



PetroMap: Saudi Subsurface Intelligence

Aramco Pain Points and How We Help

نقاط احتياج أرامكو وكيف نساعد

REPORT DATE

2026-07-10

PREPARED FOR

Saudi Aramco upstream / subsurface

POSITIONING

Complementary, pilot-grade decision support

PetroMap is a literature-derived screening, retrieval-augmented-generation (RAG) and 3D-visualization aid over public, peer-reviewed and open-source subsurface knowledge. It is designed to sit alongside Aramco's proprietary systems, not to replace them. Every lead is a hypothesis drawn from public literature and validated by Aramco's own engineers against their own data.

بتروماب أداة فرز واسترجاع معزز وتصور ثلاثي الأبعاد مبنية على الأدبيات العلمية العامة والمفتوحة المصدر. صُممت لتعمل إلى جانب أنظمة أرامكو الخاصة، لا لتحل محلها. كل استنتاج هو فرضية مستمدة من الأدبيات العامة يتحقق منها مهندسو أرامكو مقابل بياناتهم الخاصة.

Confidential business proposal. All source-rock, play-fairway and reservoir statements below are literature-derived hypotheses, not proven reserves or proprietary interpretations.

Pain points and how PetroMap helps

نقاط الاحتياج وكيف يساعد بتروماب

Seven items sourced 2026-07-10. Each states the real problem with its public source, then the honest, complementary role PetroMap can play. Priority reflects how well an over-public-literature tool fits, not Aramco's internal urgency.

P5 Rub' al Khali exploration screening

HIGH

فرز استكشاف حوض الربع الخالي

THE PROBLEM

One of Earth's most underexplored basins; chasing Qusaiba-sourced unconventional potential (14 new fields announced Apr 2025).

HOW PETROMAP HELPS

Sweetest honest match: literature-derived petroleum-systems / source-rock prospectivity screening plus 3D play-fairway triage that explorationists validate against their own seismic. Public knowledge base only.

الأنسب بصدق: فرز أولي لأنظمة النفط والصخور المصدرية ومثلثات المجال الاستكشافي ثلاثية الأبعاد من الأدبيات العامة، يتحقق منها الجيولوجيون مقابل بياناتهم الزلزالية.

Source: aapg.org/news-and-media/explorer/underexplored-rub-al-khali-basin-could-hold-major-unconventional-potential

P4 Jafurah frac design + water sourcing

HIGH

تصميم التكسير وتوفير المياه في الجافورة

THE PROBLEM

Designing fracs and sourcing/recycling water for a \$100B unconventional program in an arid basin; seawater fracturing plus produced-water recycling.

HOW PETROMAP HELPS

RAG over public tight-gas/shale completion and water-management literature for frac-design and water-treatment technology screening. Strong as an early pilot; Jafurah is newer, so less analog-constrained.

استرجاع معزز فوق أدبيات إكمال الغاز الصخري وإدارة المياه العامة لفرز تصميم التكسير ومعالجة المياه. قوي كتجربة مبكرة.

Source: jpt.spe.org/saudi-aramco-brings-jafurah-unconventional-gas-field-onstream

P6 CCS / CO2 plume monitoring and MRV (Jubail)**HIGH****مراقبة سحابة ثاني أكسيد الكربون والقياس والتحقق (الجبيل)****THE PROBLEM**

A 9-Mtpa CCS hub injecting into a saline aquifer needs robust plume monitoring and MRV.

HOW PETROMAP HELPS

3D-visualization plus literature-RAG layer for CO2-plume methods, monitoring-well design and MRV protocol scanning. Pilot decision-support. No named MRV tender was found, so the need is inferred from the project.

طبقة تصور ثلاثي الأبعاد واسترجاع معزز لطرق مراقبة سحابة ثاني أكسيد الكربون وتصميم آبار الرصد وبروتوكولات القياس والتحقق. دعم قرار للتجربة.

Source: ccushub.ogci.com/focus_hubs/aramco-jubail-ccs-hub

P3 Ghawar waterflood conformance**MEDIUM****تحكم في اجتياح الماء في حقل الغوار****THE PROBLEM**

Managing the advancing water front and conformance across a peripheral seawater flood is a continuous optimization problem.

HOW PETROMAP HELPS

Screening tool over public conformance-control literature (polymer, gel, smart/low-salinity water) ranking techniques against public analog reservoirs. Feeds Aramco engineers; no Ghawar proprietary data.

أداة فرز فوق أدبيات التحكم في الاجتياح العامة (البوليمر، الهلام، المياه منخفضة الملوحة) ترتب التقنيات مقابل مكامن مماثلة عامة. دون أي بيانات خاصة بالغوار.

Source: jpt.spe.org/saudi-aramco-boosts-rd-efforts-increase-oil-recovery

P1 Seismic imaging throughput**MEDIUM****إنتاجية التصوير الزلزالي****THE PROBLEM**

Needs far more compute for high-resolution depth imaging at scale (bought 7x more upstream capacity).

HOW PETROMAP HELPS

NOT a competitor to GeoDRIVE. A RAG over public imaging literature (FWI, LSM, ML denoising) as a method-triage front-end to shortlist algorithms to test. A knowledge accelerator, not an imaging engine.

ليست منافسة لـ GeoDRIVE. استرجاع معزز فوق أدبيات التصوير العامة كواجهة فرز للطرق لاختصار الخوارزميات المرشحة للاختبار. مسرّع معرفة لا محرك تصوير.

Source: aramco.com/en/news-media/news/2026/aramco-and-solutions-by-stc-collaborate-to-deploy-next-generation-supercomputer

P7 AI/HPC subsurface second-opinion**MEDIUM****رأي ثانٍ للذكاء الاصطناعي في باطن الأرض****THE PROBLEM**

Scaling generative AI (Metabrain, 250B to trillion params) for well placement and seismic pattern detection on proprietary data.

HOW PETROMAP HELPS

Do NOT position against Metabrain or EXPEC ARC. Offer a literature-grounded, CITABLE second opinion plus provenance layer, useful precisely because internal models trained on proprietary data cannot cite external peer-reviewed method provenance.

لا نضع أنفسنا في مواجهة Metabrain أو EXPEC ARC. نقدم رأياً ثانياً قابلاً للاستشهاد وطبقة إثبات مصدر، مفيدة لأن النماذج الداخلية لا تستطيع الاستشهاد بمصادر منهجية خارجية محكمة.

Source: offshore-technology.com/news/saudi-aramco-unveils-industry-first-generative-ai-model

P11 Data governance + in-Kingdom residency**CONSTRAINT****حوكمة البيانات والإقامة داخل المملكة****THE PROBLEM**

90+ years / 7T data points under PDPL (enforced 14 Sep 2024) plus NCA CCC-2:2024 in-Kingdom residency for critical national infrastructure.

HOW PETROMAP HELPS

A design constraint, not a gap: any tool must run in-Kingdom and ingest only public/non-proprietary corpora unless deployed inside Aramco. A credibility differentiator if built for from day one.

قيد تصميمي لا ثغرة: يجب أن تعمل أي أداة داخل المملكة وأن تستهلك فقط مصادر عامة غير خاصة ما لم تُنشر داخل أرامكو. ميزة مصداقية إن روعيت من اليوم الأول.

Source: nca.gov.sa/en/regulatory-documents/controls-list/ccc

How to engage

كيفية التعامل والدخول

Aramco does not publish open upstream-software RFPs. The route below reflects the real, gated procurement path. Timelines are indicative and secondary-sourced.

Primary channel

SAP Ariba e-Marketplace (gated; no open upstream-software RFPs published).

Timeline

Ariba registration roughly 6 to 12 weeks; company to Approved Vendor List roughly 4 to 9 months; a novel-software award cycle runs longer (pilot, then proof, then procure).

COMPLIANCE GATES

- MISA license plus Commercial Registration (in-Kingdom entity).
- iktva localization survey plus 5-year plan.
- SACS-002 Cybersecurity Compliance Certificate (CCC / CCC+).
- PDPL plus NCA CCC-2:2024 in-Kingdom data residency.

SOFT ENTRY POINTS

Wa'ed Ventures (\$500M VC, 12-month incubation)

Aramco Digital SRM (srm@aramcodigital.com)

Sources: aramco.com/en/what-we-do/suppliers/become-a-supplier · iktva.sa · aramco.com SACS-002 third-party cybersecurity standard (PDF).

What this is NOT

ما هذا ليس عليه

Honesty box

صندوق الأمانة: بتروماب ليس بديلاً عن أنظمة أرامكو الخاصة.

- NOT a replacement for EXPEC ARC, GeoDRIVE or Metabrain. It is a complementary, pilot-grade aid that works over public literature only.
- NOT an imaging or reservoir-simulation engine. It shortlists and cites published methods for Aramco's own engines and engineers to run.
- NOT a source of proven reserves or proprietary interpretations. Every lead is a literature-derived hypothesis to be validated against Aramco's own seismic and well data.
- NOT trained on, and does not ingest, Aramco proprietary data unless deployed inside Aramco's in-Kingdom environment.
- NO invented metrics. Figures cited here are from the public sources listed against each pain point; some are secondary and flagged as such in the underlying data.

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