

Estelle Gold & Critical Minerals Project Overview

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Executive Snapshot

Location and scale

Estelle sits ~150 km NW of Anchorage, Alaska, on 803 State of Alaska mining claims totaling about 127,102 acres (~514 km²) across a 35 km mineralized corridor within the Tintina gold province.

Ownership/operator

Nova Minerals Limited (ASX: NVA; NASDAQ: NVA) holds 85% via AK Custom Mining LLC; AK Minerals Pty Ltd holds 15% and a 2% NSR. In Nova's June 30, 2025 Form 20-F, AK Custom Mining LLC was still shown as the titleholder under the 85/15 JV. Nova's wholly owned U.S. subsidiary, Alaska Range Resources LLC (ARR), leads U.S. antimony initiatives.

Project status

Advanced exploration and evaluation with an SEC S-K 1300 Initial Assessment (TRS) effective January 31, 2024; fully permitted for exploration with an established 80-person, all-season camp and 4,000-ft Whiskey Bravo airstrip.

Deposit styles/domains

Reduced intrusion-related gold system (IRGS) hosted in and around the late Cretaceous Mount Estelle pluton. Key deposits are Korbel Main and Cathedral (bulk-tonnage), and RPM North/South (higher-grade), with additional prospects including Train, Shoeshine, Shadow, Stoney, Trumpet, and Stibium (antimony).

Latest resources

- S-K 1300 (effective Jan 31, 2024): 5.17 Moz Au total (0.18 Moz Measured, 2.54 Moz Indicated, 2.45 Moz Inferred); 85% attributable to Nova = 4.41 Moz. Estimation by MIK and pit shells at US\$2,000/oz. Cut-offs: RPM 0.20 g/t Au; Korbel/Cathedral 0.15 g/t Au.
- JORC (ASX, April 11, 2023): 9.9 Moz global resource across four deposits.

Development/processing concept

Scoping-level basis: conventional open-pit truck/shovel; process flowsheet of crushing–sorting (Korbel)–flotation–regrind–leach; pre-production capital ~US\$385M; pre-tax NPV5% ~US\$654M; IRR ~53% (study-level assumptions; no reserves).

Strategic alignment and federal interest

ARR received a US\$43.4M Defense Production Act Title III award to advance a domestic antimony supply chain (stibnite-to-Sb₂S₃) and holds a Port MacKenzie land-use permit site for a proposed refinery; targeted military-spec Sb by 2026/27.

Project History

Early reconnaissance and staking

USGS mapping from early 1900s; AMAX staked at least four claims at Mount Estelle "Lower Discovery" in 1982; Cominco explored in the late 1980s, sampling and drilling across Train, Shoeshine, Shadow, Discovery Creek.

2000s consolidation and project generation

Work by Hidefield Gold Plc., International Tower Hill Mines (ITH), and Millrock (2011–2012) established multiple IRGS targets and first modern drilling at Oxide/Korbel and RPM. Teck American JV'd with Millrock in 2011 to earn in (55% first option), funding programs.

2017 acquisition

Nova (then through AKCM JV with AK Minerals) acquired the Estelle mineral rights and began aggressive drilling and resource delineation.

2019–2023 resource growth

Maiden JORC (2.5 Moz, 2019), followed by multiple upgrades to 9.9 Moz JORC (2023); high-grade discoveries at RPM North/South underpin S-K 1300 TRS (2024) totaling 5.17 Moz gold (pit-constrained).

2023–2025 permitting/infrastructure

AIDEA submitted the CWA Section 404 application for the West Susitna Access Road, initiating NEPA review; State support emphasized.

2025 strategic U.S. interest

ARR awarded US\$43.4M under DPA Title III for antimony; Estelle noted by RFC Ambrian as one of few near-term U.S. antimony opportunities; senior federal/state engagement noted.

Geology & Mineralisation

Regional setting

Estelle is in the southwestern Tintina Gold Province on State land, straddling the Mount Estelle composite pluton (68–78 Ma) intruding Kahiltna basin sediments; IRGS characteristics akin to Fort Knox and Dublin Gulch. Alteration includes quartz–sericite–pyrite with arsenopyrite, pyrite, chalcopyrite common.

Deposit areas

Korbel Mining Complex (Korbel Main + Cathedral ~550 m apart)

Large, bulk-tonnage IRGS from surface, low strip; significant Indicated inventory at Korbel Main; high-grade feeder targets at Cathedral.

RPM Mining Complex (North/South)

High-grade gold from surface; resource remains open with potential for linkage along strike; numerous thick, high-grade intercepts at RPM North.

District prospects

Train, Shoeshine, Shadow, Stoney, Trumpet, Discovery, Rainy Day, T5, Tomahawk, Trundle, West Wing, Wombat; plus critical-minerals prospects Stibium and Styx with outcropping stibnite lenses and antimony-rich veins.

Resource estimation and classification

S-K 1300 TRS uses Multiple Indicator Kriging within US\$2,000/oz pit shells; RPM cut-off 0.20 g/t Au; Korbelt/Cathedral 0.15 g/t Au; effective date Jan 31, 2024. QA/QC protocols align with industry standards.

Infrastructure, Approvals & ESG

Access/logistics

Current access by air (Whiskey Bravo airstrip) and winter road; West Susitna Access Road (AIDEA) advanced to permitting with USACE 404 application submitted; construction has been proposed to start post-permitting.

Permitting framework and status

Exploration

Nova/ARR indicate the project is fully permitted for exploration; historic APMA drill programs were obtained for Korbelt in 2018.

Large Mine Permitting

Nova engaged Jade North/Axiom to scope baseline and coordinate State LMPT path (wetlands, hydrology/water quality, APDES; DNR Plan of Operations, Water Rights or TWUAs; USACE 404; ADEC 401/WQC among others).

Note: USACE 404 application for the AIDEA road is filed; mine-specific 404/401 for site facilities will follow later in mine permitting.

ESG posture

Nova details environmental commitments, ongoing baseline studies, and intends to align with LMPT processes. The TRS outlines a multi-disciplinary baseline/NEPA dataset required prior to mine permitting.

Critical-minerals policy linkages

ARR's DPA Title III funding to establish a domestic antimony trisulfide supply chain; Port MacKenzie site secured for a proposed refinery (Sb₂S₃, Sb₂O₃, Sb metal).

Green Flags

- **Federal alignment and funding:** ARR awarded US\$43.4M under DPA Title III to fast-track a U.S. antimony supply chain anchored at Estelle and Port MacKenzie.
- **Tier-1 district scale:** ~514 km², 803 State claims, 35 km mineralized corridor; four defined Au deposits plus 20+ prospects; Stibium highlights co-incident antimony.
- **Resource endowment and upside:** 5.17 Moz Au S-K 1300 (2024) with a larger 9.9 Moz JORC global inventory (2023); new drilling at RPM/Train and maiden antimony drilling at Stibium underway/planned.
- **Processing route de-risking:** Established testwork indicates conventional flotation–regrind–leach with ore sorting at Korbelt; scoping-level economics robust (NPV5% ~US\$654M; IRR ~53%).

- **Infrastructure vector:** AIDEA's West Susitna Road in permitting; proximity to Anchorage labor/logistics; Port MacKenzie site for refining.
- **Jurisdiction:** U.S. State land tenure (no federal/native title lands at site); supportive State leadership and agencies; LMPT provides coordinated path.

Red Flags

- **JV structure and title chain:** SEC filings to June 30, 2025 still show AK Custom Mining LLC as titleholder (85% Nova / 15% AK Minerals + 2% NSR). Confirm any post-mid-2025 conveyances to ARR in the Alaska Recorder.
- **Permitting complexity:** Mine development will require overlapping State and Federal approvals (USACE 404/NEPA; ADEC 401/WQC; APDES; DNR plans, water rights/TWUAs). Current 404 filing relates to the AIDEA road, not a mine.
- **Infrastructure dependency:** Economic case strengthens with West Susitna road; schedule and approvals remain external to Nova.
- **Capital intensity and stage:** No DFS or construction decision; economics to date are scoping/IA-level and include forward-looking assumptions.
- **ESG scrutiny for antimony:** New U.S. refining and Sb processing (Sb₂S₃) will face emissions, water/solid-waste permitting and community review at both mine and port sites.

Exploration & Ownership History

Years	Owner / JV Partner	Exchange / Ticker	Key Actions / Notes
1982	AMAX	–	Staked at least four claims at Lower Discovery, Mt Estelle.
Late 1980s	Cominco American	–	Regional mapping/sampling and drilling near Train, Shoeshine, Shadow, Discovery Creek.
2007–2012	Hidefield; ITH; Millrock (with Teck American option 2011)	TSX-V/NYSE: TECK	Defined IRGS targets; first modern drilling at Oxide/Korbel and RPM; Teck optioned to 55%.
2017–2025	Nova via AK Custom Mining LLC (AKCM JV 85/15; 2% NSR)	ASX:NVA; NASDAQ:NVA	Aggressive drilling; JORC growth to 9.9 Moz (2023); S-K 1300 TRS (2024); 20-F confirms 85/15 JV.
2025–present	Alaska Range Resources LLC (ARR) (Nova 100% U.S. sub.)	–	DPA Title III award US\$43.4M for Sb; proposed Port MacKenzie refinery site. Ownership transfer of mineral title not evidenced in filings; verify.

Political & Market Context

- **U.S. strategic focus:** ARR's DPA Title III award underpins the antimony defense-supply chain narrative and aligns Estelle with national security priorities.
- **State and federal visibility:** Public statements and meetings (Governor Dunleavy; Alaska delegation; Australian Consul) show support for West Susitna and Port MacKenzie logistics.
- **National attention:** Post-election statement by President-elect Trump emphasized enabling Alaska resource development; executive orders in 2025 cited as accelerating U.S. mineral production initiatives.
- **Strategic significance:** RFC Ambrian 2025 identified Estelle among a handful of near-term Sb projects (U.S. peers include Perpetua's Stibnite).

Recommended Next Steps

- **Title/ownership confirmation:** Run an Alaska Recorder chain-of-title check (post-June 2025) to confirm any transfer from AK Custom Mining LLC to ARR; reconcile NSR and JV residuals.
- **Water and wetlands:** Confirm current water baseline datasets, TWUAs/Water Rights, and ADEC 401/WQC planning status; map mine-site vs. road 404 scopes to avoid gaps.
- **Benchmarking:** Compare Estelle's Au and Sb development cases with Alaskan peers (e.g., Whistler for Au/Cu, Perpetua for Sb processing standards) leveraging S-K 1300 TRS sensitivity tables.
- **Engineering:** Advance PFS trade-offs for RPM starter and integrated Korbel+RPM flowsheet (ore sorting, gravity, flotation/leach); update costs and power options as road timing clarifies.

- **Au–Sb co-development modeling:** Build an integrated Au-Sb scenario reflecting DPA-enabled Sb pricing/offtake assumptions and refinery schedule at Port MacKenzie; include ESG permitting critical path and CAPEX.

Appendix: Key Facts

Claims and ADLs

803 State claims; detailed ADL ledger (Oxide/Korbel/Stoney/Styx/Emerald/Estelle series) included in S-K 1300 TRS Appendix (Table 26-1).

Processing concept

Flotation–regrind–leach; Korbel ore sorting uplift; RPM gravity/flotation testwork under expansion.

Key cut-offs used in TRS

0.15 g/t (Korbel/Cathedral), 0.20 g/t (RPM); US\$2,000/oz Au pit shells; MIK resource methodology.

Road status

AIDEA has filed USACE CWA 404 for West Susitna; environmental studies and NEPA review initiated; separate mine-site permits to follow.

Green/Red Flag Summary

Green: DPA Title III funding; 514 km² tenure; 5.17 Moz S-K 1300 + 9.9 Moz JORC; ore sorting in flowsheet; AIDEA road in permitting; State-land tenure; refinery site secured at Port MacKenzie.

Red: JV/title clarity (ARR vs. AK Custom Mining LLC); multi-agency permit stack (404/401/APDES/DNR); road dependency; scoping/IA-level economics; Sb processing ESG/permitting scrutiny.

Note on data sources

This profile synthesizes Nova's 2025 Form 20-F and ASX/SEC disclosures, the S-K 1300 TRS (Jan 31, 2024), historical technical reports and Millrock-era records, AIDEA road filings status, and Nova/ARR federal-funding announcements. Resource and permitting statements are as cited above; economic figures are study-level and subject to change with PFS/DFS outcomes.