. The viable envelope — bench and dry-land placer, small free-milling lode, dump reprocessing, the friendly states — remains large, and at $4,045 gold it is more economically alive than at any point in living memory. The trade did not end; it moved, and this book is the map of where it moved to.

PART VI · CHAPTER 18

Proven Ground: The Mountain Man Mining Marketplace

Everything this book teaches ends at the same doorstep: you need ground worth working. Since 2017, Mountain Man Mining has connected prospectors and investors with verified claims across the American West — straightforward listings, real title records, no fluff.

Chapters 5 and 6 laid out the two honest paths to ground: prove it yourself over a season or two, or buy ground someone has already proven and verify their work. Both paths are good; they trade money for time in opposite directions. This chapter is for the second path — and it is, in full disclosure, the publisher's shop window. We think that is a feature: the company standing behind these listings is the same one that just spent seventeen chapters telling you to demand title records, sampling data, and independent verification from anyone who sells you a claim. **Hold us to every word of it.**

What "verified" means at Mountain Man Mining

Every listing we publish has been through the same checklist Chapter 6 taught you to run: the **MLRS serial register** pulled and current (active status, fees paid); the **chain of title** traced through recorded county documents to the seller; **land status** confirmed open to mineral entry — no withdrawals, no conflicting claims; and the location documents reviewed against state staking requirements. Transfers close by recorded quitclaim deed with the BLM transfer filing handled for you. What verification does *not* replace — and we say this in every listing — is your own eyes on the ground and your own pans in the gravel. We encourage site visits and independent sampling before purchase, because buyers who sample become owners who succeed, and owners who succeed come back.

Current listings — July 2026

Table 18.1 — Claims currently offered at MountainManMining.com (availability changes — see the site for current status and full dossiers)

Listing	County / State	Type	Price	The short story
The Virginia Lynn	Dolores Co., CO	Lode	$1,000,000	Flagship commercial property: historic tungsten/PGM mine package for the serious operator or investor — the rare listing with district-scale upside.
Deep Dynamite Claims	Clark Co., NV	Lode	$25,000	Nevada lode ground in a state with the West's friendliest permitting (Ch. 4's top scorecard).
Sedona Legend #17	Yavapai Co., AZ	Placer	$17,995	Arizona placer in the historic Yavapai gold country — winter-season ground (Ch. 16's desert calendar).
North Meadow Creek Gold #10	Madison Co., MT	Placer	$16,500	Madison County sits in the Alder Gulch neighborhood — Montana's great placer belt (Ch. 4).
Boulder #2 & #3	Boise Co., ID	Lode	$15,000	Two lode claims in the Boise Basin country — the district Chapter 4 calls Idaho's sleeper.
Arizona Bedrock Gold 008 & 009	La Paz Co., AZ	Placer	$10,000	Two-claim placer package in the La Paz/Quartzsite district — classic drywash ground.
Ayers Claim	Sierra Co., CA	Placer	$6,500	Northern Sierra placer in the heart of the ancient-channel country of Chapter 3.
Bumblebee Gold #2	Yavapai Co., AZ	Lode	$3,750	An entry-priced Bradshaw-country lode claim — the cost of a good highbanker, holding mineral rights.

Read the table with Chapter 8 in your head. At $200 a year to hold, a $3,750 starter claim carries for less than the annual cost of a storage unit; a $16,500 placer claim on ground that samples at Chapter 9's target grades pays for itself in the first weeks of a season. The expensive listing is not the risky one and the cheap listing is not the safe one — **the sampling you do before closing is what sets the risk**, on our ground as on anyone's.

Beyond the listings

- **Consignment — sell your claim.** Holding proven ground you'll never work? Our consignment program lists it to an established buyer base of prospectors and investors, with title work and transfer filings handled. The winter months of Chapter 16's calendar are the listing season.
- **BLM filing services.** Maintenance fees, waivers, affidavits, transfers, new locations — filed correctly and on calendar, so September 1 is our deadline instead of your emergency.
- **Open Ground Research Program.** Our 3D claim-research tool maps unclaimed, mineralized ground in Nevada — USGS occurrence data, claim status, and land status on one prospectivity map. Free through August 2026: the Chapter 5 desktop funnel, pre-assembled.
- **The Mining Library.** 1,562+ digitized historical documents — district reports, mine records, the primary sources Chapter 5 teaches you to read — searchable in one place.

START THE CONVERSATION

Browse current listings, dossiers, and title records at **MountainManMining.com** — or reach us through the contact page to talk through a listing, consign a claim, or ask which ground fits the roadmap you chose in Chapter 14. Est. 2017 · Sparks, Nevada. Straightforward listings, real title records, no fluff.

APPENDIX A

Master Cost Tables

Every recurring number from the text in one place, July 2026 dollars. Re-verify anything marked ⊙ against the current schedule before budgeting.

A.1 — Ground and legal

Item	Cost
New lode claim, federal filing ⊙	$274 ($49 location + $25 processing + $200 maintenance)
New placer claim (20 ac), federal filing ⊙	$274 (+$200 per additional 20 ac)
County recording	$10–$40
Annual maintenance, per claim ⊙	$200 (due Sept 1)
Small-miner waiver route (≤10 claims) ⊙	$15 filing + $100/claim assessment work
Claim purchase, speculative placer 20 ac	$2,000–$10,000
Claim purchase, sampled/permitted ground	$15,000–$150,000+
Patented-ground lease (small lode)	$2,000–$10,000/yr advance vs. 2–10% NSR
Reclamation bond, small placer	$2,000–$8,000 per disturbed acre (refundable)
Small placer Plan of Operations, all-in	$5,000–$50,000 + 6–18 months
LLC formation + first-year compliance	$300–$1,500
General liability, small commercial op	$2,000–$6,000/yr

A.2 — Exploration

Item	Cost
Fire assay, Au (commercial lab, with prep) ⊙	$35–$55/sample
Au + multi-element ICP add-on	+$25–$45/sample
60-sample lode channel program	$2,500–$3,500 (assays)
Mini-excavator rental for test pitting	$400–$600/day
20-pit gridded placer sampling program	$2,000–$6,000 all-in
QGIS, MRDS, MLRS, geologic maps	Free

A.3 — Placer equipment (new; used ≈ 50–70%)

Item	Cost
Highbanker (Mini Max class)	$800–$1,600
Highbanker/dredge combo 2–3"	$2,600–$4,000
Suction dredge 4" / 5–6"	$5,300–$6,500 / $9,000–$20,000
Recirculating trommel plant, 5–15 yd/hr	$15,000–$60,000
Wash plant, 50–100 yd/hr class	$120,000–$300,000
Mini-excavator 3–5 t (used / rent)	$40,000–$75,000 / $2,000–$4,000/mo
Excavator 20 t (used)	$60,000–$130,000
Pumps, pipe, ponds, fuel storage	$8,000–$40,000
Concentrate cleanup (table or bowl)	$4,000–$15,000

A.4 — Hardrock equipment and services

Item	Cost
Jaw crusher (small)	$10,000–$20,000
Hammer mill	$15,000–$35,000
Centrifugal concentrator + shaker table	$10,000–$25,000
Turnkey 1–2 tph gravity mill, installed	$100,000–$250,000 (quotes on inquiry)
Toll milling, small lots	$75–$150/ton + trucking
Underground rehab (timber, rail, ventilation)	$50–$300/ft of adit — inspect before leasing

A.5 — Operating benchmarks (from Ch. 9–10 models)

Metric	Planning value
Placer opex, first-year commercial op	$15–$20 per pay yard
Placer opex, established efficient op	$8–$12 per pay yard
Small lode all-in (mine + own mill)	$250–$450/ton
Net revenue per in-ground gram, placer @$4,045 ⊙	≈ $109
Placer breakeven @ $16/yd	≈ 0.15 g/yd (target ≥ 0.30)
Lode breakeven @ $300/t	≈ 2.8 g/t (target ≥ 6)
Working capital rule	One full season of opex, in cash, before opening

APPENDIX B

Glossary

Adit — horizontal mine entrance. **Assessment work** — $100/yr of qualifying labor/improvements per claim under the small-miner waiver. **Bank yard** — cubic yard of gravel measured in place, before excavation swell. **Bench placer** — ancient stream gravel perched above the modern channel. **Bulk sample** — a deliberately large (tens to hundreds of tons) sample processed to measure true recovered grade. **Casual use** — mining activity causing negligible surface disturbance; no federal notification required. **Channel sample** — continuous chip sample cut across a vein's full width. **Cutoff grade** — the grade at which material exactly pays its costs. **Dilution** — waste rock unavoidably mined with ore, lowering delivered grade. **Doré** — unrefined gold-silver bar poured at the mine. **Drywasher** — air-based placer concentrator for waterless desert ground. **Fineness** — parts-per-thousand gold purity (880 fine = 88%). **Fire assay** — the standard laboratory gold determination, by fusion and cupellation. **Free-milling** — gold recoverable by crushing and gravity alone. **Gossan** — rusty weathered cap over sulfide mineralization. **Grizzly** — coarse screen protecting a plant from oversize rock. **Highbanker** — pump-fed portable sluice. **Load (lode)** — mineralized rock in place; the vein. **Location** — the legal act of staking a claim. **MLRS** — BLM's Mineral & Land Records System. **MRDS** — USGS Mineral Resources Data System. **MSHA** — Mine Safety and Health Administration. **NSR** — net smelter return royalty. **Notice** — the ≤5-acre federal exploration authorization tier. **Nugget effect** — extreme sample-to-sample variance caused by gold's concentration into rare rich particles. **opt** — troy ounces per short ton (= 34.28 g/t). **Patented claim** — former mining claim conveyed to fee-simple private ownership. **Pay streak** — the concentrated zone of placer gold, typically on bedrock. **Placer** — mechanically concentrated detrital mineral deposit. **Plan of Operations** — the full federal authorization for mining-scale disturbance. **Reconciliation** — comparing predicted (sampled) grade against actually recovered grade. **Resuing** — mining a narrow vein and its wallrock separately to limit dilution. **Riffle** — flow obstruction in a sluice that traps heavy minerals. **Salting** — fraudulently adding gold to samples or ground. **Stope** — the underground void left by mining an ore shoot. **Toll milling** — paying a per-ton fee to process ore in someone else's mill. **Withdrawal** — land administratively closed to mineral entry.

APPENDIX C

Resource Directory

C.1 — Databases and agencies

Resource	URL	Use
USGS MRDS	mrdata.usgs.gov/mrds	Mineral occurrences & past producers
BLM MLRS	mlrs.blm.gov	Claim records, filings, land status
BLM maps / surface management	blm.gov/maps	Who manages the land
BLM claim fees ⊙	blm.gov → mining claims → fees	Current fee schedule
USGS Publications Warehouse	pubs.usgs.gov	District reports, professional papers
National Geologic Map Database	ngmdb.usgs.gov	Geologic maps; TopoView historic topos
USGS EarthExplorer	earthexplorer.usgs.gov	Imagery, ASTER/Landsat
eCFR 43 CFR 3809 / 36 CFR 228	ecfr.gov	Federal surface-management rules
MSHA	msha.gov	Part 46 training, small-mine consultation
State geological surveys	stategeologists.org	NBMG, AZGS, IGS, DOGAMI, MBMG, CGS…
Mountain Man Mining	MountainManMining.com	Verified claim listings, consignment, BLM filing services, Open Ground research tool, Mining Library (Ch. 18)

C.2 — State small-miner touchpoints (verify current programs)

State	Key agencies for a small operation
Nevada	NDEP Bureau of Mining Regulation & Reclamation; NBMG; state engineer (water)
Arizona	AZGS; State Land Dept (trust-land permits); ADEQ
Idaho	IDL (placer/dredge permits); IDWR (stream channel & water); IGS
Oregon	DOGAMI; DEQ (700-PM permit); DSL (removal-fill)
Montana	DEQ Hard Rock/Placer programs (Small Miner Exclusion); MBMG
California	County SMARA lead agency; CDFW; State & Regional Water Boards; CGS

Community: GPAA and regional prospecting clubs (member claims, mentorship); local small miners' associations (permitting memory); ICMJ's Prospecting & Mining Journal (the trade's working periodical); county recorders and BLM field offices — the two desks every operator should know by name.

APPENDIX D

Units, Conversions, and Handy Numbers

D.1 — Conversions

From	To	Multiply by
Troy ounce	grams	31.1035
oz per short ton (opt)	g per metric tonne	34.286
Pennyweight (dwt)	grams	1.5552
Grain	grams	0.0648
Bank yd^3 (gravel)	loose yd^3	≈ 1.25
yd^3 gravel	short tons	≈ 1.4–1.6
g/yd^3	oz/yd^3	0.03215

D.2 — Handy numbers at $4,045 gold / $58 silver (July 29, 2026)

Quantity	Value
1 gram of gold (spot)	$130.05
1 in-ground placer gram, net (90% × 93%)	≈ $109
1 pennyweight	$202.25
0.1 g/yd^3 of grade, per 1,000 yd washed	≈ $10,900 net
1 g/t of mill feed, per 100 t milled (85% × 96%)	≈ $10,600 net
1 troy oz of silver	$58.12
Silver in 100 oz of 880-fine placer gold (~10 oz)	≈ $580
"$8 gravel" in a 1935 report (gold at $35)	≈ 7.1 g/yd ≈ $770/yd today

Data sources for prices and fees as compiled July 29, 2026: spot gold ~$4,045/oz (TradingEconomics; January 2026 peak ~$5,608), silver ~$58.12/oz (JM Bullion); BLM mining-claim fee schedule effective September 1, 2024 (blm.gov); assay pricing from published 2026 fee schedules (ALS Global, Actlabs); equipment pricing from manufacturer/dealer listings (Keene Engineering dealers, goldwashplants.com, Mt. Baker Mining & Metals) surveyed July 2026. All modeled economics are the author's illustrative calculations from stated assumptions.

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The gold is still out there. At $4,000 an ounce, more of it pays than at any time in living memory — for the operator who samples before spending, files before deadlines, and underwrites at $2,500.

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