PROPOSAL FOR RECONNAISSANCE SURVEY (G-4) FOR POTASH AND HALITE MINERALS IN SAIYADWALA BLOCK, DISTRICT- FAZILKA, PUNJAB

COMMODITY: POTASH AND HALITE MINERALS

BY

GEOLOGICAL SURVEY OF INDIA STATE UNIT: PUNJAB, HARYANA AND HIMACHAL PRADESH

PLACE: CHANDIGARH
DATE: 17/04/2026

Summary of the Block for G4 Level Exploration
GENERAL INFORMATION ABOUT THE BLOCK

	Features	Details
	Block ID	Saiyadwala Block
	Exploration Agency	Geological Survey of India
	Commodity	Potash & Halite
	Mineral Belt	Punjab Evaporite Basin
	Completion period with entire Time schedule to complete the project	1 year
	Objectives	1. To evaluate the resource potentiality of potash and halite mineralization. 2. To estimate reconnaissance mineral resource (334) and grade for potash and Halite as per UNFC and MEMC- 2015. 3. To facilitate the State government to auction the block as a composite lease.
	Whether the work will be carried out by the proposed agency or through outsourcing	Work will be carried out by the proposed agency (GSI).
	Name/Number of Geoscientists	Two no. Geoscientists
	Expected Field days	1G — 100 days 1G — 100 days Supervisory Officer — 7 days
1.	**Location**	
	Block boundary corner points	
	Villages	Saiyadwala

Cardinal Point	Latitude (DD)	Longitude (DD)	Latitude (DMS)	Longitude (DMS)
A	30.141360°N	74.029532°E	30° 08′ 28.90″ N	74° 01′ 46.32″ E
B	30.156198°N	74.267188°E	30° 09′ 22.31″ N	74° 16′ 01.88″ E
C	30.112863°N	74.257446°E	30° 06′ 46.31″ N	74° 15′ 26.81″ E
D	30.097200°N	74.028506°E	30° 05′ 49.92″ N	74° 01′ 42.62″ E

	Tehsil/Taluk	Abohar
	District	Fazilka
	State	Punjab
2.	**Area**	
	Block Area	108 Sq. Km.
	Forest Area	Private Agricultural land
	Government Land Area	Data not available
	Charagaha	Data not available
	Private Land Area	Most of the area is agricultural land
3.	**Accessibility**	
	Nearest Rail Head	Abohar
	Road	The area can be accessed via National Highway 7, 62 and 354E
	Airport	Bhatinda in NE Direction (70 km)
4.	**Hydrography**	
	Local Surface Drainage Pattern (Channels)	Small seasonal nalas and Sirhind feeder canal
5.	**Climate**	
	Mean Annual Rainfall	The annual average rainfall recorded is about 170 mm
	Temperatures (December) (Minimum) Temperatures (June) (Maximum)	Minimum temperatures 4^{O}C. Maximum temperatures up to 46^{O}C. hot summers where temperatures can reach 41°C–48°C, and cool winters with temperatures falling to 2°C–4°C.
6.	**Topography**	
	Toposheet Number	44 J/4
	Morphology of the Area	The district area forms a part of Indo-Gangetic plain and Sutlej Sub basin of main Indus basin. The area as a whole is almost flat with a gentle slope towards the south westerly direction. The physiographic of the district is broadly classified from north to south into four distinct features i.e. Upland plain, Sand dune tract, younger flood pain and active flood plain of Sutlej

7.	**Availability of baseline geosciences data**	
	Geological Map	Geological map on 1: 50,000 scale (Source: GSI)
	(1:50K/25K)	
	Geochemical Map	NGCM Map (Source: Bhukosh, GSI)
	Geophysical Map (Aeromagnetic, ground geophysical, Regional as well as local scale GP maps)	Gravity and Magnetic Map (Source: Bhukosh,GSI)

8.	**Justification for taking up G4 level Exploration**	1. The Nagaur-Ganganagar Evaporite basin (NGEB) of Rajasthan extends into Punjab covering parts of erstwhile Bhatinda, Faridkot Districts (now Fazilka, Sri Muktsar Sahib and Mansa Districts) in southern Punjab and parts of Sirsa District of Haryana. Occurrence of polymetalic mineralisation of in imaliya is well known and GSI & DGM, MP have been exploring this region since 1952. 2. The basin trends NNE-SSW with dip of 2º -3º with dip varying up to 28º at places due to local deformations. The area comprises geological formations from the Neo-proterozoic through Early Cambrian and continues through Permo-Carboniferous, Jurassic, Tertiary to Quaternary sequences with little deformation. 3. The Hanseran Evaporite Group (HEG) comprises cyclic deposits of halite (most dominant constituent) containing potash minerals (polyhalite, sylvite, sylvinite, langbeinite and carnallite), alternating and separated by a sequence with anhydrite, clay, dolomite and magnesite, occasionally glauberite, and rarely vanthoffite (Kumar and Chandra, 2005). 4. Based on the results of drilling data and geophysical surveys from extensive exploration for potash mineralization during 1974-1991 by GSI, eight sub-basins of potash mineralization containing over 2% K were identified in parts of Rajasthan namely Lakhasar, Bikaner, Gharsisar, Hanseran, Arjunsar, Jaitpur, Bharusari and Satipura.

PROPOSAL FOR RECONNAISSANCE SURVEY (G-4) FOR POTASH IN SAIYADWALA BLOCK, FAZILKA DISTRICT, PUNJAB.

INTRODUCTION

1.1.0 Based on the decisions taken in 64th CGPB meeting dated 19/01/2024, two G-4 projects were proposed for FS 2025-26 in the Gidranwali-Azimgarh Block and Rajpura- Rajawali Block, Fazilka District, Punjab, where in 6 scout vertical boreholes of 850 m±10% depth each has been proposed in part of T.S. No. 44 J/04 and 44 K/01.

1.1.1 On further recommendations and instructions from Ministry of Mines as well as Department of Mines and Geology, Punjab State, a G4 stage mineral investigation programme is proposed in Saiyadwala Block in the northern extension of Gidranwali-Azimgarh Block of FS 2025-26 for systematic coverage of PEB falling in parts of Punjab.

1.1.2 The proposed AOI is approximately 108 sq km and is mostly covered by Quaternary sediments (Older Alluvium of Middle to Late Pleistocene). The subsurface geology based on borehole data (PFSBH-01) suggests that Quaternary sediment is encountered upto ~250 m bgl, Tertiary rocks (Marh/Palana Formation) from 252 m to 346, rocks of Nagaur Group from 346 to 456m and Evaporite Group (Cambrian) starts from 456 m to 786 m. Potash bearing minerals are restricted mostly to pink halite of Evaporite Group and its contact zone with Nagaur Group.

1.1.3 Five tentative BH points are also marked in the proposed Block with a BH spacing of ~ 4-5kms, with following co-ordinates:

BH	Longitude	Latitude
PFSABH-01	74.039748°	30.120480°
PFSABH-02	74.078568°	30.112721°
PFSABH-03	74.118611°	30.121784°
PFSABH-04	74.163295°	30.119254°
PFSABH-05	74.233954°	30.124511°

1.1.4 The proposed investigation aims at tracing the lateral continuity of the previously identified area of mineralization (mainly potash) in the Evaporite Basin of Punjab and estimating reconnaissance resources of potash.

2.1.0 BACKGROUND INFORMATION

2.1.1 In the Punjab and Haryana, Dey and Saxena (F.S. 1981-84) carried out integrated search for potash bearing evaporites in parts of the then Faridkot and Ferozepur Districts of Punjab (now Fazilka, Sri Muktsar Sahib, Mansa Districts) and Sirsa District of Haryana and three bore holes (H.P. series, F.S. 1981-85) were drilled. The two boreholes (HP-1 and HP-2) were spaced 52 km apart and covered two Districts (Sirsa District of Haryana and erstwhile Faridkot District of Punjab).

2.1.2 The first borehole HP-1 was located at Maujgarh (Sirsa District, Haryana), below the Quaternary overburden of 305 m, low order evaporites (anhydrite, gypsum dolomite, limestone with intervening marls) were encountered at depth of 411.55 - 461.55 m. Two anhydrite zones were encountered around 434m (0.65m thick anhydrite) and 445.75-448.25 m (2.50 m thick anhydrite). The borehole was closed at a depth of 528.60 m within the Jodhpur sandstones, which form the floor of the Evaporite Basin.The second borehole (HP-2) in Punjab intersected five cycles of evaporites with the bottom two cycles containing halite. Total 130.77m of evaporites (halite with polyhalite, anhydrite gypsum, dolomite and limestone with associated marl) were intersected at depth from 475.05 m to 605.82 m. Halite constitutes a thickness of 47.78 m. The two-halite cycles are separated by 2.82 m thick zones of clay and anhydrite. The chemical analysis of old borehole (HP-2) is not appended in the circulated report, Dey and Saxena (FS: 1981-82, 1982-83 and 1984).

2.1.3 Sharma (F.S. 1985-86) carried out integrated search for potash bearing evaporites in parts of erstwhile Ferozpur District, Punjab. Borehole (HP- 3) located at Sadhuwali in Sri Ganganagar District in Rajasthan was projected to be drilled upto about 1000 m to intersect the various evaporite zones, but could be drilled only up to 634.25m due to drilling problems and was abandoned.

2.1.4 Digvijay (FS: 2018-2019) drilled one borehole (PMQB-01) in Qabrwala Block, falling in part of Sri Muktsar Sahib District of Punjab. The borehole could not reach the approved depth and geophysical logging and borehole deviation test were not carried out. The borehole was abandoned at 613 m. On the basis of abandoned borehole 5.98 million tonnes with an average grade of 3.90 K% at 3.5% cut off with thickness of 14.7m was estimated.

2.1.5 Digvijay (2022) carried out reconnaissance survey for potash in FS 2019-21 in Sherewala-Shergarh-Ramsra Block to delineate its sub-surface extension. A total of 2499 m was drilled in three boreholes. The cumulative thickness of potash zone (K+) is 20.34m, with average grade of 3.44% K+ at 2% K+ cut-off. The cumulative thickness of potash zone (K+) is 10.92m, with average grade of 3.55% K+ at 3% K+ cut-off. In PFSBH-02,The cumulative thickness of potash zone (K+) is 16.1 m, with average grade of 2.72% K+ at 2% K+ cut-off, the cumulative thickness of potash zone (K+) is 6m, with average grade of 3.59% K+ at 3% K+ cut-off. In PFSBH-03, the cumulative thickness of potash zone (K+) is 115.15m, with average grade of 3.94% K+ at 2% K+ cut-off. The cumulative thickness of potash zone (K+) is 94.25m, with average grade of 4.29% K+ at 3% K+ cut-off. Total reconnaissance resource (334) of potash (K+) on the basis of analytical data of three boreholes (PFSBH-01, PFSBH-02 and PFSBH-03) is 409.32 million tonnes at 2% K+ cut off with average grade of 3.74 K+%, total resource of potash (K+) is 300.15 million tonnes at 3% K+ cut-off with average grade of 4.18 K+%.

2.1.6 Digvijay et. al (2024) in FS: 2022-2023, drilled a total of five scout boreholes PFSBH-04, PFSBH-05, PFSBH-06 PFSBH-07 and PFSBH-08 in Shergarh-Dalmirkhera Block at a

spacing of 04 km approx. in grid pattern with a total drilling of 4518 m. The total potash (K+) resource were of 202.45 million tonnes (MT) with average grade of 3.42% K and 4.11% K_2O at 2% cut-off, 22.86 million tonnes (MT) with average grade of 6.96% K and 8.37 % K_2O at 5% cut-off and 4.86 million tonnes (MT) with average grade of 10.13%K and 12.19% K_2O at 8% cut-off.

3.1.0 LOCATION AND ACCESSIBILITY

3.1.1 The Saiyadwala Block encompasses the region delineated in Survey of India Toposheet 44 J/04 spanning an area of 108 square kilometers. This geographical expanse spans across portions of Fazilka district within the state of Punjab. The study area conveniently located approximately 70 km from Bhatinda on NH-7 and around 12 km from Abohar, also accessible via NH-62 and NH-354E. The Abohar Railway Station, situated in the area of the block, serves as the nearest rail link. The Bhatinda airport is the closest air transportation hub.

CARDINAL POINT COORDINATE OF SAIYADWALA BLOCK, DISTRICT: FAZILKA, PUNJAB

(G-4 LEVEL)

Cardinal Point	Latitude (DD)	Longitude (DD)	Latitude (DMS)	Longitude (DMS)
A	30.141360°N	74.029532°E	30° 08′ 28.90″ N	74° 01′ 46.32″ E
B	30.156198°N	74.267188°E	30° 09′ 22.31″ N	74° 16′ 01.88″ E
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4.1.0 PHYSIOGRAPHY, DRAINAGE AND CLIMATE

4.1.1 The Saiyadwala block falling in south-western Punjab is northern extension of Nagaur-Ganganagar Evaporite Basin of Rajasthan.

4.1.2 The Saiyadwala block and its surroundings features a diverse drainage pattern influenced by both structure and lithology.

4.1.3 The investigation area falls in the semi-arid climatic region. The temperature in summer ranges between 30°C to 47°C and the temperature in winter ranges between 04° C to 30°C. The mean annual rainfall is 170mm.

5.1.0 PREVIOUS WORK

5.1.1 The evaporite minerals like gypsum, anhydrite and halite were known from Nagaur and Bikaner districts since 1930's. Particular mention may be made of the reported occurrence of halite in Bikaner (P.K.Ghosh, 1952), gypsum in Nagaur (Roy Chowdhury et al., 1965) and the intersection of anhydrite in the boreholes drilled by Central Groundwater Board (CGWB) and Oil and Natural Gas Commission (ONGC).

5.1.2 George I. Smith (1968) of USGS evaluated the data collected by GSI and identified that Nagaur-Ganganagar Basin is one of the area, geologically most favourable for occurrence of potash-bearing marine evaporate deposit.

5.1.3 Jones (1970) studied the halite deposits of the Salt Range, Pakistan, suggested the Nagaur Basin to be a prospective halite bearing area, Sinha et al. (1973) of CGWB, while exploring for ground water, reported halite from Lakhasar at a depth of 541m and correlated it with Kohat Salt sequence of Pakistan. Presence of halite at a depth of 469 m was further reported by CGWB from Satipura in Sri Ganganagar district, Rajasthan.

5.1.4 Dey, R.C. and Saxena, S.M (FS: 1981-83) carried out integrated search for potash bearing evaporites in parts of Bhatinda, Faridkot and Ferozepur districts of Punjab and Sirsa district of Haryana. Total three boreholes were drilled. Two boreholes (HP-1 and HP-2) were drilled in FS: 1981-83. The two boreholes (HP-1 and HP-2) were spaced 52 km apart and covered two districts (Sirsa district of Haryana and erst while Faridkot district of Punjab). The first borehole HP-1 was located at Maujgarh to test the Bouguer low gravity anomaly (of the order of –36 m.gal).

5.1.5 Below the Quaternary overburden of 305m, low order evaporites (anhydrite, gypsum dolomite, limestone with intervening marls) were encountered at depth of 411.55 - 461.55 m. Two anhydrite zones were encountered around 434m (0.65m thick anhydrite) and 445.75-448.25m (2.50 m thick anhydrite). The borehole was closed at a depth of 528.60 m within the Jodhpur sandstones, which form the floor of the evaporite basin. The second

borehole (HP-2) was located near Qabrwala (erst while Faridkot district of Punjab now re organised to Sri Muktsar Sahib District, Punjab).

5.1.6 Raj Digvijay et al., (2019-21) carried out reconnaissance survey for potash, in Sherewala Shergarh-Ramsara area falling in part of Fazilka district of Punjab, G-4 stage, drilled three boreholes PFSBH-01, 02 and 03, 10 km apart and established the sub-surface extension of potash and halite mineralization in Punjab Evaporite Basin. Three boreholes were drilled with total meterage of 2499 m. Total resource of potash K+ on the basis of three boreholes (PFSBH-01, PFSBH-02 and PFSBH-03) is 409.32 million tonnes at 2% K+cut off with average grade of 3.74 K+%, total resource of potash K+ is 300.15 million tonnes at 3% K+cut-off with average grade of 4.18 K+%. Total inferred resource of halite on the basis of two boreholes (PFSBH-01, PFSBH-02) 1548.36 MT average grade of 35.93% Na (natural cut-off) and with over 80% NaCl, resource have been delineated in Punjab Evaporite Basin. It is also to be mentioned that the halite layer often observed containing impurities of clay and anhydrite. Thus keeping in view of impurities present in each halite layer 5% deduction of resource may be done and the total resource of halite (NaCl) to be reconnaissance as 1470.88 MT, with average grade of 35.93% Na in natural cut-off was estimated in Punjab Evaporite Basin. The resource was estimated as under 'Reconnaissance' category.

6.1.0 GEOLOGY OF THE AREA

6.1.1 The Nagaur-Ganganagar Evaporite Basin is intra-cratonic basin in which marine sediments of Marwar Supergroup were deposited on the basement rocks of Malani Igneous Suite and/or Delhi metamorphites. This basin is considered the southernmost continuation of this large Eocambrian basin of which Salt Range of Pakistan forms the northern part (Geol. Surv. Ind., Special Pub. No.62). According to Virendra Kumar et al (2005) Nagaur-Ganganagar Basin, covers over 1,00,000 sq km and in parts of Ganganagar, Hanumangarh, Churu, Bikaner, Nagaur, Jodhpur, Jaisalmer and Pali districts of Rajasthan, Sirsa district of Haryana and erst while Faridkot and Bhatinda districts of Punjab.

6.1.2 Geologically the study area is a part of Indo-Gangetic alluvial plain. The area is covered by thick pile of fluvial sediments which are classified as Older Alluvium. It is extensively developed and is composed of multicyclic sequence of brown to grey silt, clay with kankar and reddish brown to grey micaceous sand.

6.1.3 **Common rock types**

Metasedimentary litho-units encompass both clastic and non-clastic compositions. The clastic components consist of Quartzite, Phyllite, and BIF, while the non-clastic components are primarily dolomite with minor occurrences of cherts.

Quaternary sediments: The thickness of Quaternary sediments ranges from 252m to 396m. These sediments consist of cyclic sequences of loose sand and silty clay, with clasts made up of quartz, sandstone fragments, limestone/calcretes, and claystone

fragments.

Nagaur Group: The predominant brick red colour of the rocks of the Nagaur Group indicates that the sediments represent continental facies and these sediments were deposited under very shallow-marine conditions and had prolonged aerial exposure for intensive oxidation. The contact of Nagaur Group of rocks with underlying Evaporite Group is gradational in nature

Evaporite Group: From the subsurface data of borehole, it may be inferred that cumulative thickness halite cycle of Evaporite Group increase in southern part of the basin. The sub surface data of exploration reveals, that the deepest part of the Evaporite Basin is in southwest of Punjab Evaporite Basin.

The lithology of the Evaporite Group: The Evaporite Group is rocks constitute the prominent component of Clay, Carbonate rocks, Anhydrite and Halite with potash mineralization and. Clay: It is reported at the beginning of the halite cycles and inter-layers within the halite zone along with the intervening zones. It is reddish-brown to grey in colour.

Carbonate rocks: The carbonate rocks Dolomite and anhydrite dolomite have been recorded in Evaporite Group. These are light to dark grey, laminated to massive, and are interlayered in nature. Thin laminations of light grey and black dolomite may indicate seasonal variations during deposition. The grey dolomite is fine-grained, argillaceous in nature and emits foetid smell of natural crude hydrocarbons. It is very well observed in all the boreholes Thin laminations of light grey and black dolomite may indicate seasonal variations during deposition.

Anhydrite: Pink to white colour anhydrite is recorded in boreholes. It is mostly observed before the starting of each halite cycles. The pink colour may be due to the presence of ferric oxide in a supratidal environment. Stromatolites were observed in the anhydrite at places.

Halite: The halite is greyish white, turbid white to reddish brown in colour, medium to coarse grained, crystalline and translucent in nature. Fluid inclusions were also observed in the translucent halite at place in all boreholes. Mostly in bottom halite cycles, Polyhalite is recorded. The individual thickness of the polyhalite is varied from a few mm to a few meters.
The Evaporite Group of rocks are lying in between the underlying Jodhpur Group of rocks and overlying Nagaur Group of rocks

Jodhpur Group: Jodhpur Group of rock consists of sandstone of Terminal Neoproterozoic age. The sandstone of Jodhpur Group is considered as a basement for the Evaporite Group. The contact between Evaporite Group and Jodhpur Group of rocks is gradational in nature. The Jodhpur Group of rocks is represented by red to maroon, medium to fine grained sandstone and maroon claystone.

7.1.0 OBJECTIVE OF THE PROPOSED EXPLORATION PROGRAMME

The present exploration programme has been formulated to fulfill the following objectives:

1. The present work has been carried out to establish the sub-surface continuity of potash mineralization in Evaporite Basin falling in south western Punjab.

8.1.0 PROPOSED SCHEME OF EXPLORATION

8.1.1 In accordance with the objectives set for G-4 level exploration in Saiyadwala Block, the exploration programme is proposed to carry outline. The first phase comprises of Geological mapping, systematic drilling, core sampling, and other associated geological and laboratory work will be performed. Based on the outcome of the first phase of the exploration work the second phase include report writings and headquarter related works. The exploration shall be carried out as per Mineral (Evidence & Mineral Contents) Rule - 2015, Mineral Auction Rule-2015 and MMDR Amendment Act-2015. The details of different activities to be carried out are presented in subsequent paragraphs.

Phase- I

8.1.2 **Detailed Mapping:** Identified block area of 108 Sq. Km will be mapped on 1:25,000 scale. Rock types, their contact, structural features will be mapped in detail.

8.1.3 **Core Drilling:** The present exploration scheme is prepared by proposing 5 nos. of vertical boreholes based on the previous exploration programme.

8.1.4 **Core Logging:** Geological core logging will be carried out systematically by recording carefully the minute details and physical/lithological characters of the rock formations including colour, core recovery, grain size, weathered zone, texture, banding, mineralogical composition, micro-structural/structural details, shear zones, fracture

system, lithological variations along with visual estimate in respect of potash mineralization.

8.1.5 **Sample processing and chemical analysis:** After examination of the core, the mineralized zones were demarcated, and sampling zones/limits are fixed. The conventional method of sampling of drill cores was followed and it was restricted within the individual run of the borehole to minimize and restrict the effect of core loss, if any, within the drill run. The core sampling was based on change in lithology and mineralisation. The length of sample in mineralized zone was kept 3 m. and at places it varies from 0.25 m to 7m., depending on the change in lithology. Sample Preparation, Chemical analysis and laboratory procedures: The core was splitted longitudinally into two equal halves by core splitter. One half of core was kept in the core box while the other half was powdered manually to - 200 mesh size using mortar pestle. The powdered sample is then mixed properly and reduced unbiasedly by coning and quartering. One half is labelled and submitted to the chemical laboratory for analysis and other half as representative sample is preserved, as duplicate sample for further studies.

8.1.6 **Ore Microscopy**: Ten core samples from the mineralized zones in boreholes will be analyzed to identify ore mineral assemblages at various levels of intersection. These samples will be subjected to petrographic studies.
Determination of Specific gravity: To calculate the resource, volume of the ore body needs to be multiplied with a density factor. Hence, specific gravity will be determined from 10 nos. of core samples selected from the mineralized zones at various intersections.

9.1.0 QUANTUM OF WORK

9.1.1 The following quantum of work has been proposed for G4 level exploration for Potash and Halite minerals in Saiyadwala block:

Nature of work	**Work Proposed for FS: 2026-2027**	**a) Expected year of compilation** **b) Circulation of final report**	**Work proposed for FS:2026-2027**
1. Geological Survey i) Drilling (five scout boreholes of ~ 850 m each)	4250 m ± 10%	a) 31st March, 2027 b) 30th April, 2027	4250 m ± 10 %
2. Geological Mapping in 1:25000 scale	108 sq km		108 sq km
2.**Geophysical Borehole Logging (in m)**	2600 m (Excluding 330 mtrs Non coring in each BH)		2600 m

3. **Samples** i) Core samples ii) PS [@] iii) XRD [$]	450 nos. 10 nos. 10 nos.		450 nos. 10 nos. 10 nos.
4.**Chemical analysis** i) Core samples[#]	450 nos.		450 nos.

[#]Analysis of K_2O, K^+, CaO, MgO, SO_3, Al_2O_3, Cl^-, Br^-, NaCl, $MgSO_4$, KCl, $MgCl_2$, LOI, Na^+, Ba^+, Sr^+, Li^+ at Chemical Lab., Chandigarh/Lucknow. [@] Petrology Lab., Faridabad. [$] XRD Lab., Lucknow / Faridabad.

10.1.0 TIME SCHEDULE AND COST ESTIMATES

Name of the officer	Expected field stay (number of days)	Expected period FS: 2026-2027	
		From	To
1G	100 days	April, 2026	January, 2027
1G	100 days	April, 2026	January, 2027
Supervisory Officer	7 days	April, 2026	January, 2027

10.1.1 Laboratory Studies (FS: 2026-2027)

Activity	From	To	
Pre field laboratory component and reconnaissance for the assignment under consideration, finalization of report of the previous field season and planning for new programmes	April 2026	15th September 2026	
Geological study (Field work and collection, processing of samples and their submission)	15th September 2026	31st January 2027	
Chemical Study (Last date of sample submission)	1st February 2027	31st March 2027	
Chemical study (acquisition of chemical data)	1st February 2027	31st March 2027	

10.1.2 Report Submission

Submission of the first draft of report	30th April, 2027
Scrutiny of the report by Supervisory officer	1st May to 10th May 2027
Scrutiny of the report by Dy. DG & RMH-II	1st June to 15th June 2027
Finalization of the report	30th June 2027
Circulation of the report	30th June 2027

RECONNAISSANCE SURVEY FOR POTASH IN SAIYADWALA BLOCK, FAZILKA DISTRICT, PUNJAB.													
SCHEDULE TIME FOR THE PROPOSED G-4 LEVEL EXPLORATION													
S. No.	**Activities**	**Apr -26**	**May-26**	**Jun -26**	**Jul -26**	**Aug-26**	**Sep -26**	**Oct -26**	**Nov -26**	**Dec -26**	**Jan -27**	**Feb -27**	**Mar -27**
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	Geological Mapping (1:250000)												
2	Drilling (330 m non-coring followed by core drilling beyond 330m) (2 rigs)												
3	Geophysical Logging												
4	Geological Logging												
5	Core Sampling												
6	Laboratory Studies												
7	Report Writing/Peer Review												
*** Time loss on account of monsoon/agricultural activity/forest clearance/local law & order problems will be addition to above time line**													

Summary of Cost Estimates for Outsourcing of Drilling

Sl. No.	Item	Total Estimated Cost (Rs.)	Funding
1	Geology and Survey	0	By GSI
2	Drilling	3,26,00,000/-	NMEDT
3	Survey work	0	By GSI
4	Laboratory studies	0	By GSI
5	Geologist at HQ	0	By GSI
	Sub Total (1to 4)	3,26,00,000/-	
6	Exploration Report Preparation	0	By GSI
7	Proposal Preparation	0	By GSI
8	Peer review charges	0	By GSI
9	Sub Total (1to8)	3,26,00,000/-	
10	GST18%	58,68,000/-	
	Total:	3,84,68,000/-	
	Say Rs. In Lakh	**384.68**	

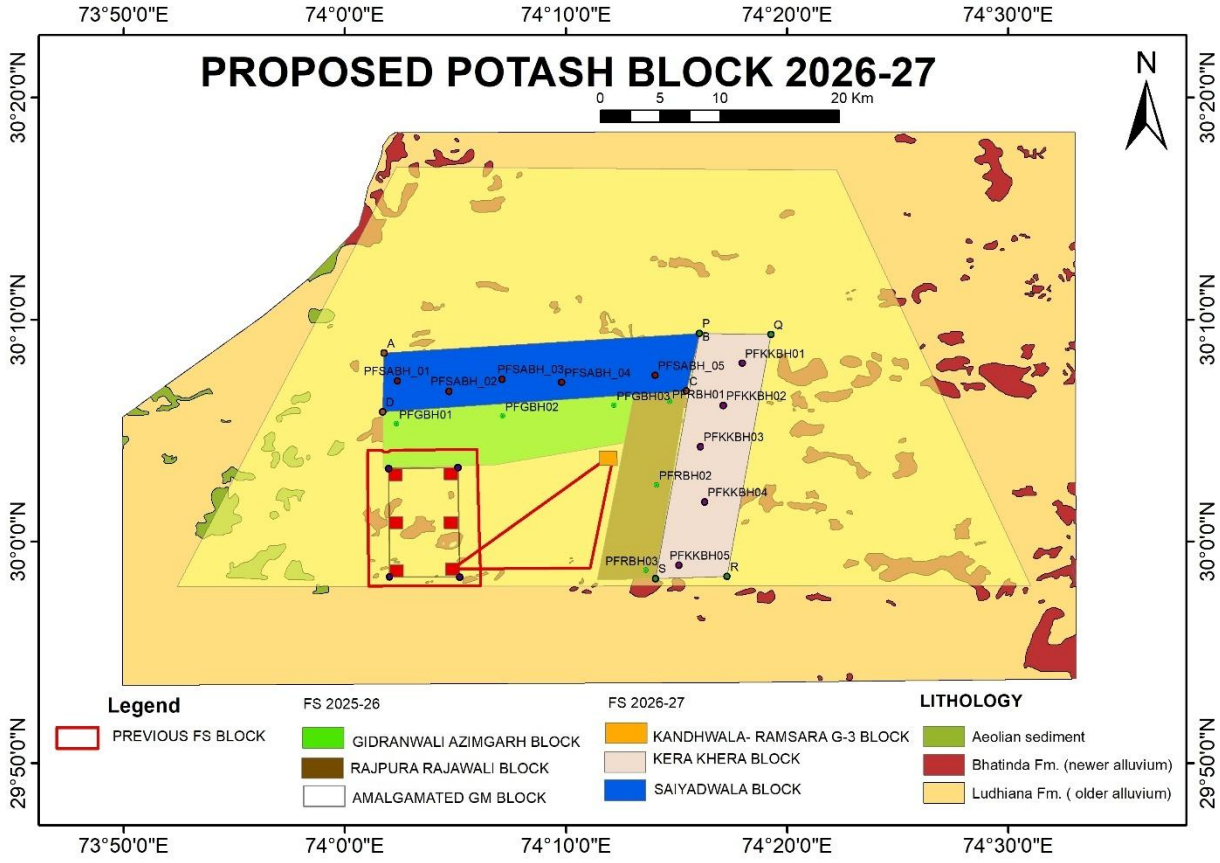
Enclosures:

- Location Map of the proposed block
- Regional Geological map showing proposed block
- Geological & borehole location Map
- Cost Sheet

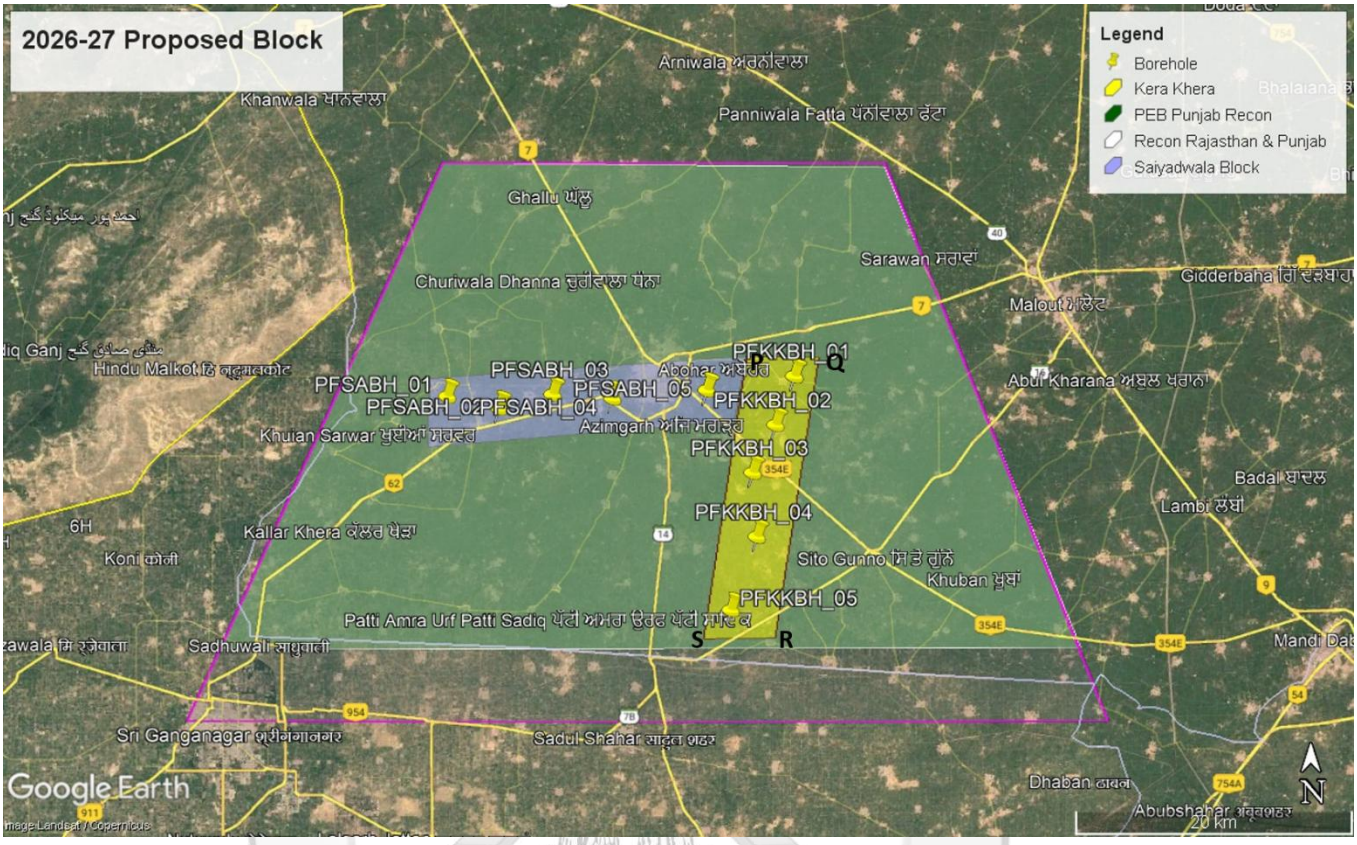
Item of Work			Unit	SoC-Item -Sl No. NMEDT	Rates as per NMET SoC 2025		Estimated Cost		Remarks
							Qty.	Total Amount (Rs)	
D. Drilling - OUT SOURCED									
18.a	DRILLING	Drilling in/ Drilling in Soft rock/ Strata: HQ size borehole up to 400m Depth and NQ Size beyond 400m depth in case of NQ size drilling is done before 400m depth, the rate shall decrease by 20%	m	2.2.1.1c		5,500.00	0	₹ 0.00	By NMEDT
18.b		Drilling in/ Drilling in Hard rock/ Strata: HQ size borehole up to 400m Depth and NQ Size beyond 400m depth in case of NQ size drilling is done before 400m depth, the rate shall decrease by 20%	m	2.2.1.1d		10,000.00	**2600**	₹ 2,60,00,000.00	
18.c		Drilling in/ Drilling in Very Hard rock/ Strata: HQ size borehole up to 400m Depth and NQ Size beyond 400m depth in case of NQ size drilling is done before 400m depth, the rate shall decrease by 20%	m	2.2.1.1e		12,650.00	0	₹ 0.00	
18.d		Drilling for Lignite	m	2.2.1.1a		4,783.00	0	₹ 0.00	

18.e		Drilling for Coal	m	2.2.1.1b		7,975.00	0	₹ 0.00	
18.a		Mechanised Auger Drilling for soft strata upto 30m depth	m	2.2.2.1		4,760.00	0	₹ 0.00	
18.b		Hand Auger drilling in soft strata upto 30 m depth	m	2.2.2.2		3,808.00	0	₹ 0.00	
18.c		RC Drilling	m	2.2.3		8,870.00	0	₹ 0.00	
18.d		Non coring drilling	m	2.2.4		4,000.00	1650	₹ 66,00,000.00	
		Total Drilling cost							
19	**DRILLING RELATED EXPENDITURE HEADS**	Borehole Deviation Survey by Multishot survey tool (interval 6m; azimuth and inclination to be recorded)	per shot	2.2.5		330.00	0	₹ 0.00	
20		Land / Crop Compensation (in case the BH falls in agricultural Land)	per BH	5.6		30,000.00	5	₹ 0.00	
21		Construction of concrete Pillar (12"x12"x30")	per borehole	2.2.7a		2,000.00	5	₹ 0.00	
22		Borehole plugging with cement	per borehole	2.2.8		10,000.00	5	₹ 0.00	
23		Miscellaneous Charges (Transportation of Drilling Rig, accommodation for Drilling Camp, Camp setting and winding, construction of approach road)	Lumpsum	0	2.2.9.3	For Drilling cost >2 Cr: 10 % of the Drilling Cost with a maximum ceiling of Rs. 25 Lkh	2,090,000	₹ 0.00	

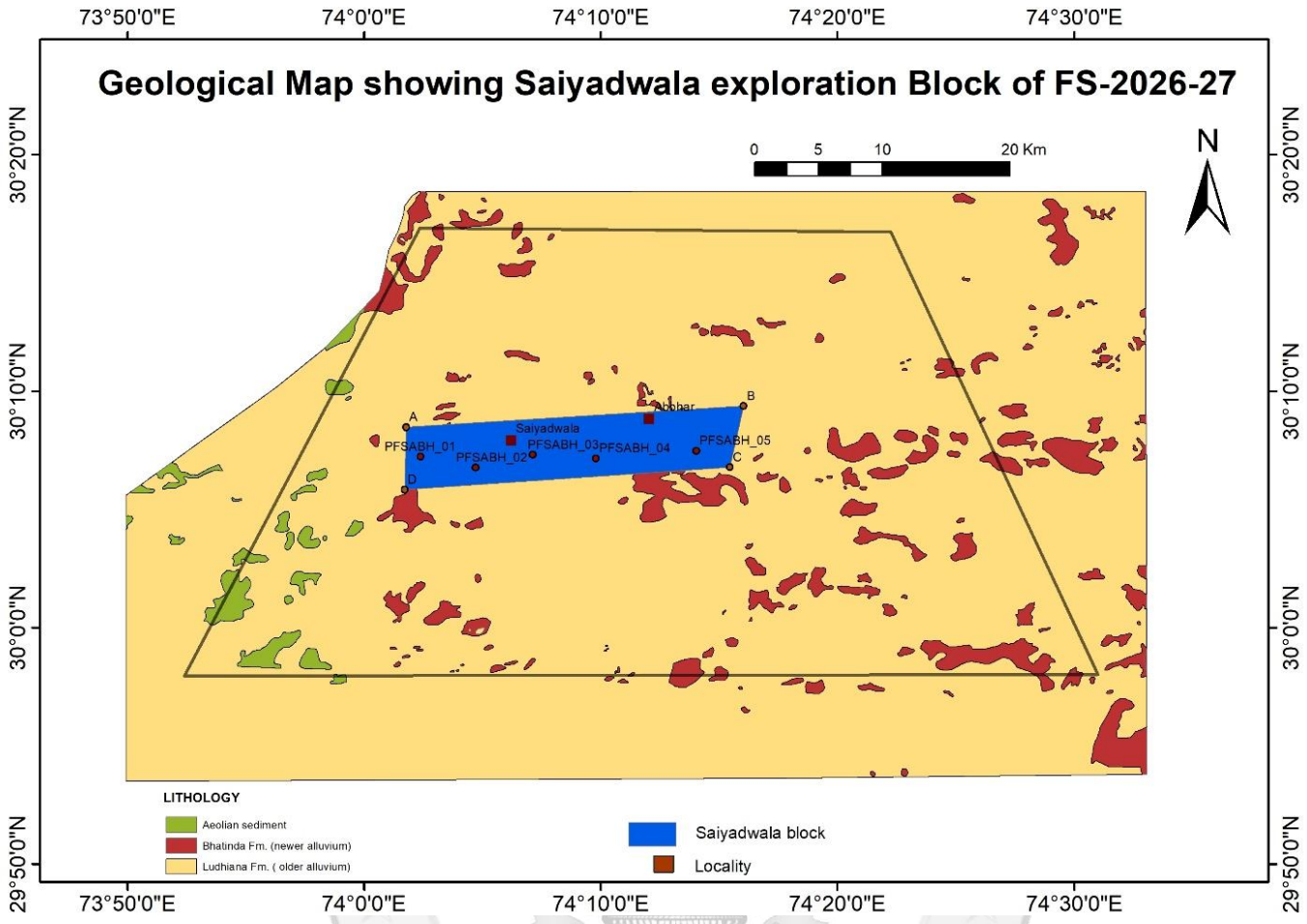
24		Drill Core Preservation- One complete BH plus mineralised cores of all the BHs of the block/ prospect to be preserved in GI Core boxes and subsequently transported to the notified core repository.	per m	X		1,590.00	2600	₹ 0.00	
Total Cost D- outsourced								**₹ 3,26,00,000.00**	
Total								**₹ 3,26,00,000.00**	
GST 18%								**₹ 58,68,000.00**	
Total Fund Required inclusive of 18% GST								**₹ 3,84,68,000.00**	
								3.85 Cr	



Proposed Saiyadwala Block (ABCD) shown with the Previous Potash exploration Blocks of Fazilka District, Punjab from FS 2019-21 to FS 2025-26



Google Map of Proposed Saiyadwala Block (ABCD), Fazilka District, Punjab



Geological Map of Proposed Saiyadwala Block (ABCD), Fazilka District, Punjab