

KHEWRA SALT MINES PROJECT

NAME: Mr. FAISAL ANJUM

ENROLLMENT: 03-298182-007

NAME: Mr. UMAIR IFTIKHAR

ENROLLMENT: 03-298182-035

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BAHRIA UNIVERSITY LAHORE CAMPUS

Submitted to: Mr. Shehzad Ahmad

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ACKNOWLEDGEMENT

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A special appreciation to the rest of Lab Staff, that helped us in our project. The whole department really helps us and prevail a true sense of cooperation.

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History of Khewra

Khewra salt mine is name after the Lord Mayo. Khewra salt mine is also known as Mayo Salt Mine. Khewra's salt reserves were found during his Indian campaign, when Alexandre crossed the Jhelum and Mianwali region. But not Alexander and his allies, but the horses of his army, finding that they laid the stones, were discovered. After he laughed the halite stones Ailing horses of his Army also recovered. Salt was traded in several markets throughout Central Asia during the MUGHAL ERA..

The mine was seized by the Sikhs when the Mughal Empire collapsed. Hari Singh Nalwa, commander-in-chair of the Sike, and Gulab Singh, Jammu's Raja, divided the Salt Range with the management. Former person managed Warcha mine and then after controlled by Khiwra. During Sikh rule, the salt was consumed and utilized as a source of income of that era.

The British developed the mine further in 1872 while following Sikh's territory. The mining resources were found inefficient with irregular and limited tunnels and accesses, which made it difficult and dangerous for employees to travel. Water was poorly available in the mine, and no storage facilities were required for mined salt. The rugged terrain to deal with these problems was very challenging only on the way to the mine. The road was levelled, the warehouses were constructed, the system was installed, entrances and tunnels improved and a much better salt excavation process was introduced. To order to regulate salt trafficking, fines have been imposed.

Overview of Khewra Salt Mines:

Khewra mine is situated in Chewra, in the north of Pind Dadan Khan, Jhelum, Punjab ,Pakistan administrative subdivision. Mine located in the Indo-Gangetic mountain range. It is the largest in Pakistan, the second largest in the world.

Mining Methodology

The Khewra Salt Mine is excavation of the early Cambrian evaporation of the Salt Range formation. It's composition consist of crystalline base layer interspersed with potash salts. The base is coated with gypsum marl, embedded in interlacing gypsum and dolomite beds with unusual shell seams. Strata are covered by 200m to 500m of Neoproterozoic rocks which are uplifted and abraded alongside with Salt Range formation.

Ediacaran timely evaporates from the Cambrian's ranges form tha Salt Range, which could tectonically absorbed the remnants of younger strata, is thrust southward over neoproteozoic rocks into Eocene by kilometers. The Salt range is a well-described fold / thrust range that is located at the south end of the Pothohar Plateau and which formed south of the Himalayas following ongoing collisions between India and Eurasia. The Salt Range.

The organic microfossils Palynomorphs are used to make references to the age and salt layers exposed inside the Khewra Salt Mine. Salt Range Formations. Birbal Sahnii stated the findings evidences of angiosperm, gymnosperm and insects inside the pit, he deemed to have come from the Eocene era.

Location

Salt Mines of Khewra are located at Jhelum District, PIND DADAN KHAN's Tehsil. It has an approach via the main road M2, about 30 km (20 miles) from the interchange of Lille when heading towards Pind Dadan Khan, on Lilla road. It is situated around 160km away from ISB and the LHR motorway. The mines are located in hills, that are mineral-enrich mountain which extends approximately 200k away from Jhelum river to the Indus river south of the Pothohar plateau. The Khewra mine is roughly 288 m above the sea level and 730 m from the mine entrance into the mountain. The subterranean mine covers a 110 km² area.

Production

Show of daily production of salt: estimates range from 82 million to 600 million tons for the entire mining salt reserves. Contains sulfate and humidity and traces of iron, zinc, copper, manganese, chromium and plumage. Salt exists in different colors like, reddish, pink, grey and white. Khewra is also known as the Himalayan salt.

The Khewra produce approx. 28.000t to 30.000t / year in the early years of British rule; it increased once a year to approx. 187 400 tons in the five fiscal year ending 1946–6 and by the systematical work of Dr. H. Warth to 136,824 tones over the two years ending 1949–50. The output of the mine in 2003 was estimated to be 385,000, which is nearly half the total production of halite in Pakistan. The tunnel would last for a further 350 years at this rate of output. The mine consists of 19 stories, eleven of which are under the surface. The mine extends from the gate to the mountains roughly 730 meters (2440 ft), which means its total tunnel duration is some 40K. Pillar procedure and space method are applied, In this 50% salt is mined and the other 50% is used to sustain the above. The inside of the mine is around

18–20 ° C (64–68 ° F) all year round. The Khewra Salt Mines Railways track of two feet (610 mm) is used to extract the salt from the mine in rail cars. The railways used during British times.

Pakistan's known for its Himalayan range. Used for bath salt, staple to a variety of industry, including a 1940 AkzoNobel sodium carbonate plant. Khewra salt is also used to produce objects e.g, lamps, vases, ashtray's that are exported to other countries. In Mughal period many craftsmen made their tableware and decorations and used halite for decorative and ornamental objects. Warth brought the use of the tool to chop pieces of art from Halite, because in his physical characteristics he found it almost like gypsum.

The government in 2008. In Pakistan, 17 rendering organisations, including Khewra salt mines, were decided to unload, but failed. Currently it is now being run by the MDCP of Pakistan.

Overview of PMDC

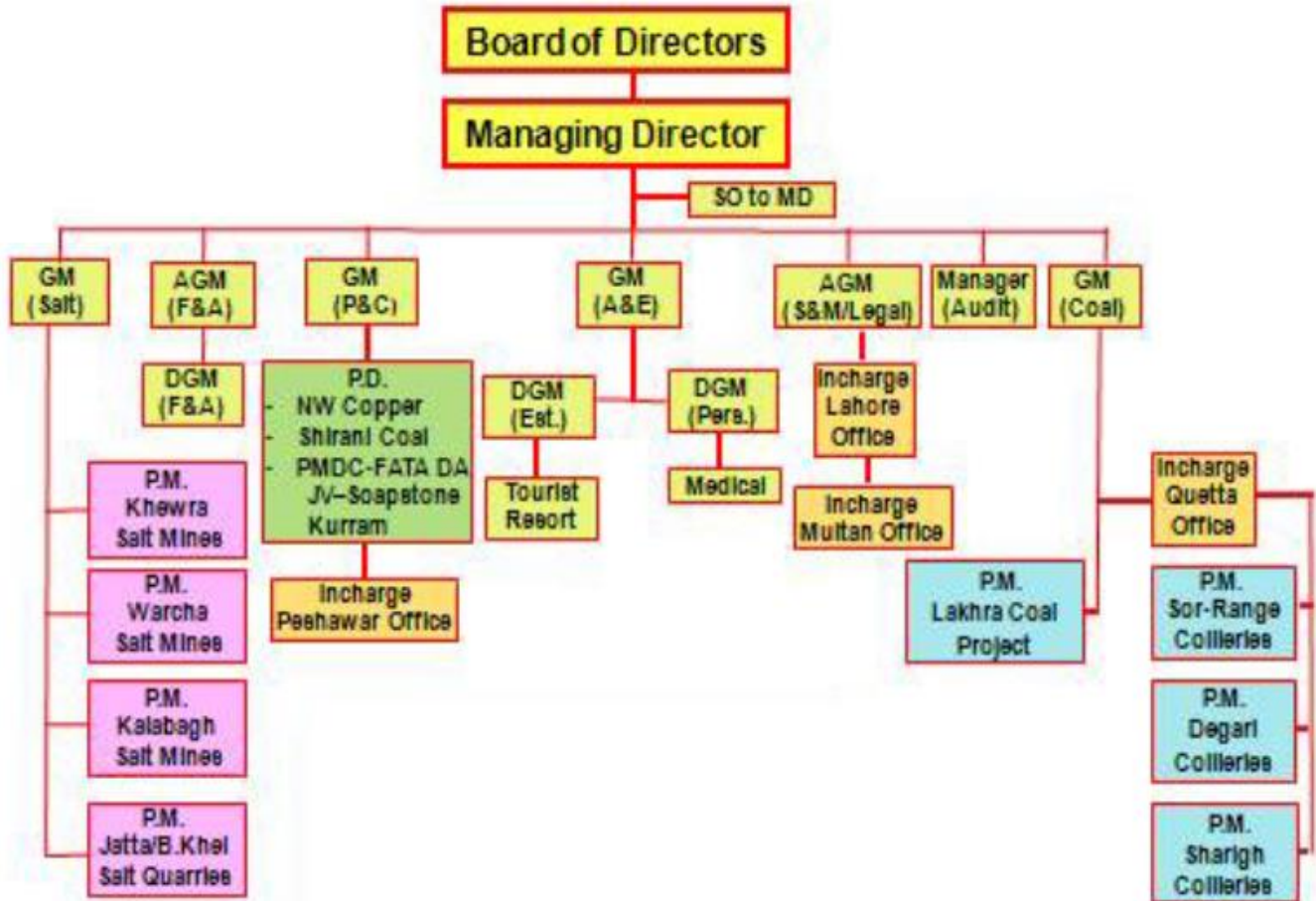
Govt's PMDC. A body responsible for M.o's administrative control. The GOVT of Pakistan, Petroleum and Natural Res. It was set up in 1974 to increase the mineral production activities in Pakistan with a capital of 1,000 million Rs.

Its task is to investigate and analyze commercial mineral deposits, draw up a scientific, fiscal, mining and marketing facilities study.

Four Coal Mines, four Salt Mines and a quarry of silica sand are operated by PMDC. PMDC accounts for 17% of the coal and 58% of the country's total salt output.

Find below the Organogram of the PMDC, showing its board of directors and below hierarchy in detail.

Organogram of PMDC



PMDC Projects

Salt Mines projects are given below:

- Warcha salt Mine
- Kalabagh Salt Mine
- Khewra Salt Mine
- Jatta Salt Mine
- Karak Salt Mine

Coal Mines Projects Under Control of PMDC

- Lakhra, Dadu
- Degari Collieries, Mastung Mines
- Coal Mines Sor-Range, Quetta
- Coal Mines Shahrig, Sibi

Consulting Services Rendered by the PMDC

Consultation services provided by PMDC in Different disciplines are Mine Feasibility Studies, Mine Survey, Mineral Exploration, Geochemical Exploration, Mine Development and Mineral Resources Evaluation.

Community Services

Health Related Facilities are available at Khewra Mines for the patients of Asthama So the Medical Facility is given at all the mines along with at HO. Health facilities are provided with very less charges to all the needed persons.

Asthma Resort: For asthma allergy Khewra Mines Management has established Asthma Resort which is proving treatment to the Asthma Patient at very few charges.





Education Related Facilities

PMDC Management has established Schools and Colleges for the community of mining. In this way the children of the workers and technical staff is getting good educational facilities at nominal charges. These institutes are available in:

- Khewra
- Warcha
- Kalabagh



Tourism Aspect of the Mine

At about 250,000 tourists a year, the Khewra Salt Mine can be a major tourist attraction at substantial revenues. On the Khewra Salt Mines Railway, tourists are taken to the mine.



Indoors there are many salty water pools. About fifty years ago the Badshah Mosque was constructed with multicolored salt colors. Other artistic sculptural works within the mine include Minar-e-Pakistan reproduction, Allama Iqbal statue, a series of crystals that make up name's in Urdu language.

A 20-bed clinical ward for asthma treatment was built in 2007 at a cost of 10 million rupees. A train safari tour to the Khewra Salt Mine was also part of the "Tour Pakistan Year 2007." Trains for visitors from LHR and RWP towards Khewra started operations in February 2011 by the Pakistan Railways. In this respect, a staff company has been helped in the renovation of Khewra Railway Station.



The mine is also home to the Assembly Hall (75 m high). Attractions include a 75-meter high Assembly Hall.

Khewra Salt Mines is the oldest in the history of Sub-Continent salt mining, located at the foothills of the Salt Range. Salt is a type of irregular structure-like dome. The seven thick cumulative salt seams are approximately 150 meter thick. Halite is 99% pure in places. Salt is clear, white, pink, and beef-reddish. It's crystalline in some horizons. There are lovely alternative strips of red and white salt inside the mine. It has 18 levels of work. All driveways have a cumulative length of 40 km.



Situation 160 km South of Islamabad Sale area 3 398.53 acres Geological Horizon Pre-Cambrian Salt Purity Average 98% Salt Shake Method Room and Pillar Total Resours Over 1 billion Sale 382 155 tons (2018-19) Sales 395, 19837 tons (2018-19) Sale 395 837 tons (2007-2018)

What is Primavera P6? The way to Use Primavera P6?

What is P6? What is P6? –The number of huge, complicated projects is increasing in today's challenging business environment. Most projects are uncontrolled and project managers can not efficiently plan, manage and track complex projects. Most experts in the field of project management have general information about software design and planning. Project managers in particular, planning engineers and planners use a number of them to stay on target in their projects.

Software like Oracle Primavera P6 and Microsoft Project are supporting project planning, planning, project management and the process decision making to ensure that the project is targeted. Beginners also try to understand the most P6 and other similar features within the field of project management.

Oracle Primavera P6 is one of the most efficient, useful software on the market for project management. It is designed to organize and execute all sorts of complex projects to meet the requirements of each team member. This program provides all the resources and functionality required for the entire life cycle of your projects. A few of the essential features of this program include risk management, critical path analysis, resource and price management. By supporting it, organisations, in today's uncertain economic conditions, can successfully manage projects.

Two versions of P6 exist essentially: PPM Management for Primavera Professional Project (PPM) and EPPM (Enterprise Project Portfolio Management).

Primavera P6 gives the business high-level approaches in project management. Many of us assume Primavera P6 is designed for planning purposes only. The Gantt charts are not just a device. It provides numerous solutions, such as cost management, value management, risk control, resource standardization, contracting and reporting.

Some key features of Primavera P6 are given below.

- **Scheduling:** Advance scheduling is involved in Primavera P6. Action is often generated at the WBS level, relationships are often formed and the critical direction in the schedule is often determined with the aid of the scheduling feature.
- **Management of capital, unit prices and expenditures** are often allocated to the operations. **Inventory and price Control Management:** The budget of the project is often followed by this feature. Project teams can easily compare the expected and ultimately the actual cost status and assess project performance.
- **Risk Management:** with the help of this feature, risk can be identified and prioritized. Risks are often assigned and the risk analysis for every activity and project is frequently carried out.
- **Contract Management:** Primavera P6 offers integrated document management solutions. The information requests, changes,

problems, submissions and approvals and their impact on the schedule can be followed through with this feature.

- Reporting: Primavera P6 has an advanced reporting feature that allows you to make custom reports for specific needs or use your existing reports in the database.

Computer tools are used by project teams to track and evaluate success of their projects. Without project management tools, it is difficult to finish a project on time and on budget. Because there are thousands of activities and variables in today's projects which have to be effectively managed. The overall project delay may arise from an unexpected problem or delay on critical path.

Oracle Primavera P6 helps to keep projects aiming, like other software tools (Microsoft Project).

Advantages of Primavera P6 are given below:

- Enables complex projects to be managed
- Enables projects ' portfolios to be managed
- Enhance visibility
- Enables project risks to be managed
- Enables resources and price control.

Summary

Oracle Primavera P6 is one of the most popular software for efficient project administration and planning. For several years, Primavera P6 has been used by project managers, project coordinators, project developers, planners and stakeholders from different sectors.

The screenshot shows the Oracle Primavera P6 Professional 18 interface. The main window displays a project hierarchy for 'PAKISTAN' with various sub-projects like 'PUNJAB', 'SINDH', 'BALUCHISTAN', and 'AJK'. A Gantt chart is visible on the right side of the screen, showing a timeline from October 2018 to March 2019. The interface includes a menu bar at the top, a standard tool bar below it, and a project tool bar at the bottom. The main data area is a table listing project details.

1. Menu Bar: Contains different menu buttons

2. Tables: This portion is used to display specific information about different items in shapes of tables

3. Standard Tool Bar: Contains standard tool icons for quick access

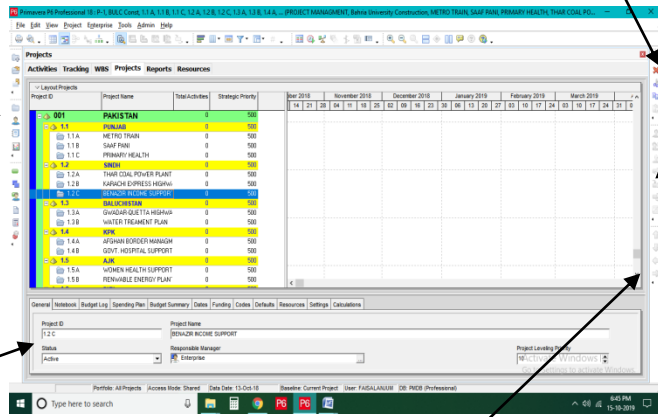
4. Gantt Chart: The portion which depicts the chart view of scheduled items

5. Project Tool Bar: Contains project tool icons for quick access

Project ID	Project Name	Total Activities	Strategic Priority
001	PAKISTAN	0	500
1.1	PUNJAB	0	500
1.1A	METRO TRAIN	0	500
1.1B	SAFF PANI	0	500
1.1C	PRIMARY HEALTH	0	500
1.2	SINDH	0	500
1.2A	THAR COAL POWER PLANT	0	500
1.2B	KARACHI EXPRESS HIGHW	0	500
1.2C	INDUSTRIAL DEVELOPMENT	0	500
1.3	BALUCHISTAN	0	500
1.3A	GHADAR QUETTA HIGHWA	0	500
1.3B	WATER TREATMENT PLAN	0	500
1.4	BLNK	0	500
1.4A	AFGHAN BORDER MANAGM	0	500
1.4B	GOVT. HOSPITAL SUPPORT	0	500
1.5	AJK	0	500
1.5A	WOMEN HEALTH SUPPORT	0	500
1.5B	RENEWABLE ENERGY PLAN	0	500

6. Tools Bar:
Contains all the
tools for different
function of
primavera

7. Editing Tools
Bar: Contains
different tolls for
editing/alteration



10. Details: The
portion depicts
the detail of all the
entries made in
tables.

9. Moveable
Toolbar: Contains
different icons
which used for
different
movement

8. Assign
Recourses:
Contains different
tolls for assigning
recourses.

Review on BULC Trip to Khewra Salt Mines.

Bahria University Lahore Campus arranged a one day tour to Khewra Mines in order to facilitates students regarding the preparation of their project.

The Trip participants left early in the morning and had a stop at Behra Interchange on M2 Motorway for breakfast. Sufficient amount of refreshments are also available in the vehicles like juices, Water, Fruit, Biscuits, Nimko etc. We reached Khewra Mines at about noon.

During the Mines visit students had visited the inside portion of the mine and experienced the mining location and other parts of the Khewra Mines like asthma resort and tourist attraction being constructed there. Area of nearly 3 KM is dedicated for the tourists in which a train track is also available which can be used on payment basis. As the strength of our Trip including the respected facility in nearly 200, so we opted the option of visiting the Khewra Mines by foot.

This option was good as all the students took good experience of the site and had good observations of the different areas of the mine. We had observed some salt water pool there, Salt Built Mosque, Minar-e-Pakistan etc.

Students took pictures and keenly observed all the environment of the Khewra Mine. We are took by surprise the theres is too much visitors from different areas of the Pakistan and abroad, including students and private families. This was clearely a proof that Khewra Mine is also a big tourist attraction along with its production for fines quality of salt.

Types of mining

Subterranean mining-takes place if minerals are deep under the ground. Often the most commonly used mineral processing method in Aotearoa involves the drilling of a central shaft with parallel shafts allowing for the optimum mineral extraction. Instead of direct mineral treatment the impacts on streams from this type of operation are often limited to those from transport and mine-related installations. In some cases, however, acid mine drainages have collapsed or closed down.

Hydro-mining

Uses high water to blast against the face of the seams in order to remove carbon and transfer it into a disinfestation or to the surface. This method increases the productivity of coal mining, but also raises the environmental impact risk from mine runoff to surrounding soils and streams.



Opencut or strip mining

It is usually cheaper than underground mining and is often extracted a greater proportion of the mineral deposit. The removal of surface soil, rock and vegetation to permit digging of shallow underground mineral seams is involved in opencut mining.



Alluvial or mining

It is also used in Aotearoa, particularly in South Island gold mining. Alluvial mining includes the drilling of stream beds, which are often directly to the base, to drain gold from the surrounding mountains through rivers. This approach changes the stream bed substantially, tests of water quality and affects some Mahinga Kai.



Seabed mining

(Also Known as black sand mining, and dredging iron sand mining)

Is powered by suction pipes, which pump sand from the sea floor mixed with seawater. Ear is separated from sand magnetically, while other minerals are extracted with a sieve before the residue is returned to the ocean.



Room and Pillar Method

Room and Pillar method is also used for salt extraction from the mines. This is the most common technique used for extraction in spite of that it required more labors for working.



Khawra Salt Mine Project on P6

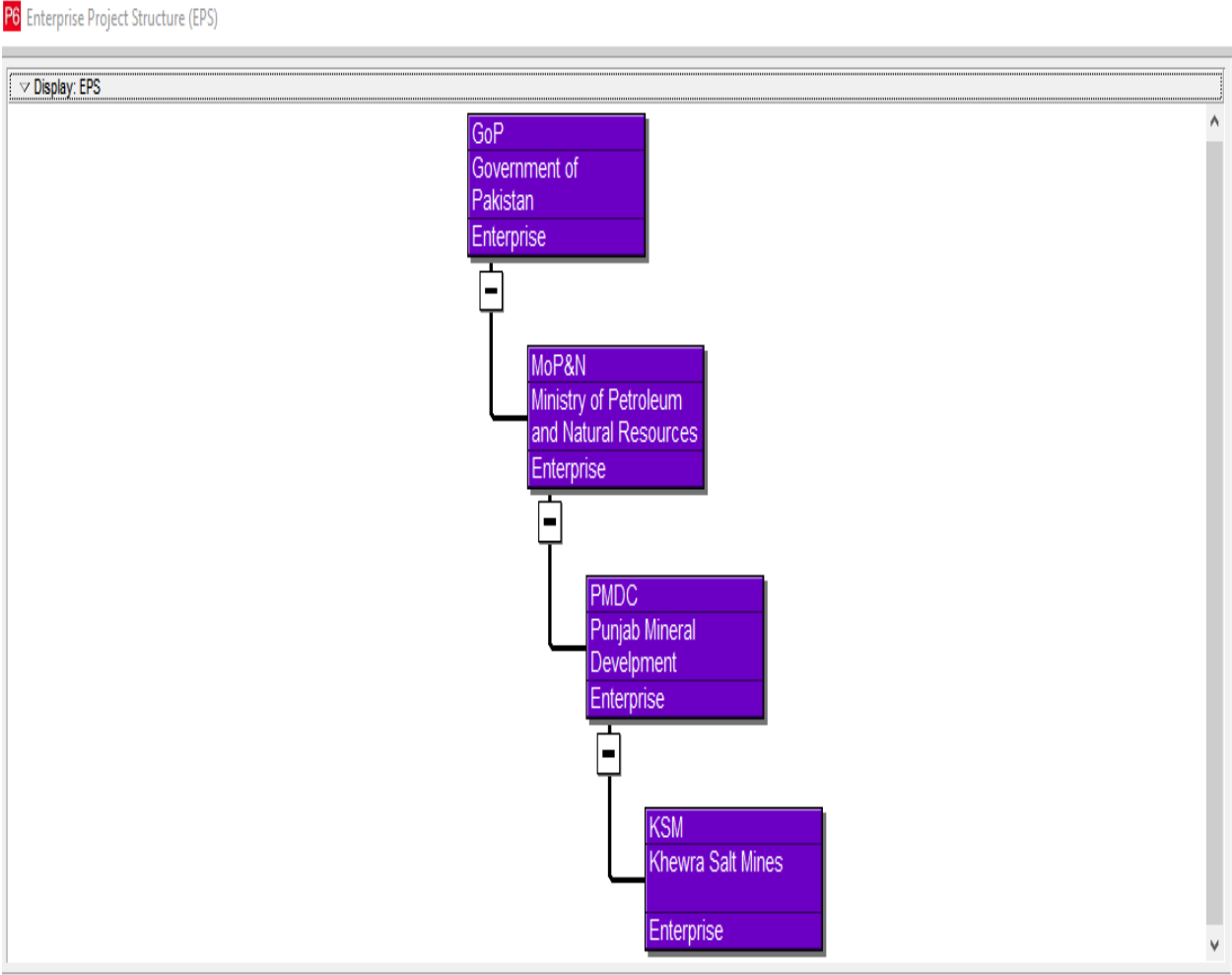
After the visit of Khewra Salt Mines, we created a project given to us by the respected instructed Mr. Shahzad Ahamad with the title as mentioned above.

We created the projected on P6 with the following order:

- Created Enterprise Project Structure
- Under the relevant EPS we created a new project called “Khewra Salt Mines Project.
- After a new project is created we have created/define 6 Work Breakdown Structure WBS (Detail Given Below)
- Afterwards our next step is to add activities under each WBS. We have added a total 54 Activities related to our given project, which can be perused below.
- After adding the activities we have to develop the relationship of each activity with one another, clarify the predecessor and successor activates
- Next step was to create the project calendar
- In this way we can get the total duration of the project.
- Now it is the time to define resources, their costing and usage
- Resources are allocated to relevant activities

Print out of output of our project like Resources Sheet, Total Activates, WBS, Gantt chart, S-Curve, Histogram etc are given below for further perusal.

Khawra Salt Mine EPS:



Khawra Salt Mine WBS Report

Khawra Salt Mines Project
Report Date 19-Jan-20 15:35












Project Start 06-Jan-20
Project Finish 01-May-21














WB-02 WBS Summary









User's Notes:

WBS Code	WBS Name	Status	Est. Weight	Project Phase
GoP	Government of Pakistan	Active	1.0	
MoP&N	Ministry of Petroleum and Natural Resources	Active	1.0	
PMDC	Punjab Mineral Development Corporation	Active	1.0	
KSM	Khewra Salt Mines	Active	1.0	
KSMP	Khewra Salt Mines Project	Active	1.0	
KSMP.1	Exploration	Active	1.0	
KSMP.2	Drilling and Blasting	Active	1.0	
KSMP.3	Crushing and Milling	Active	1.0	
KSMP.4	Separation	Active	1.0	
KSMP.5	Refining	Active	1.0	
KSMP.6	Distribution	Active	1.0	







Khawra Salt Mine Activites:










Activities										
Projects Resources Activities Tracking WBS										
Filter: All Activities										
Layout: Classic Schedule Layout										
#	Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Budgeted Labor Cost	Budgeted Nonlabor Cost	Budgeted Total Cost
1		KSMP Khwera Salt Mines Project	414d	414d	0%	06-Jan-20	01-May-21	Rs.7,911,300.00	Rs.1,455,300.00	Rs.153,851,600.00
2		KSMP.1 Exploration	63d	63d	0%	06-Jan-20	18-Mar-20	Rs.2,016,400.00	Rs.0.00	Rs.2,016,400.00
3		0.01 Start of Project	0d	0d	0%	06-Jan-20	06-Jan-20	Rs.0.00	Rs.0.00	Rs.0.00
4		1 Define Focus Area	2d	2d	0%	06-Jan-20	07-Jan-20	Rs.76,000.00	Rs.0.00	Rs.76,000.00
5		2 Identify Signs of Minerals	5d	5d	0%	07-Jan-20	13-Jan-20	Rs.77,000.00	Rs.0.00	Rs.77,000.00
6		3 Identify Drill Targets	15d	15d	0%	13-Jan-20	30-Jan-20	Rs.396,000.00	Rs.0.00	Rs.396,000.00
7		4 Determine if target has potential size	15d	15d	0%	30-Jan-20	17-Feb-20	Rs.627,000.00	Rs.0.00	Rs.627,000.00
8		6 Analysing Information	5d	5d	0%	17-Feb-20	22-Feb-20	Rs.165,000.00	Rs.0.00	Rs.165,000.00
9		7 Mapping the location	15d	15d	0%	22-Feb-20	11-Mar-20	Rs.422,400.00	Rs.0.00	Rs.422,400.00
10		8 Decision making	5d	5d	0%	11-Mar-20	17-Mar-20	Rs.253,000.00	Rs.0.00	Rs.253,000.00
11		9 Move to next process	1d	1d	0%	17-Mar-20	18-Mar-20	Rs.0.00	Rs.0.00	Rs.0.00

Layout: Classic Schedule Layout		Filter: All Activities									
#	Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Budgeted Labor Cost	Budgeted Nonlabor Cost	Budgeted Total Cost	
12	 KSMP2 Drilling and Blasting		102d	102d	0%	18-Mar-20	15-Jul-20	Rs.1,270,500.00	Rs.401,500.00	Rs.1,46,157,000.00	
13	 10	Site Survey	5d	5d	0%	18-Mar-20	24-Mar-20	Rs.77,000.00	Rs.0.00	Rs.77,000.00	
14	 11	Preparing Surface	15d	15d	0%	24-Mar-20	10-Apr-20	Rs.356,400.00	Rs.0.00	Rs.356,400.00	
15	 12	Identify Depth of holes	5d	5d	0%	10-Apr-20	16-Apr-20	Rs.129,800.00	Rs.0.00	Rs.129,800.00	
16	 13	Research rock type	15d	15d	0%	16-Apr-20	04-May-20	Rs.231,000.00	Rs.0.00	Rs.231,000.00	
17	 14	Plan Drilling pattern	5d	5d	0%	04-May-20	09-May-20	Rs.88,000.00	Rs.0.00	Rs.88,000.00	
18	 15	Drilling the blast holes	5d	5d	0%	09-May-20	15-May-20	Rs.88,000.00	Rs.104,500.00	Rs.143,192,500.00	
19	 16	Rock breaking	15d	15d	0%	15-May-20	02-Jun-20	Rs.66,000.00	Rs.297,000.00	Rs.363,000.00	
20	 17	E-xplosion of slected site	1d	1d	0%	02-Jun-20	03-Jun-20	Rs.14,300.00	Rs.0.00	Rs.839,300.00	
21	 18	Clean up process	5d	5d	0%	03-Jun-20	09-Jun-20	Rs.22,000.00	Rs.0.00	Rs.22,000.00	
22	 19	Removing rubbles	15d	15d	0%	09-Jun-20	26-Jun-20	Rs.66,000.00	Rs.0.00	Rs.66,000.00	
23	 20	Tunnel Surface is reinforced	15d	15d	0%	26-Jun-20	14-Jul-20	Rs.132,000.00	Rs.0.00	Rs.792,000.00	
24	 21	Move to next process	1d	1d	0%	14-Jul-20	15-Jul-20	Rs.0.00	Rs.0.00	Rs.0.00	

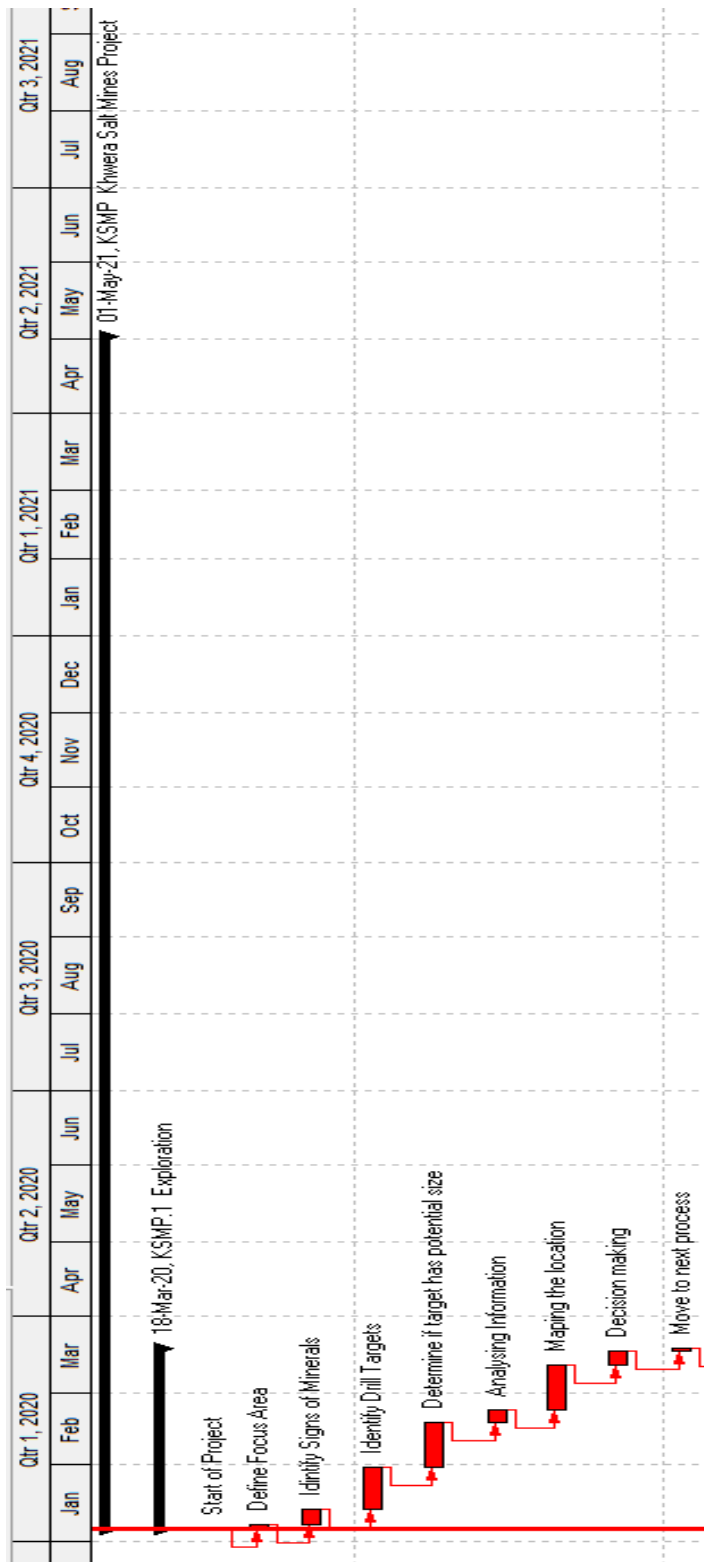
Layout: Classic Schedule Layout		Filter: All Activities									
#	Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Budgeted Labor Cost	Budgeted Nonlabor Cost	Budgeted Total Cost	
25	 KSMP.3 Crashing and Milling		56d	56d	0%	15-Jul-20	18-Sep-20	Rs.1,007,600.00	Rs.737,000.00	Rs.1,744,600.00	
26	 22	Decide Type of Rock	3d	3d	0%	15-Jul-20	18-Jul-20	Rs.132,000.00	Rs.0.00	Rs.132,000.00	
27	 23	Decide Crashing Technique	10d	10d	0%	18-Jul-20	30-Jul-20	Rs.391,600.00	Rs.0.00	Rs.391,600.00	
28	 24	Move for Crashing	2d	2d	0%	30-Jul-20	01-Aug-20	Rs.0.00	Rs.0.00	Rs.0.00	
29	 25	Crashing Primary Stage	15d	15d	0%	01-Aug-20	19-Aug-20	Rs.165,000.00	Rs.280,500.00	Rs.445,500.00	
30	 26	Crashing Secondary stage	15d	15d	0%	19-Aug-20	05-Sep-20	Rs.165,000.00	Rs.280,500.00	Rs.445,500.00	
31	 27	Grinding	10d	10d	0%	05-Sep-20	17-Sep-20	Rs.154,000.00	Rs.176,000.00	Rs.330,000.00	
32	 28	Move to Next Process	1d	1d	0%	17-Sep-20	18-Sep-20	Rs.0.00	Rs.0.00	Rs.0.00	

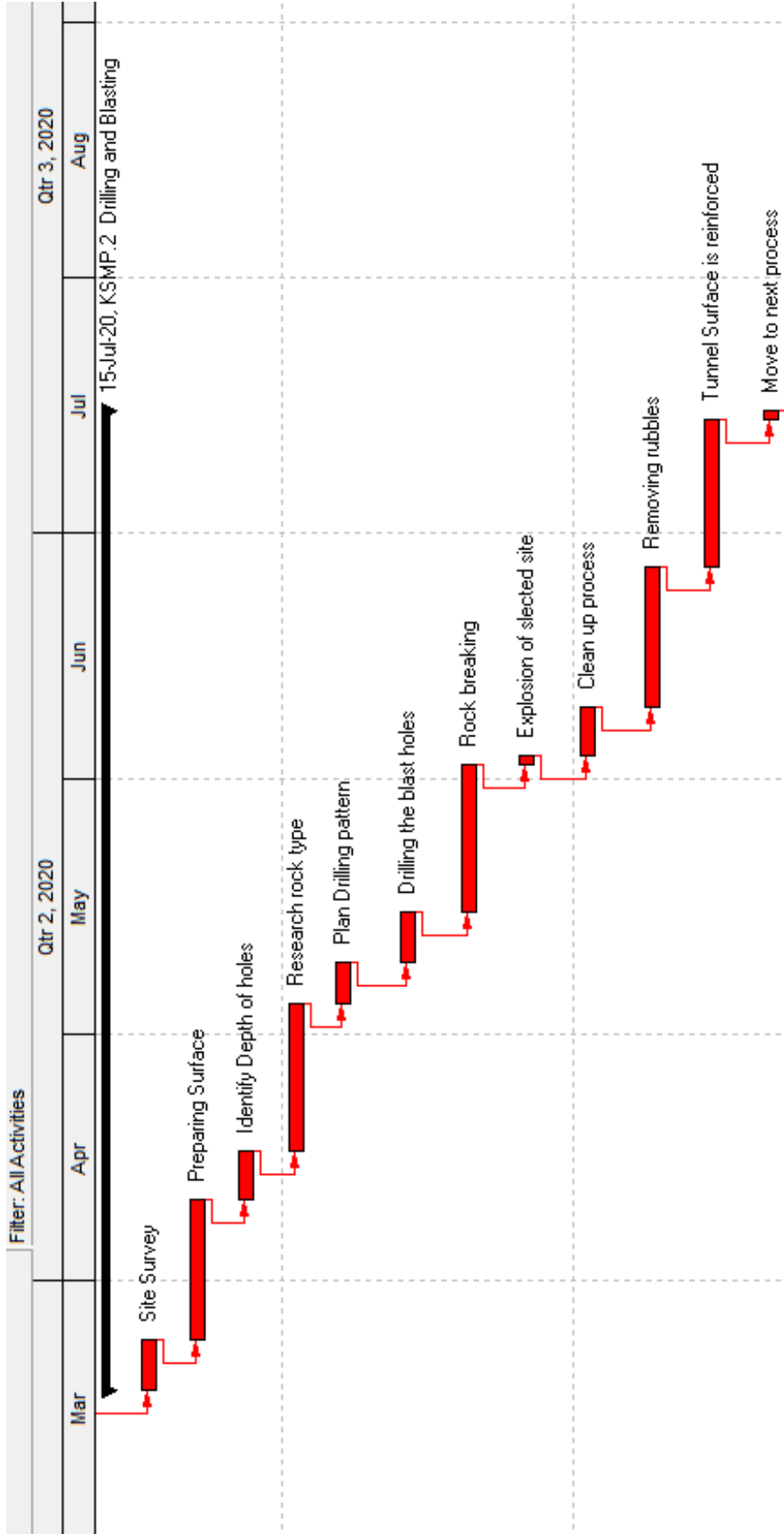
Layout: Classic Schedule Layout		Filter: All Activities									
#	Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Budgeted Labor Cost	Budgeted Nonlabor Cost	Budgeted Total Cost	
33	KSMP.4 Separation		58d	58d	0%	18-Sep-20	25-Nov-20	Rs.561,000.00	Rs.0.00	Rs.561,000.00	
34	29	Prepare for Separation	4d	4d	0%	18-Sep-20	23-Sep-20	Rs.0.00	Rs.0.00	Rs.0.00	
35	30	Hand Sorting	15d	15d	0%	23-Sep-20	10-Oct-20	Rs.115,500.00	Rs.0.00	Rs.115,500.00	
36	31	Magnetic Separation	5d	5d	0%	10-Oct-20	16-Oct-20	Rs.22,000.00	Rs.0.00	Rs.22,000.00	
37	32	Doing the panning	3d	3d	0%	16-Oct-20	20-Oct-20	Rs.36,300.00	Rs.0.00	Rs.36,300.00	
38	33	Density Separation	15d	15d	0%	20-Oct-20	06-Nov-20	Rs.231,000.00	Rs.0.00	Rs.231,000.00	
39	34	Size Separation	10d	10d	0%	06-Nov-20	18-Nov-20	Rs.143,000.00	Rs.0.00	Rs.143,000.00	
40	35	Flotation	3d	3d	0%	18-Nov-20	21-Nov-20	Rs.13,200.00	Rs.0.00	Rs.13,200.00	
41	36	Finishing Separation	2d	2d	0%	21-Nov-20	24-Nov-20	Rs.0.00	Rs.0.00	Rs.0.00	
42	37	Move to Next Process	1d	1d	0%	24-Nov-20	25-Nov-20	Rs.0.00	Rs.0.00	Rs.0.00	

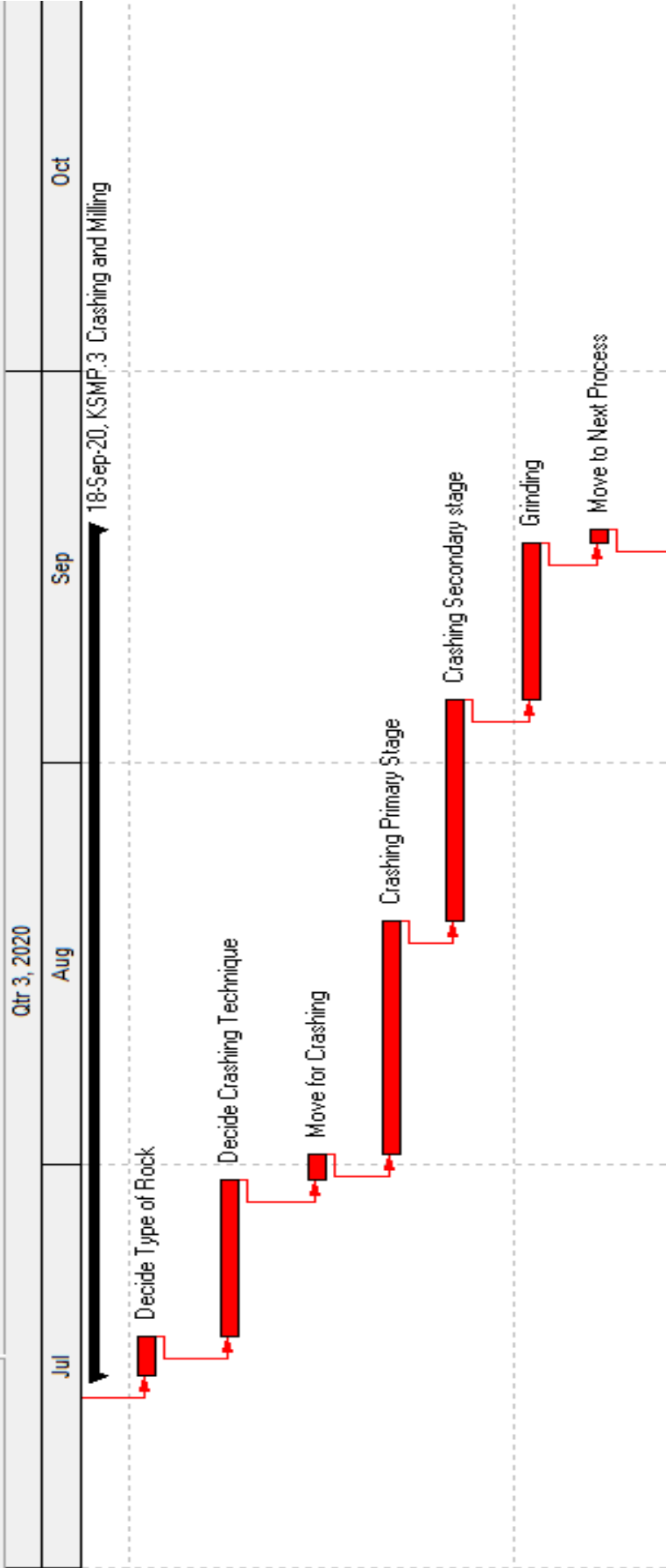
Filter: All Activities											
Layout: Classic Schedule Layout											
#	Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Budgeted Labor Cost	Budgeted Nonlabor Cost	Budgeted Total Cost	
43	 KSMP.5 Refining		79d	79d	0%	25-Nov-20	25-Feb-21	Rs.844,800.00	Rs.316,800.00	Rs.1,161,600.00	
44	 38	Preparation for Refining	5d	5d	0%	25-Nov-20	01-Dec-20	Rs.0.00	Rs.0.00	Rs.0.00	
45	 39	Removal of Impurities	9d	9d	0%	01-Dec-20	11-Dec-20	Rs.178,200.00	Rs.0.00	Rs.178,200.00	
46	 40	Cleaning of Contamination	18d	18d	0%	11-Dec-20	01-Jan-21	Rs.217,800.00	Rs.0.00	Rs.217,800.00	
47	 41	Salt Washing	5d	5d	0%	01-Jan-21	07-Jan-21	Rs.71,500.00	Rs.0.00	Rs.71,500.00	
48	 42	Counter Current Purification	13d	13d	0%	07-Jan-21	22-Jan-21	Rs.185,900.00	Rs.0.00	Rs.185,900.00	
49	 43	Hydroextraction of Impurities	18d	18d	0%	22-Jan-21	12-Feb-21	Rs.59,400.00	Rs.316,800.00	Rs.376,200.00	
50	 44	Hydroal Process	10d	10d	0%	12-Feb-21	24-Feb-21	Rs.132,000.00	Rs.0.00	Rs.132,000.00	
51	 45	Move to next Process	1d	1d	0%	24-Feb-21	25-Feb-21	Rs.0.00	Rs.0.00	Rs.0.00	

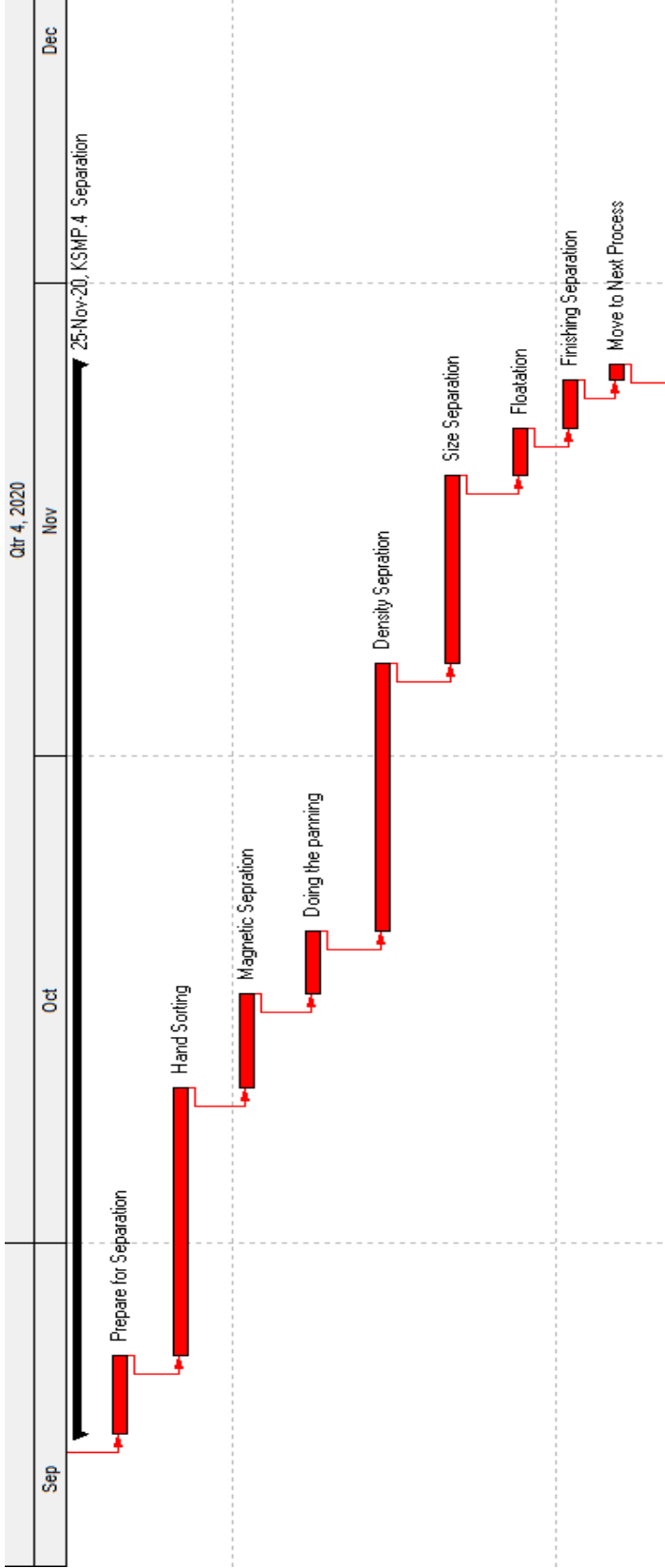
Layout: Classic Schedule Layout		Filter: All Activities									
#	Activity ID	Activity Name	Original Duration	Remaining Duration	Schedule % Complete	Start	Finish	Budgeted Labor Cost	Budgeted Nonlabor Cost	Budgeted Total Cost	
52	 KSMP.6 Distribution		56d	56d	0%	25-Feb-21	01-May-21	Rs.2,211,000.00	Rs.0.00	Rs.2,211,000.00	
53	 46	Preparation for Distribution	6d	6d	0%	25-Feb-21	04-Mar-21	Rs.0.00	Rs.0.00	Rs.0.00	
54	 47	Select Distribution strategy	10d	10d	0%	04-Mar-21	16-Mar-21	Rs.770,000.00	Rs.0.00	Rs.770,000.00	
55	 48	Decide Channel of Distribution	13d	13d	0%	16-Mar-21	31-Mar-21	Rs.657,800.00	Rs.0.00	Rs.657,800.00	
56	 49	Select Channel of distribution	5d	5d	0%	31-Mar-21	06-Apr-21	Rs.165,000.00	Rs.0.00	Rs.165,000.00	
57	 50	Manage Supply Chain	10d	10d	0%	06-Apr-21	17-Apr-21	Rs.330,000.00	Rs.0.00	Rs.330,000.00	
58	 51	Customer Feedback	7d	7d	0%	17-Apr-21	26-Apr-21	Rs.123,200.00	Rs.0.00	Rs.123,200.00	
59	 52	Updat Distribution Plan	5d	5d	0%	26-Apr-21	01-May-21	Rs.165,000.00	Rs.0.00	Rs.165,000.00	
60	 53	Closing	0d	0d	0%	01-May-21	01-May-21	Rs.0.00	Rs.0.00	Rs.0.00	

Khawra Salt Mine Gantt Chart:

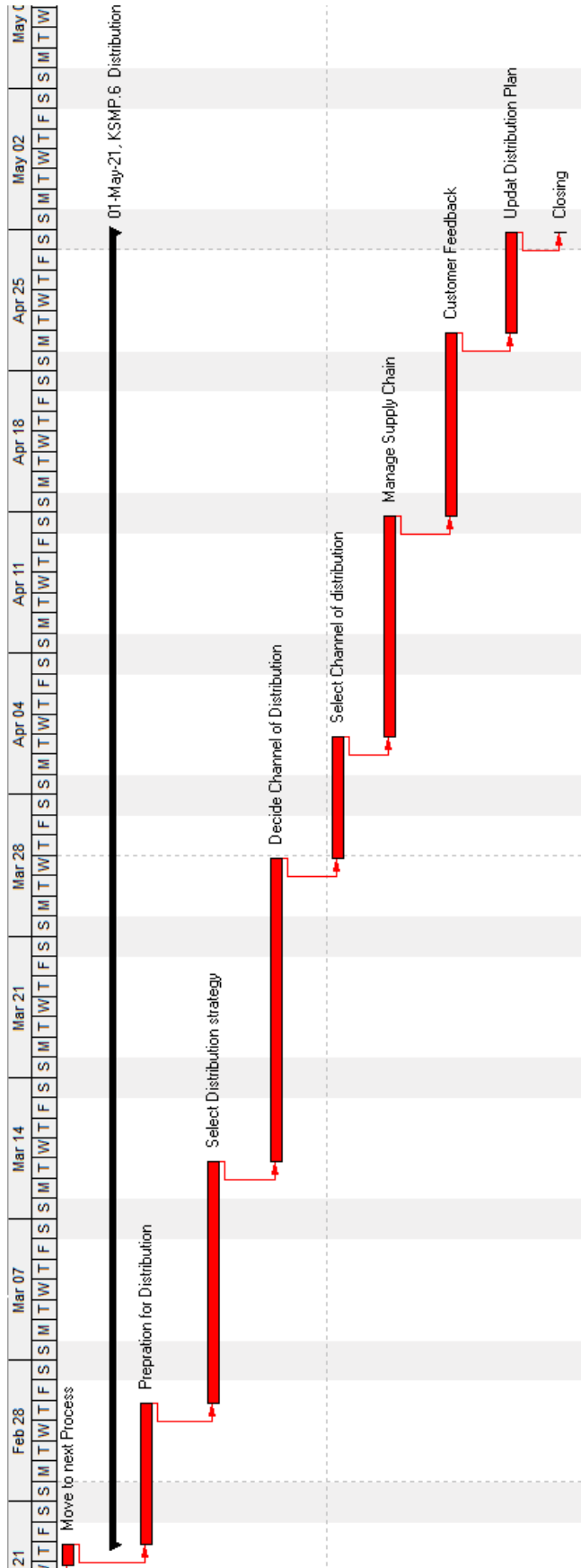




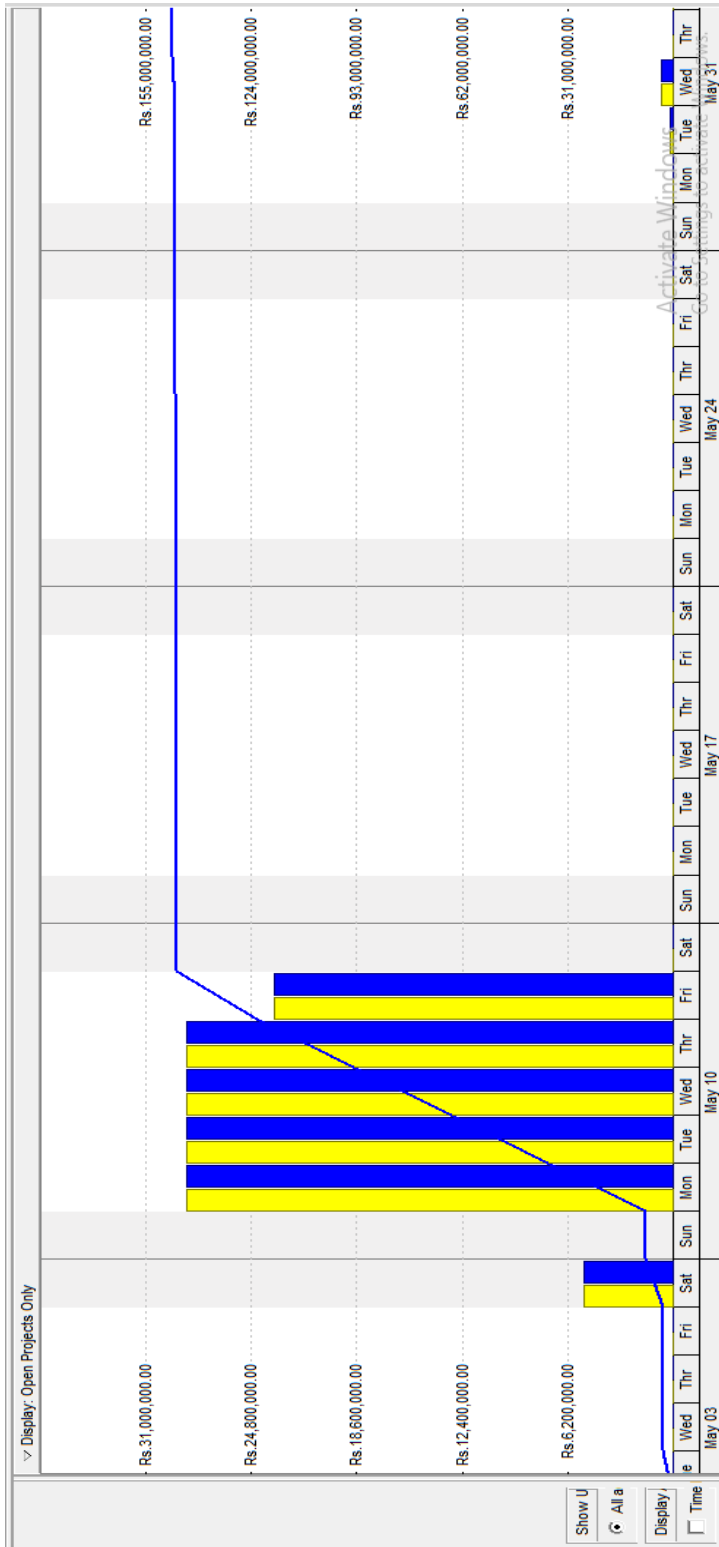








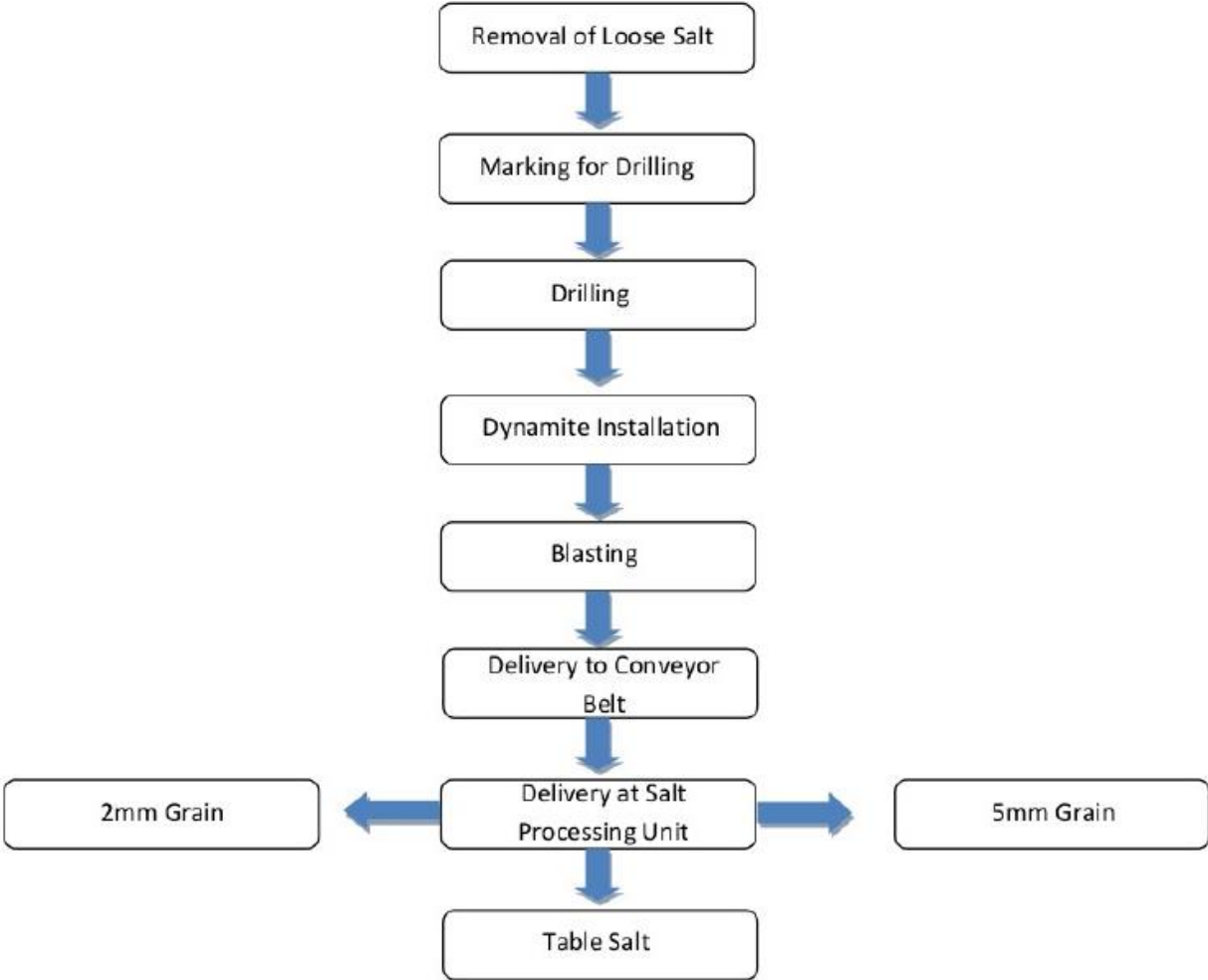
Khawra Salt Mine S-Curve:



Khawra Salt Mine Resources:

Resource ID	Resource Name	Resource Type	Unit of Measure	Primary Role	Default Units / Time
CE	Chief Engineer	Labor			1d/d
CON	Consultant	Labor			1d/d
RES	Researcher	Labor			1d/d
PM	Project Manager	Labor			1d/d
MGR	Manager Q.A	Labor			1d/d
AM-QA	Assistant Manager - QA	Labor			1d/d
MGR-2	HSE Manager	Labor			1d/d
AM-HSE	Assistant Manager-HSE	Labor			1d/d
MGR-3	Technical Manager	Labor			1d/d
AM	Assistant Manager- Technical	Labor			1d/d
SE	Supervisor	Labor			1d/d
Labour	Labour	Labor			1d/d
HL	Helper	Labor			1d/d
DRV	Driver	Labor			1d/d
MDR	Mining Drills	Nonlabor			1d/d
EXV	Excavators	Nonlabor			1d/d
BLS	Blasting Tools	Nonlabor			1d/d
ERTM	Earth Mover	Nonlabor			1d/d
CRUS	Crushing Machine	Nonlabor			1d/d
FEQ	Feeding Equipment	Nonlabor			1d/d
CRA	Crane	Nonlabor			1d/d
DYN	Dynamite	Material	Tons		1tons/d
CAB	Cables	Material	Lump Sum		8LS/d
CNB	Conveyor Belt	Material	Lump Sum		8LS/d
LB	Light Bulb	Material	Each		8ea/d
SFTM	Safety Material	Material	Lump Sum		8LS/d

Flow Chart of Salt Extraction



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