Operational Guidelines for Stacking, Sampling and Chemical Analysis under OMPTS, 2021

GOVERNMENT OF ODISHA
STEEL & MINES DEPARTMENT
****

NOTIFICATION

No. 3973 **/SM, Bhubaneswar dated the.** 28-04-2021
IV(A)SM-33/2020

Whereas, the Odisha Mineral (Prevention of Theft, Smuggling and Illegal Mining and Regulation of Possession, Storage, Trading and Transportation) (Amendment)Rules, 2021 (hereinafter referred to as the OMPTS (Amendment)Rules, 2021) has been notified vide Steel & Mines Department notification No 3803, dtd.16.04.2021 published in Extraordinary Gazette No652, dated 16.04.2021.

And, whereas, the State Government have decided for modification of stacking and sampling exercise to be carried out for removal/transportation of minerals from the mines sources.

Now, therefore, in exercise of the powers conferred by sub-rule (15) of rule 10 of the OMPTS Rules, 2007 the State Government do hereby issue the following directions, namely:—

1. **Short Title :** Operational guidelines for Stacking, Sampling and Chemical Analysis for Grade determination under provisions of Transportation of minerals, Chapter (3), Rule (10), of the OMPTS(Amendment) Rules 2021.

2. **Extent** : This guideline shall extend to all the mining circles of the state of Odisha

3. **Commencement:** It shall come into force from the date as would be notified by Government.

4. **Terms & Expressions:** The terms and expressions used in this operational guideline, but not specifically defined here, shall have the same meaning as in the OMPTS (Amendment) Rules, 2021. Terms and expressions introduced in this guideline but not present on the OMPTS (Amendment) Rules, 2021, have been defined below

AR Camera	Camera having Augmented Reality features
Anchors	Cyber Anchors Superimposed and Visible on actual ore stacks

I3MS	Integrated Mines &MineralsManagement System
JMO	Junior Mining Officer
RADO	Random Allocation of Designated Officer
RGSL	Random Generation of Sampling Locations
Clusters	A group of mines selected by proximity and production capacity to assign JMOs for sample collections
Geo-Fence	It is a location-based service in which an app or other software uses GPS, RFID, Wi-Fi or cellular data to trigger a pre-programmed action when a mobile device or RFID tag enters or exits a virtual boundary set up around a geographical location.
NVR	Network Video Recorder

5. **Policy Regulations:**

Request for Ore sampling and Chemical Analysis for Grade determination under provisions of Transportation of minerals, Chapter (3), Rule (10), of OMPTS (Amendment) Rules, 2021, by Lessees

Sl.	Process	Regulation Summary
1	Request for Sample Collection Inspection and Supervision	It states that the lessee or its authorized agent is required to tender an online request through the i3MS application (mobile or web interface) in FORM S Part 1 for the in-person mandatory supervision of the Junior Mining Officer for the sample collection process including; the random generation of sampling points, the collection of the ore via trenching and sectioning techniques, the mixing, bagging of primary, secondary and umpire samples. (Application procedure defined in section 8 of this notification).
2	Procedure for Onsite Sample	It states the lessee or its authorized agent shall be marking corner points using Augmented Reality (AR) technology using

	Points Generation, Sample Collection, Mixing and Bagging	the mobile app available with the inspecting JMO, and record the collection process from the random sample points generated by the AR technology in the JMO's mobile app. The JMO is also required to record the sample mixing process using the i3MS mobile app and bag and tag the samples (primary, secondary & umpire) using QR codes and tamper proof mechanism.
3	Request for Chemical Analysis of the Collected Samples	It states that the lessee or its authorized agent shall be given a provision to tender a request in FORM S part 2 for the chemical analysis of the samples after the JMO's supervision is duly completed (procedure described in section 8 of this notification). A provision is also given to upload the grade of the sample as determined in the Chemical Laboratory of the State Government and/or the Lessee's NABL accredited Laboratory, duly approved by the State Government (Application process defined in section 8 of this notification). These provisions are given online in the I3MS mobile & web applications.
4	Application for approval of Chemical Laboratory	It states that the lessee or its authorized agent shall be given an online provision in the i3MS web application to apply for approval against a NABL accredited testing laboratory establishedby the lessee(s) for the chemical analysis and subsequent grade determination of a sample duly collected on the basis of the application in FORM S Part 1 followed by request for chemical analysis in FORM S Part 2.

6. Applicability:

a. Lessees who have not availed exemption under the proviso of rule (10) (7) of OMPTS Rules 2007.

b. Operational Guidelines for Stacking, Sampling and Chemical Analysis for Grade determination under OMPTS (Amendment) Rules, 2021 (See Para 5) are applicable for mines of all non-coal major and specified minor minerals.

c. Mineraltype : All non-coal major and specified minor minerals

7. Procedure:

A. STACKING

The minerals extracted and desired to be removed from the lease hold area have to be stacked in geometric shape of trapezoid with every stack having height of not more than 3 meter and volume of ores, not more than 20,000 Metric Tonnes.

b. REQUEST FOR SAMPLE COLLECTION UNDER JMO SUPERVISION

i. The recommended first step will be to go to the URL: "https://play.google.com/store/apps/details?id=com.i3ms.sampling" to download the "i3MS-Sampling" mobile app. The minimum specifications of the mobile device on which the mobile app can function is provided in the Annexure 'A' of this Operational Guideline.

Alternatively, the applicant may login to the i3MS web application using the URL: https://www.odishaminerals.gov.in.

ii. In either of the above scenario, the applicant will be required to login to the web/mobile app using the existing i3MS lessee code and password.

iii. In case of the mobile app, the applicant may proceed to apply in FORM S Part 1, by clicking on the "Request for Stack Sampling".

iv. In case of the web application, the applicant may apply by clicking on the menu "Sampling -> Apply for Requisition FORM S Part 1".

v. The applicant is required to provide information pertaining to the dimensions of the stacks and their geo-coordinates etc. The Annexure 'B-1' and 'B-2' contain the format of Form S Part 1 to be used.

vi. Stack Eligibility: Stacks are required to be prepared on the spaces, either vacant or completely evacuated of the previous stacks duly recorded by uploading a geo-tagged image in the i3MS mobile app/web version.

vii. Upon successful submission of the FORM S Part 1, each stack will be auto-assigned an ID and the lessee's request will be auto-acknowledged with a notification containing the likely period of the JMO's visit. All acknowledgment and notification formats/means are mentioned in Annexure 'C'

c. *SAMPLE COLLECTION PROCESS:* The multiple steps in this process are highlighted in the Annexure 'D' for further elaboration. The process is to be carried out for each stack requested for in the FORM S Part 1. Additionally, the lessee or its authorized agent is

required to install video cameras at a height and angle so as to allow for a proper view of the stack during the sample collection process as specified in Annexure A1

i. The name of JMO to supervise the sample collection process along with the details of inspection period and the Mines to be visited will be randomly assigned and will be notified on his mobile app and web login. The JMO mobile app [RGSL (Random Generation of Sampling Locations)] can be downloaded from https://play.google.com/store/apps/details?id=com.i3ms.rgsl

ii. Thereafter the JMO is required to download all the stack details from his mobile app and sync it to the device before proceeding to the mines, so that the stack information is available even in offline mode on the device with the JMO.

iii. The JMO,on reaching the minesite is required to activate the inspection process for a stack. The inspection will only be activated once the mobile app detects the presence of the JMO within the geo-fence of the stack i.e. the pre-determined proximity of the stack. The JMO must be at 1ft from the toe of the stack.

iv. Post successful activation of the inspection, the JMO hands over the mobile device to the lessee or his authorized agent to continue the rest of the process of sample collection through the mobile app after clicking on the "Generate Sectioning Points" process.

v. The lessee or his authorized agent is prompted by the mobile app to activate the AR (Augmented reality) Camera and proceed to the base of the stack.

vi. Thereafter the lessee or his authorized agent is required to perform the following steps for all the 4 sides of the base of the stack

    1. The mobile appwill prompt the holder of the mobile set to proceed to any corner of the stack to map the points of generation for any side of the stack. Accordingly, the starting and end of the side will be marked.
    2. After both the end points of the side are captured, the mobile app will automatically generate the sample points for the process of sectioning for that side. Points for a scoopingfrom sideswill also be generated. All points so generated will be visible via the AR camera as blue colored cyber physical anchors super-imposed on the stack surface.
    3. The lessee or his authorized agent,while keeping the AR camera opened will be required to traverse to each point. As points are traversed, the cyber physical anchors will become yellow. A marking will be required

to be created using chalk powder/flag posts of physical anchors and place them at the sampling point upon traversal.

4. The holder of the mobile set is then prompted to click a picture of all the sampling points generated for sectioning from a distance.

vii. The lessee or his authorized agent is then required to activate the next step in the process called "sectioning sample collection". The samples are required to be collected by means of sectioning and horizontal trenching from the marked points. While collecting from each point it is required to click pre and post pictures of the point of collection as prompted by the app.

viii. The holder of the mobile set will then click on the "Generate Points for Trenching" process and the app will prompt to start generating the sampling points for trenching from the top plane of the stack.

ix. Upon activation of the process, the holder of the mobile set will be prompted to activate the AR (Augmented reality) Camera and proceed to the top of the stack and the pictures of the 4 corners of the top plane of the stack are to be captured.

x. After the four corners of the topare captured, the mobile app will automatically generate the 4 random sample collection points for the process of trenching in each of the 4 quadrants of the top plane of the stack along with one point in the center.

xi. The holder of the mobile set, while keeping his AR camera opened will be required to traverse to each point. As points are traversed, the cyber physical anchors will become yellow. It will be required to create a marking using chalk powder/flag posts of physical anchors and place them at the sampling point upon traversal

xii. While keeping the AR camera in the mobile app, the holder of the mobile set is then prompted to click a picture of all the sampling points generated for sectioning from a distance.

xiii. Then the next step in the process called "Trenching sample collection" is to be activated. The samples will have to be collected by means of sectioning and horizontal trenching from the marked points. While collecting from each point it is required to click pre and post pictures of the point of collection as prompted by the app.

xiv. The sample collection via trenching should be collected upto a depth of 3 meters or the height of the stack whichever is greater.

xv. The method for trenching for fines & CLO will be as below,

1. **Trenching for Fines:**

   The Auger Drilling technique for trenching may be used for Fines. The auger drill is required to have a length greater than 3 meters or the height of the stack and a minimum spiral diameter of 400mm. The steps associated with the auger drilling technique for each of the stacks are described below:

   Auger Drilling for Fines Stack:-

   a. After generation of trenching points, the auger drill is to be taken to the top using the ramp.

   b. At the top, the drilling process is to be carried out as shown in the image in **Annexure-E**

   c. The samplesare to be collected from the mineral present atop the spirals of the drill and not the spillover heap deposited around the trenched hole

2. **Trenching for Lumps:**

   a. The Excavator/Poclain shall be used to dig a trench upto a depth of 3 meters or the height of the stack whichever is greater. Then the samples should be drawn by scraping from all the four sides through and through along the depth.

xvi. The JMO will then be required to physically supervise the mixing of all the collected samples via sectioning and horizontal trenching from the base and above and trenching on the top plane.

xvii. The JMO then activates the bagging process on the mobile app. This leads to the generation of the 3 unique QR codes for the primary, secondary and umpire samples

xviii. The JMO will then oversee the equi-distributed bagging of the samples in non-woven fabric bags of 3.3 Kgs each and then use a handheld printer to print out the QR codes on industrial-grade, super-strength, adhesive, tamper proof label stickers. (For specifications of the type of bag to be used, zip ties, printer and label stickers please refer to **Annexure A)**

xix. The JMO will ensure that the stickers are properly pasted on the tamper proof zip ties and the non-woven fabric bags containing the primary, secondary and umpire samples are secured properly with the QR coded zip ties

xx. The JMO will be required to color code the sticker for each of the samples with red for primary, blue for secondary and green for the umpire samples using a marker.

xxi. The JMO will also click pictures of the samples which are bagged and tagged using the mobile app for all of the 3 non-woven fabric bags containing the primary, secondary and umpire samples.

xxii. The JMO and lessee are required to complete all the above steps for each stack applied for in a single Form S part 1 request

xxiii. The JMO is then prompted by the mobile app to fill the inspection report to complete the sample collection process

xxiv. The Lessee is required to ensure that the recording feature of the camera is enabled/running during the entire duration of the sampling process and the same shall be available/archived with the timestamp for future reference as and when required.

d. REQUEST FOR CHEMICAL ANALYSIS OF THE SAMPLE

1. The request for chemical analysis shall be processed through the lessee's i3MS web application login for the secondary sample and the approval there of will be processed through the DDCA's web application login.

i. The lessee or his authorized agent has to request for "chemical analysis" in FORM S Part 2 (The format for the same is captured in Annexure 'D')

ii. After logging in to the i3MS web application, the DDCAwill have to scan QR code before opening the bag and conducts testing of the sample.

iii. The DDCA will have to upload the result of analysis in the system.

iv. The lessee will also upload the result of the chemical analysis against each stack in the system.

v. In the i3MS system, Form K for the secondary sample will be auto-generated.

2. The chemical analysis of the primary sample shall be carried out by the lessee or his authorized agent in the Laboratory duly approved by the Director of Mines. On

completion of the same, the lessee or his authorized agent will upload the result in the system and Form K for the primary sample will be auto-generated.

e. REQUEST FOR APPROVAL OF CHEMICAL LABORATORY

The requestfor approval of Lab can be processed through the lessee's i3MS web application login.

i. Lessee can apply in FORM Q for approval of the NABL accredited Lab, established by him.

ii. The lessee may also apply to have his testing done in an approved lab of another nearby mine in the same FORM Q. In such cases, the lessee of the other mine will need to acknowledge and provide an NOC for the usage of their lab by the applicant lessee.

iii. The FORM Q application goes to the Director Mines for approval and can be tracked by the lessees for further action.

iv. Inspection of the lab, if required, will be carried out prior to approval by the Director of Mines.

v. Upon Approval, the applicant Lessee is notified and a LAB PERMIT is generated for the same

vi. This approval is a one-time activity, however, an application flow also exists for the withdrawal of this request.

8. **Timeline for completion Supervision of Sample collection after FORM S Part 1 request:**Three days.

9. **Timeline for the rejection of the request for chemical analysis, if warranted:**Not more than one week from the date of receipt of the sample.

10. **Timeline for the testing and archival of the samples:**Not more than two weeks from the date of receipt of the sample.

11. **Caveat:** Any deviation from the above timelines, has to be justified by the competent authority with reason.

By Order of the Governor

28/4

Principal Secretary to Government

Memo No. 3974 / **Dated** 28.04.2021

Copy forwarded to the P.S. to Hon'ble Chief Minister /P.S. to Hon'ble Minister of Steel & Mines / P.S. to Chief Secretary/ P.S. to Development Commissioner-cum-Additional Chief Secretary/ P.S. to Principal Secretary, Steel & Mines Department /P.S. to OSD-cum-Special Secretary, Steel & Mines Department for kind information of Hon'ble Chief Minister/ Hon'ble Minister/ Chief Secretary/ Development Commissioner-cum-Additional Chief Secretary/ Principal Secretary/ OSD-cum-Special Secretary Steel & Mines Department.

28.4.2021
OSD -cum- Addl. Secy. to Government

Memo No. 3975 / **Dated** 28.04.2021

Copy forwarded to all Departments of Government/ All RDCs /Secretary Board of Revenue, Odisha, Cuttack/Director of Mines, Odisha/ Director of Geology, Odisha/ MD, OMC Ltd. Bhubaneswar/ All DDMs/JDM/ All Mining Officers/ all Collectors for information.

28.4.2021
OSD -cum- Addl. Secy. to Government

Memo No. 3976 / **Dated** 28.04.2021

Copy forwarded to Gazette Cell in-charge, Odisha Gazette Cell, Commerce and Transport (Commerce) Department, Odisha Secretariat, Bhubaneswar with a request to publish the above notification in an extra ordinary issue of Odisha Gazette and supply 200 (two hundred) copies to this Department.

28.4.2021
OSD -cum- Addl. Secy. to Government

Memo No- 3977 / **Dated** 28.04.2021

Copy forwarded to all Officers/All Sections for information and necessary action.

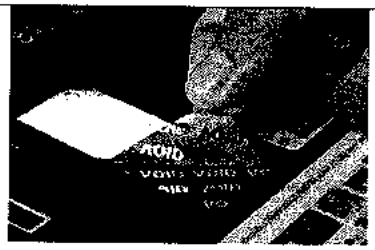
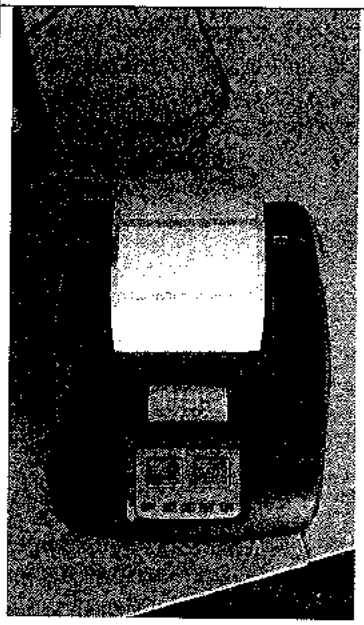
28.4.2021
OSD -cum- Addl. Secy. to Government

Annexure A

Minimum Specifications to download the mobile app for JMO and Lessee

1. **JMO Device:**
    a. Android API Level 24+
    b. RAM – 8GB or higher
    c. Internal Memory – 64 GB or higher
    d. Camera – 108 MP or higher
    e. Processor – Snapdragon 865/Snapgragon 888/Exynos 2100
    f. OS - Android 10 or above
    g. GPS – Dual band (GLONASS, BEIDOU, GALILEO, NABIC)
2. **Lessee Device:**
    a. Android API Level 24+
    b. RAM – 4 GB or higher
    c. Internal Memory – 32 GB or higher
    d. Camera – 48 MP or higher
    e. Processor – Snapdragon 720 or above
    f. OS - Android 10 or above
    g. GPS – Dual band (GLONASS, BEIDOU, GALILEO, NABIC)

3. Bag Specifications a. Material : Non-Woven fabric bag b. Capacity : 5 Kgs c. Size : 11x14 inches	
4. Zip Ties Specifications a. Type : Zip ties with label plate b. Material: Nylon Zip Cable Tie Label Strap Strip with Marking Tag c. Tag Label Size : 4 inches to 6 inches	

5. <u>Sticker Specifications</u> a. Adhesive, Super strength stickers b. 3- 5 inches in size c. Industrial grade	
6. <u>Printer Specifications</u> a. Handheld printer b. Bluetooth Barcode Label printer- TSC Alfa-3R c. IP54-rated protective case to resist dust and water d. Plastic design with rubber over-mold construction that withstands 5 ft. (1.5 m) drop e. Wired & wireless communication interfaces: USB 2.0, RS-232, Bluetooth, and 802.11 a/b/g/n f. High capacity 2500 mAh rechargeable Lithium Ion batteries g. Large Paper capacity to reduce the frequency of changing paper roll h. High-speed processor and extensive memory for fast print speeds of up to 4" (102 mm) per second i. Last more than 30 hours of	

printing receipts on a single battery charge j. Supports TSPL-EZ (EPL2 and ZPL emulations), ESC-POS or CPCL emulation **k.** 2-Year Warranty	
7. <u>QR Code Scanner</u> a. Hands free/Standing Barcode Reader b. Symbology Decode Capability - 1D/2D c. USB 2.0, RS-232, RS-485Interface supported d. Transfer Speed Must be 12/Megabits/Second through USB 2.0 & 115 kb/second through RS-232 e. Imager Field of View 40-46° Horizontal x 28-29.5° Vertical f. Warranty One Year warranty with onsite service support from Go-Live date	

Annexure A1

Video Camera Installation Guide:

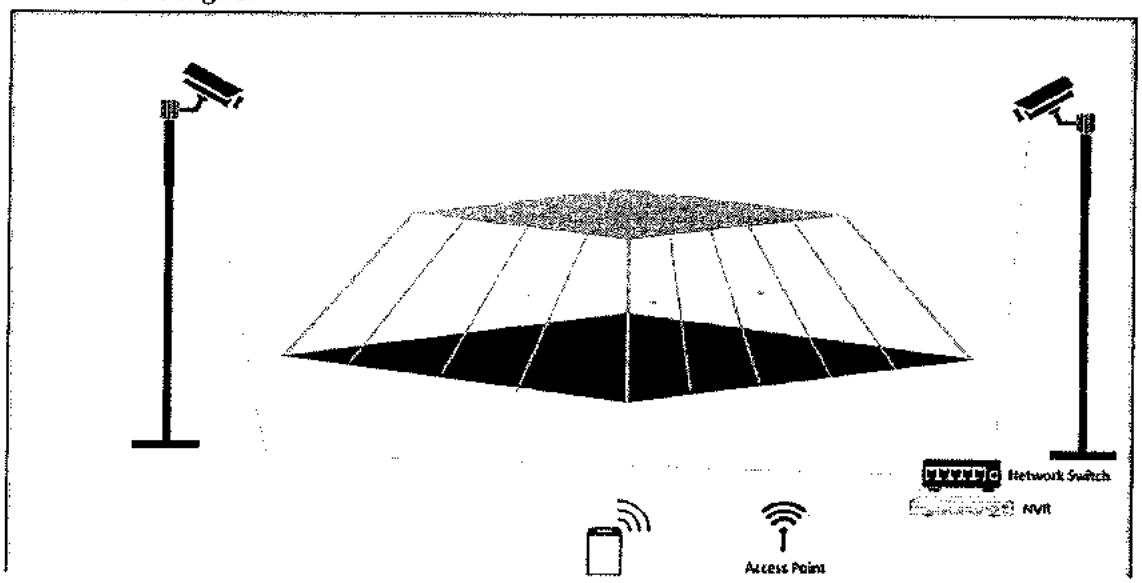
Multiple IP cameras and NVR (Network Video Recorder) system for capturing the footage of the entire stack (Top and Surrounding)

Camera Specifications:

1. Type: IP PTZ Camera
2. Image Resolution: 4 Megapixel
3. Day &night: IR 50M
4. Wide dynamic range: Yes
5. Protocols : TCP, UDP, HTTP, HTTPS, DHCP, PPPoE, RTP, RTSP, IPv4, Ipv6, DNS,DDNS, NTP, ICMP, ARP, IGMP, SMTP, FTP, UpnP, SNMP, Bonjour
6. POE: Yes
7. Outdoor: Yes
8. Frame rate: 30fps (1920 x 1080)
9. Live video streaming facility should also be there.

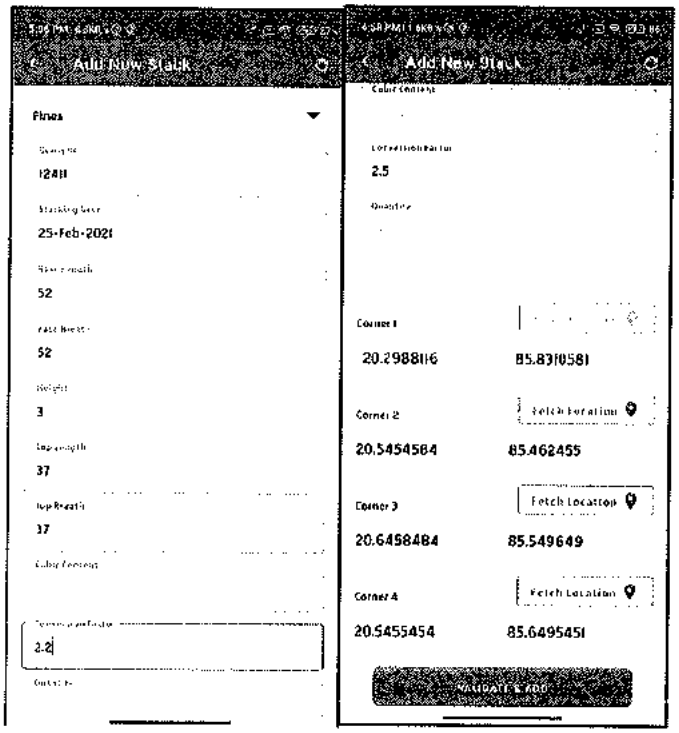
Below is a representative image of the camera installation to indicate the proportion of the height of the camera installation w.r.t. the stack height

The video footage should be archived for at least 45 days or until stack evacuation whichever is higher



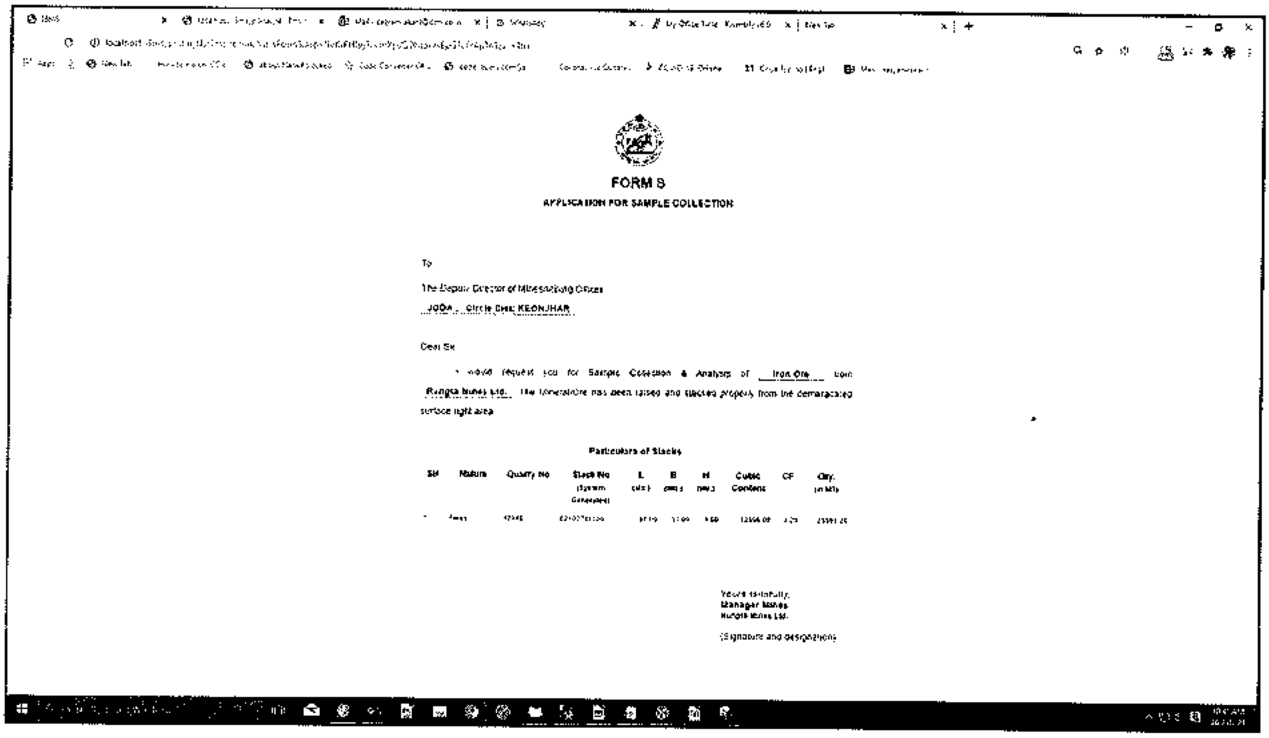
Annexure B1

Lessee Logins to Lessee Mobile App and submits the request for Sampling by providing the stack details in Form S part I as shown below



Annexure B2

On successful submission of Form S part I from the mobile app, the Lessee shall be able to view the submitted Form S from the i3ms Web portal by logging into the system. Below is the sample format for the same (for reference purpose).



FORM S

APPLICATION FOR SAMPLE COLLECTION

To

The Deputy Director of Mines/Mining Officer

JODA Circle Dist: KEONJHAR

Dear Sir

I would request you for Sample Collection & Analysis of Iron Ore from [illegible] Mines Ltd. The Mineral/Ore has been raised and stacked properly from the demarcated surface right area

Particulars of Stacks

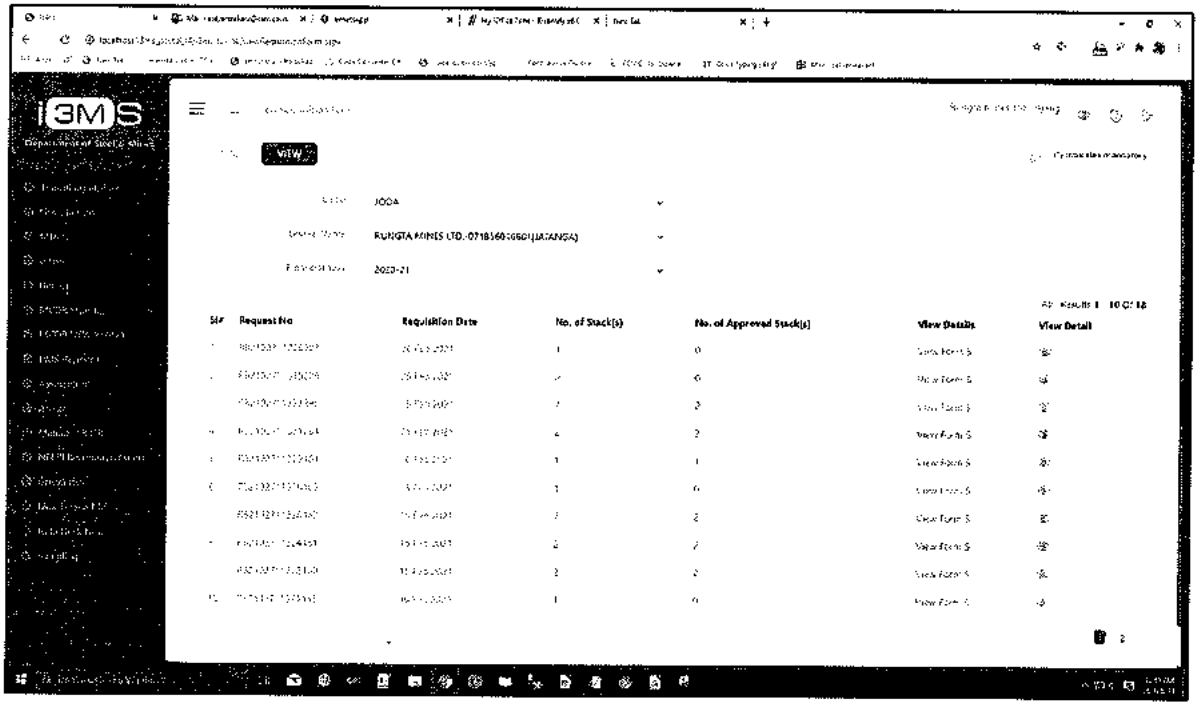
Sl#	Nature	Quarry No	Stack No (System Generated)	L (in m)	B (in m)	H (in m)	Cubic Contents	CF	Qty. (in MT)
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Yours faithfully,
Manager Mines
[illegible] Mines Ltd.

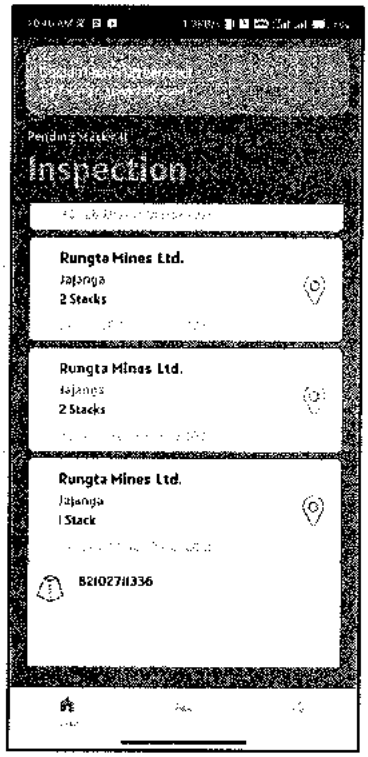
(Signature and designation)

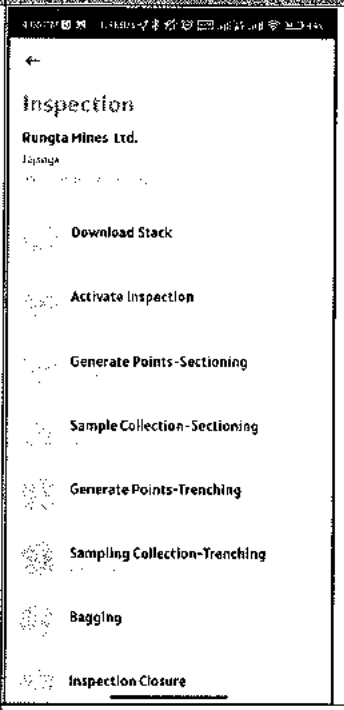
Annexure C

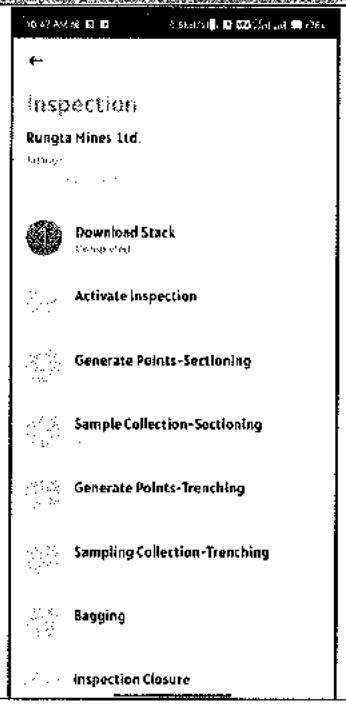
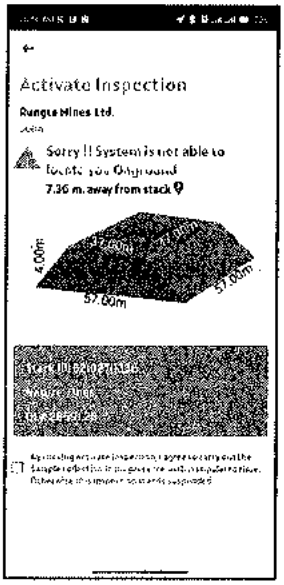
The Lessee on logging in to the web portal can view all the submitted Form S with the details under the menu "Sampling -> View Requisition Form".

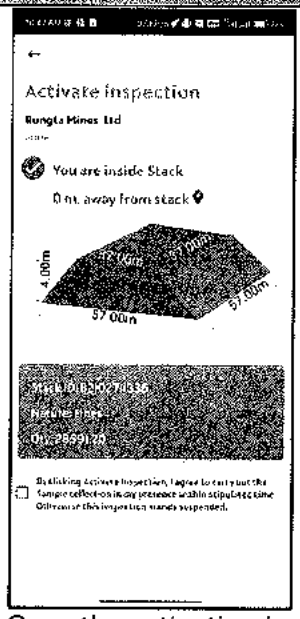
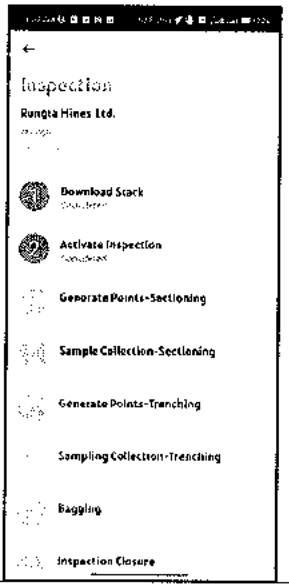


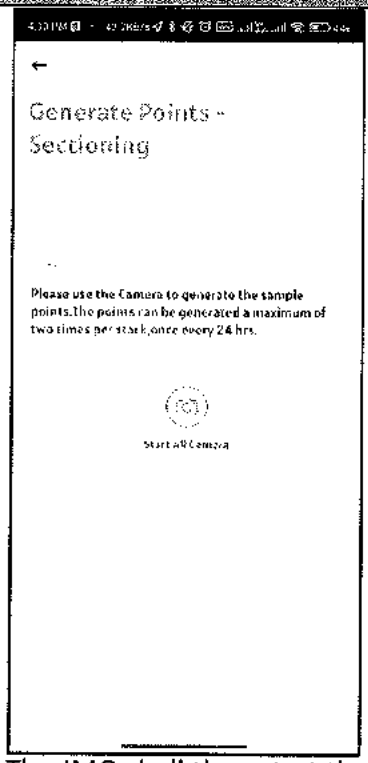
Annexure D

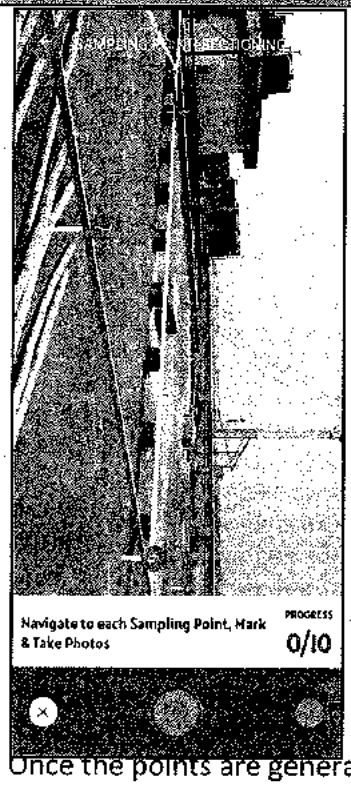
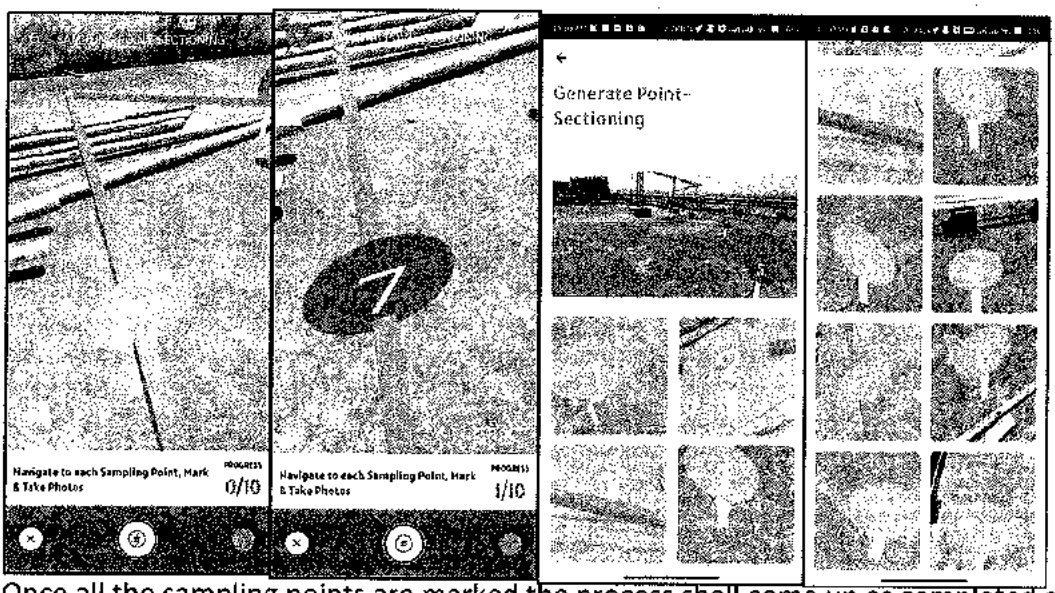
Steps	Description
1)	JMO logs in to the mobile app
2)	Login through secured credentials as provided.
3)	JMO is presented the dashboard view. This view shall have information on the submitted Form S that are assigned to it from the mines the JMO is tagged to along with the inspection date range associated with each Form S. 
4)	JMO selects a particular stack from the assigned Form S, the JMO shall be able to see the various steps associated with the Sample Procedure for the stack and as well as the status of each of the process. Since none of the steps have been initiateed everything in the below image shows up as incomplete.

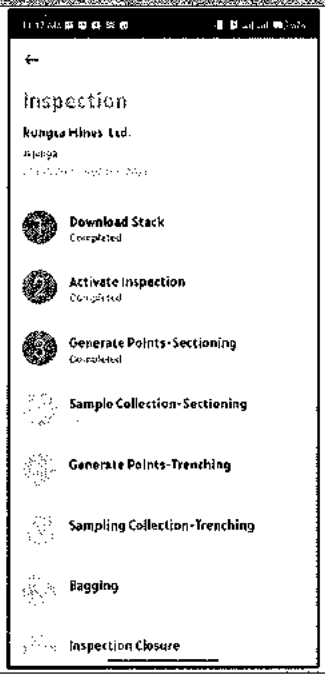
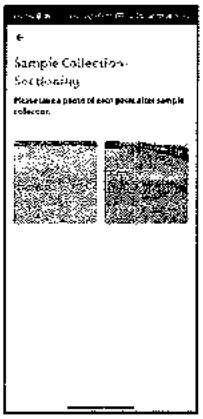
Steps	Description
	
5)	JMO downloads the stack information from the Down Stack Information screen. This shall be done when within network. The same information shall be available later at the Sampling site in the offline mode. The screen for Download stack is shown below  On completion, this process comes up as completed.

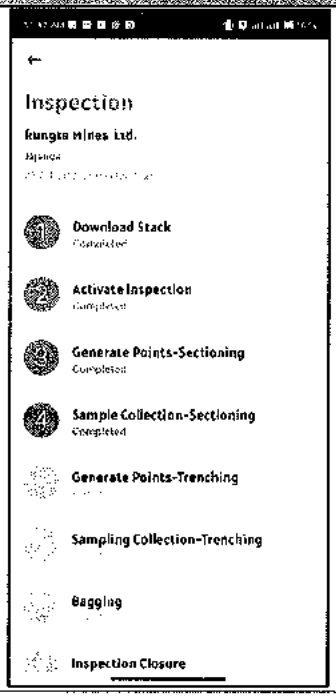
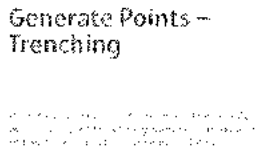
Steps	Description
	
6)	On successful download of Stack Information the JMO shall visit the stacking site. Once at the site the JMO shall try to activate on-ground inspection. If outside the geo-fenced stack the activation will not be successful and shall throw an error message stating as shown below.  But if the JMO is inside the geo-fenced stack then the activation shall be successful as shown below

Steps	Description
	 Once the activation is done successfully the process shall show as completed as shown below 
7)	Sectioning – Once the inspection is activated, the JMO shall start the generation of Sample Collection points for Sectioning. The JMO shall select the process Generate Points – Sectioning and the below screen shows up

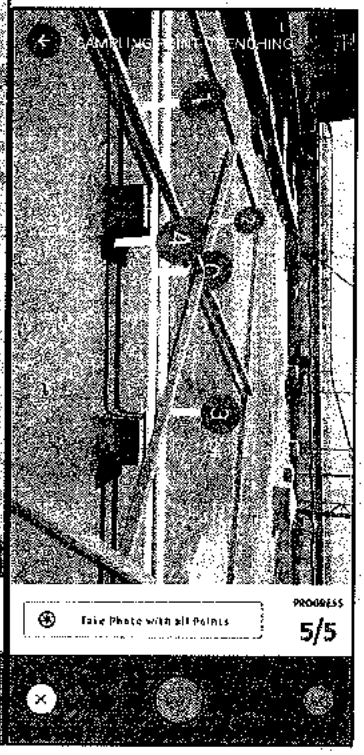
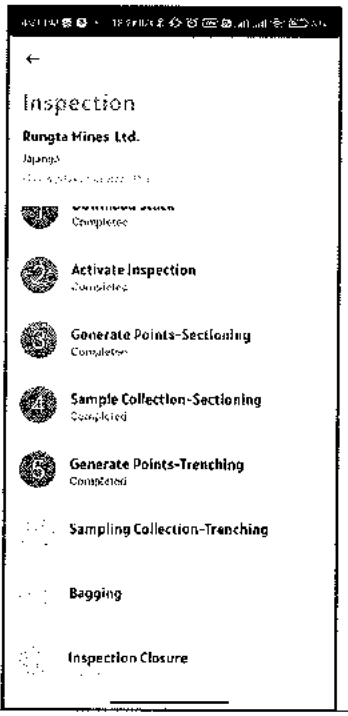
Steps	Description
	 The JMO shall then start the AR camera and go to any of the four corners of the bottom base of the stack and start marking the sides as shown below  On mapping of all the 4 sides the random sampling points shall be generated as shown below

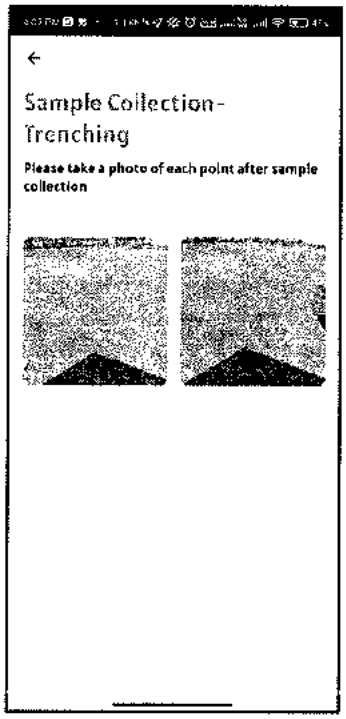
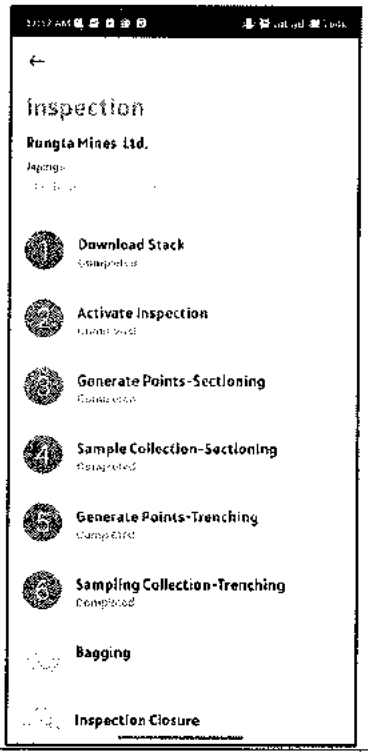
Steps	Description
	 Once the points are generated the JMO shall navigate to each Sampling point and mark the same. Once all the sampling points are marked the JMO shall capture the image as shown below  Once all the sampling points are marked the process shall come up as completed as shown below

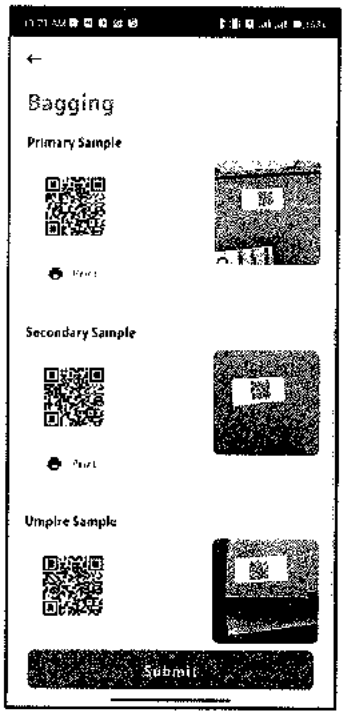
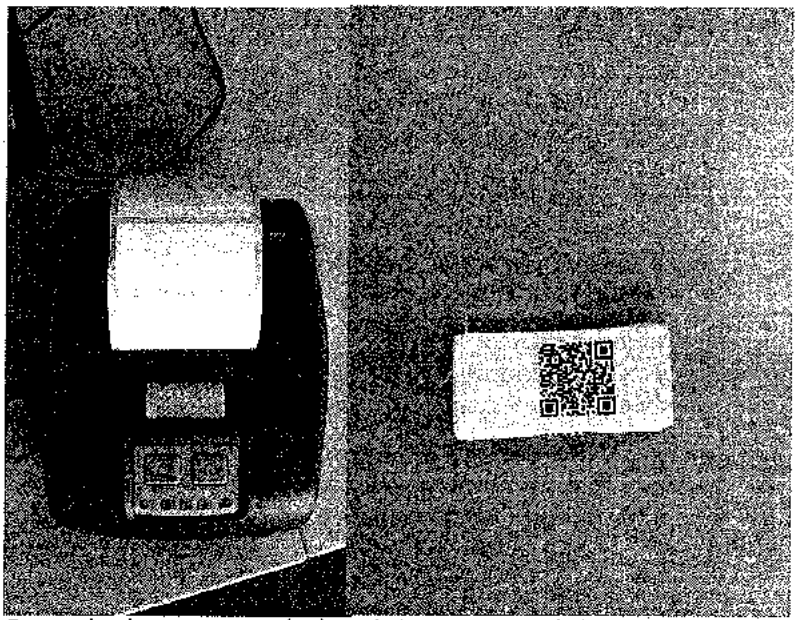
Steps	Description
	
8)	Once the points are generated and marked the JMO shall navigate to the marked points for sample collection and post collection shall capture image of the point as shown below  Once samples are collected from all the sampling points and the images are captured the process shall come up as completed as shown below

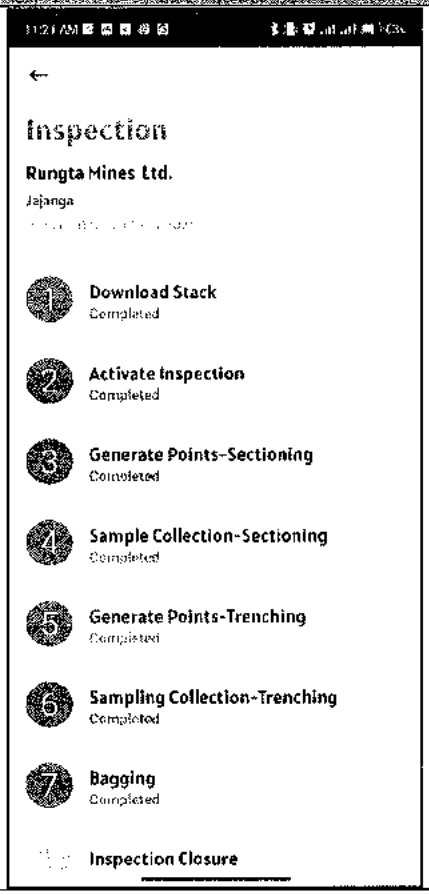
Steps	Description
	
9)	Trenching – Once the inspection is activated, the JMO shall start the generation of Sample Collection points for Trenching. The JMO shall select the process Generate Points – Trenching and the below screen shows up  The JMO shall then start the AR camera and go to any of the four corners of the top of the stack and start marking the sides as shown below

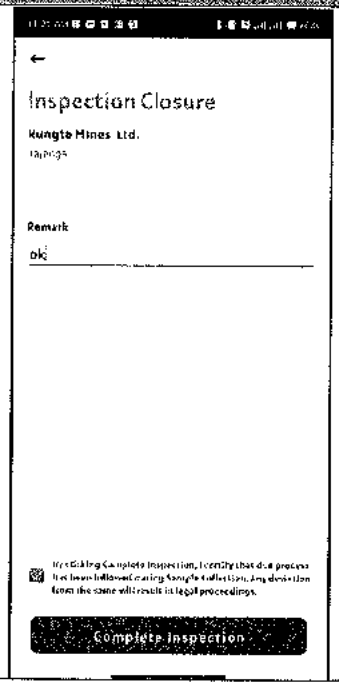
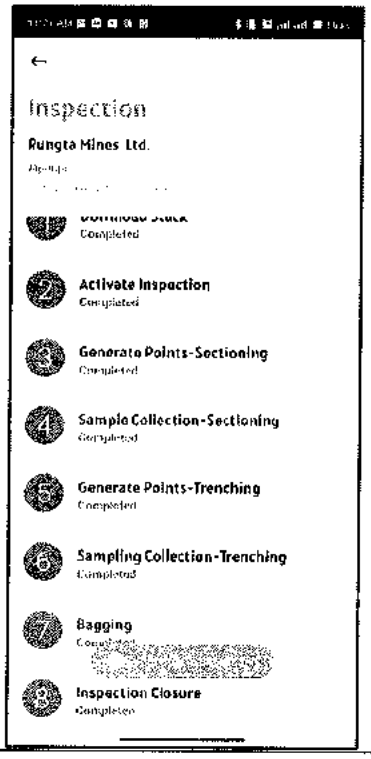
Steps	Description
	 On mapping of all the 4 sides the random sampling points shall be generated as shown below Once the points are generated the JMO shall navigate to each Sampling point and mark the same. Once all the sampling points are marked the JMO shall capture the image as shown below

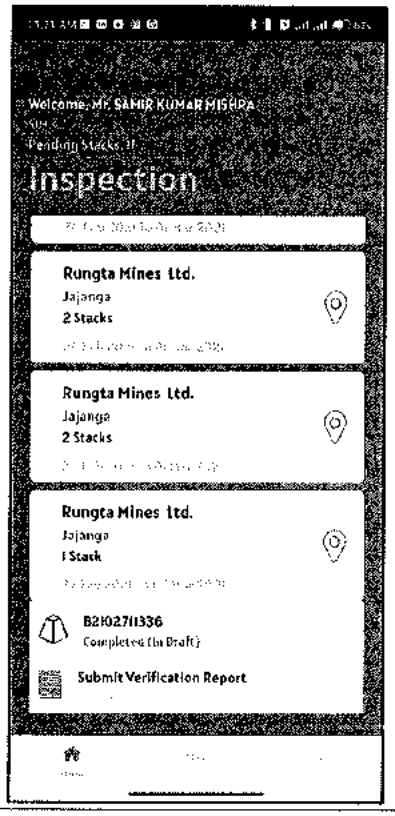
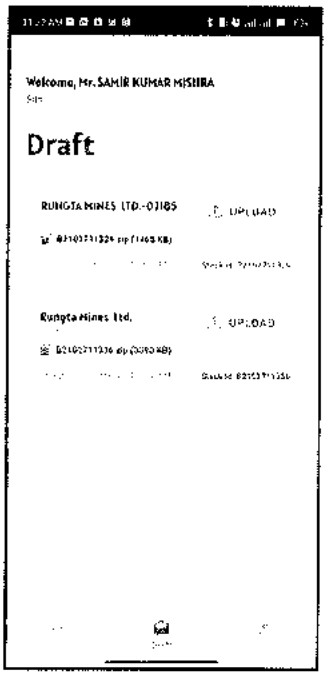
Steps	Description
	  Once all the sampling points are marked the process shall come up as completed as shown below 
10)	Once the points are generated and marked the JMO shall navigate to the marked points for sample collection and post collection shall capture image of the point as

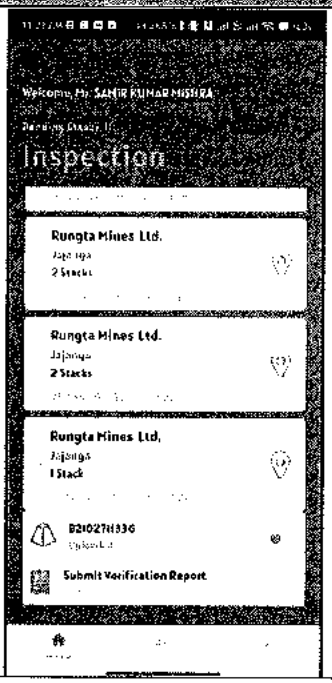
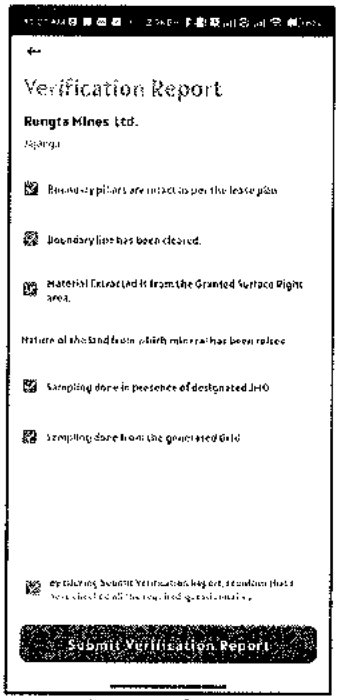
Steps	Description
	shown below  Once samples are collected from all the sampling points and the images are captured the process shall come up as completed as shown below 
11)	Once the sample collection done, the samples are mixed and divided into three parts – Primary, Secondary & Umpire. Each shall be bagged in a separate bag and the mobile

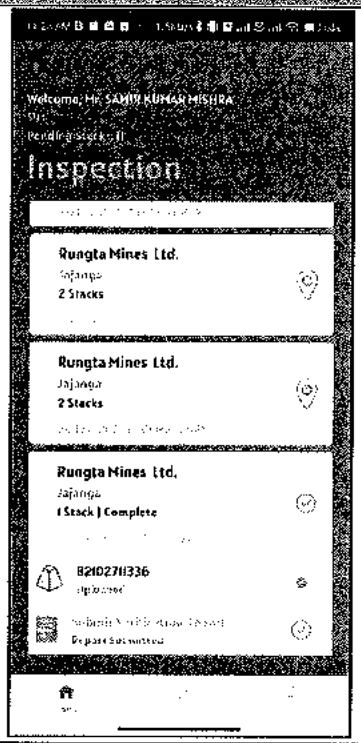
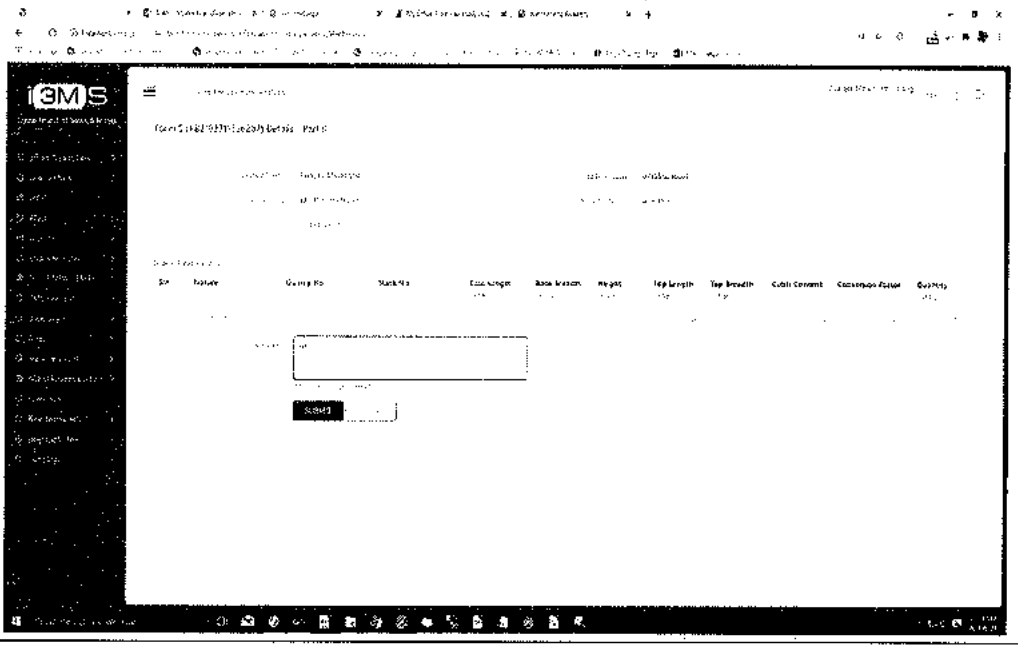
Steps	Description
	app shall a generate a QR code for each as shown below  A print out of these QR codes shall be taken and same shall be put on zip ties which in turn shall be used for sealing the sample bags. The image of the printer and zip ties with QR code is shown below  Once the bags are sealed and the images of the same are captured from the camera the process comes up as completed.

Steps	Description
	
12)	Once process of Bagging is done the JMO shall file an Inspection closure report with remarks and a declaration stating that the entire process has been carried out in the JMO presence as shown below

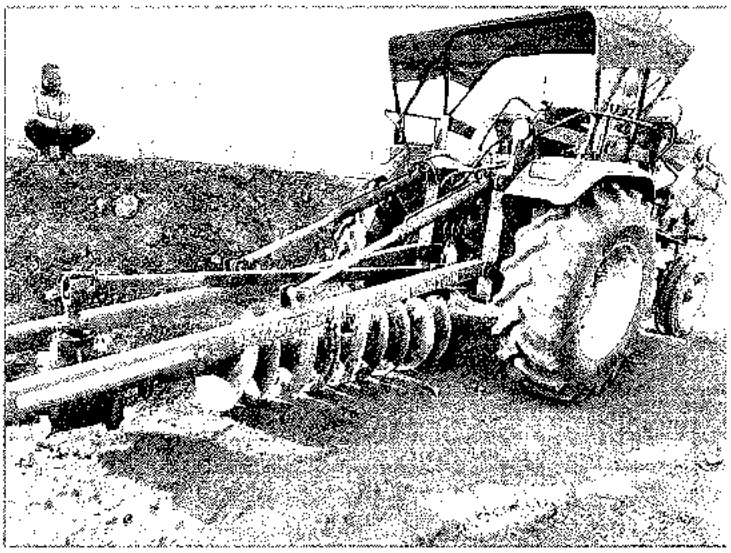
Steps	Description
	
13)	Once inspection closure report is filed all the associated Sampling process comes up as complete 
14)	Once all the process are complete the Status against the stack shall be completed but the sampling related details shall be saved in draft state. Since there is no network connectivity the information is not available in central server hence all the information

Steps	Description
	are in draft mode as shown below 
15)	The JMO shall upload the draft state information to central server once its connected to network as shown below  Once uploaded the status shall come up as uploaded against the stack

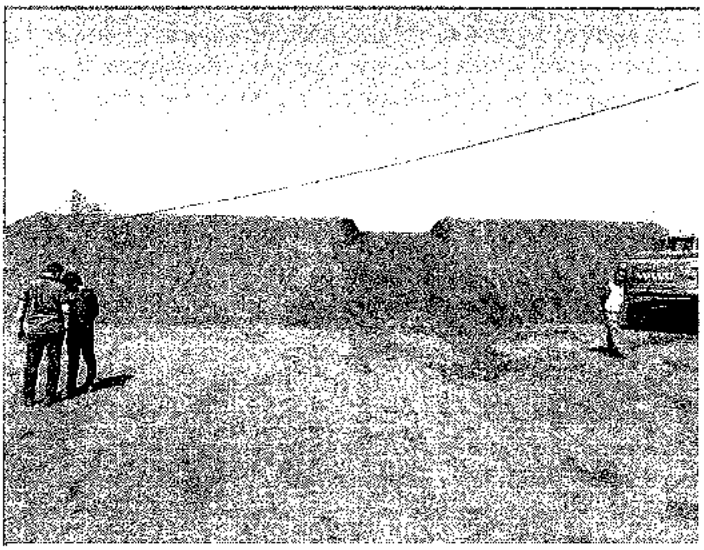
Steps	Description
	
16)	Once the sampling details are uploaded successfully, the JMO shall file a Verification Report as shown below where it provides reports on the Lessee  Once the Verification report is filed, the status against the stack comes up as Report Submitted

Steps	Description
	
17)	Once the JMO submits the verification report successfully the Lessee shall login into the i3ms web portal and apply for Chemical analysis of the sample using Form S part II as shown below 

Annexure E



Auger Drill mounted on the tractor

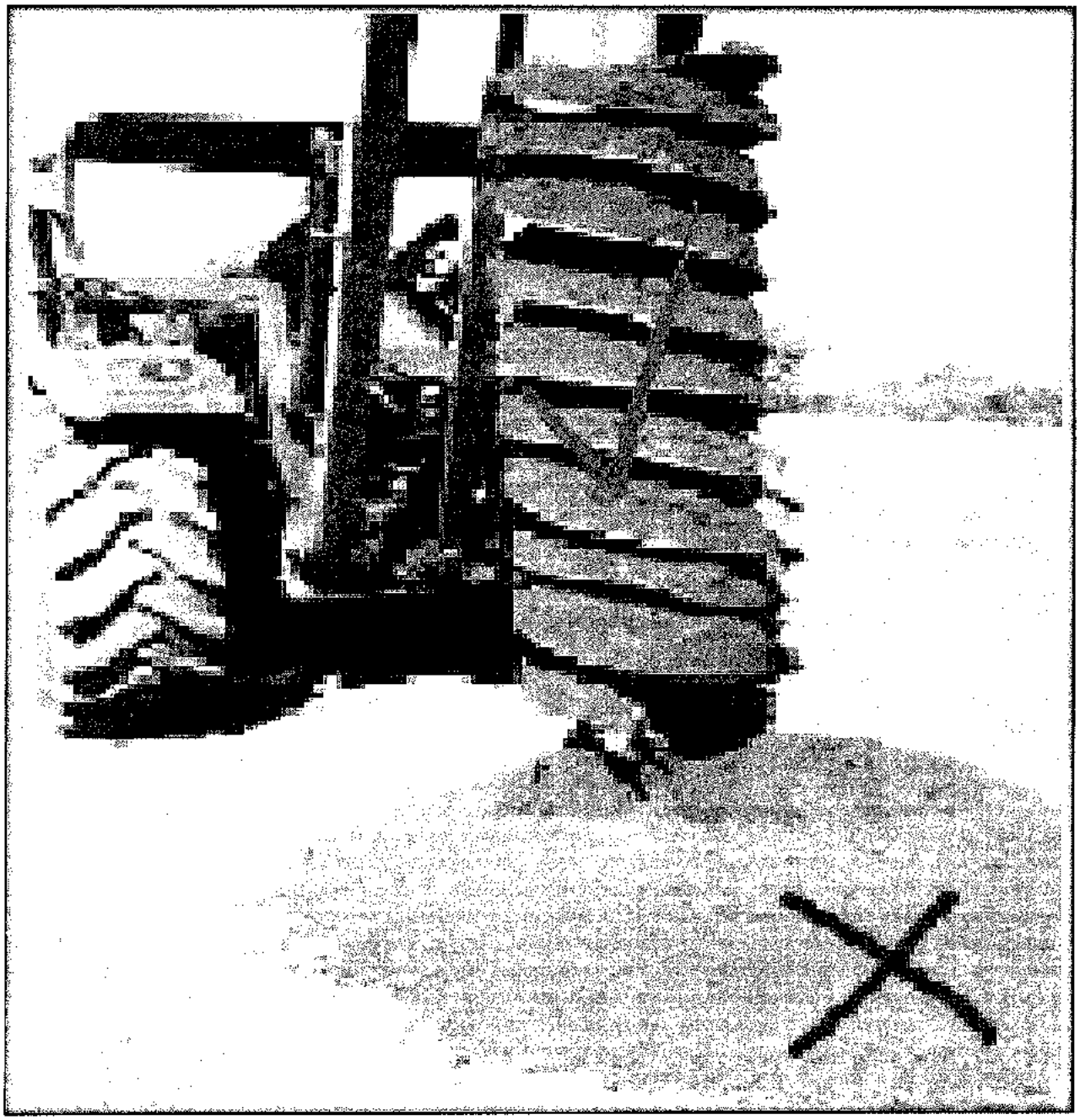


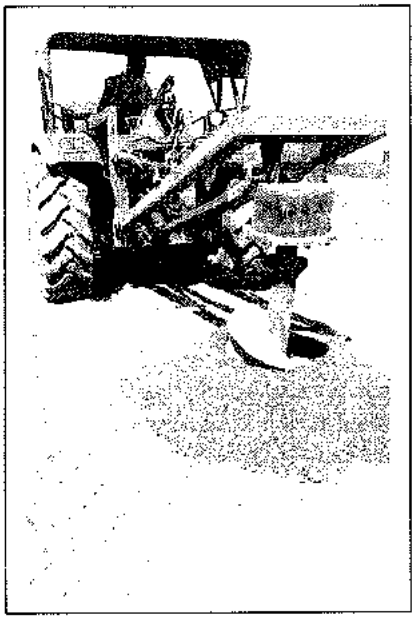
Fines Stack of 20,000 MT created forSampling

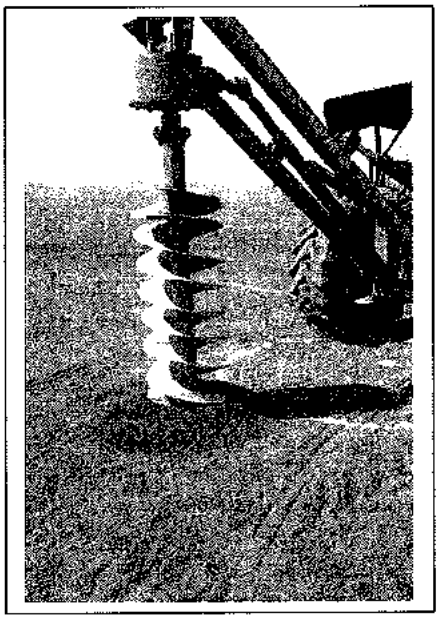
Lumps Stack of 16,000 MT created for

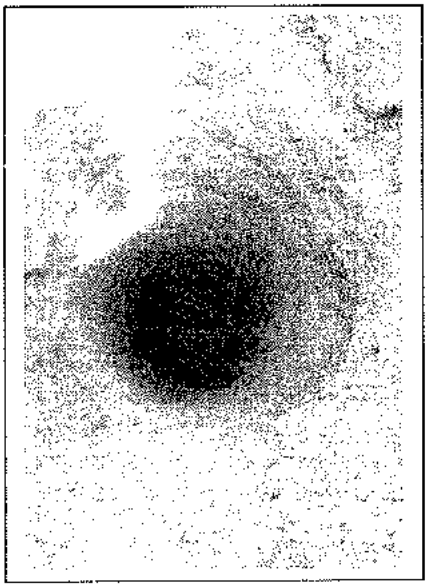
Annexure E1

The depiction of the correct place to collect the sample from after the drilling has taken place in case of trenching. The sample is to be collected from al the deposits atop the spiral and not the spill over heap surrounding the hole

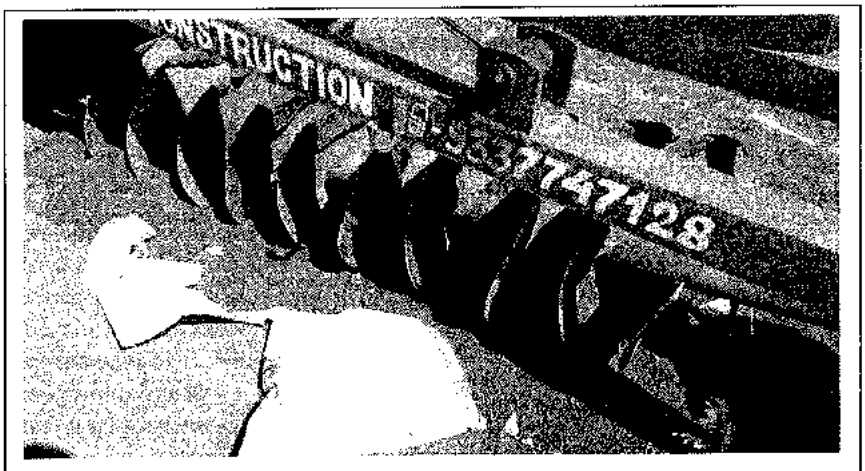




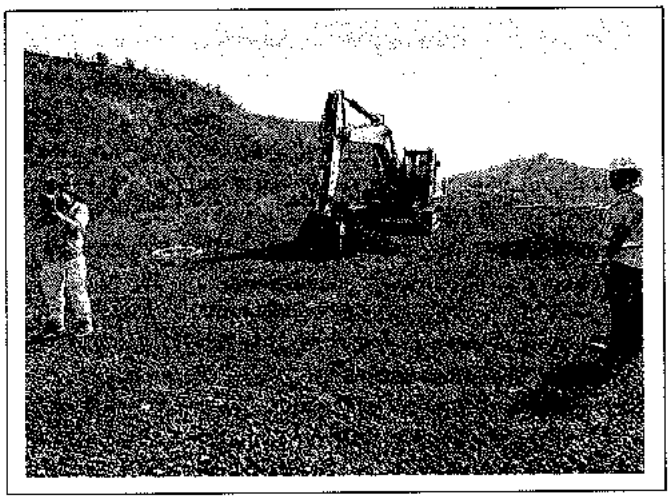


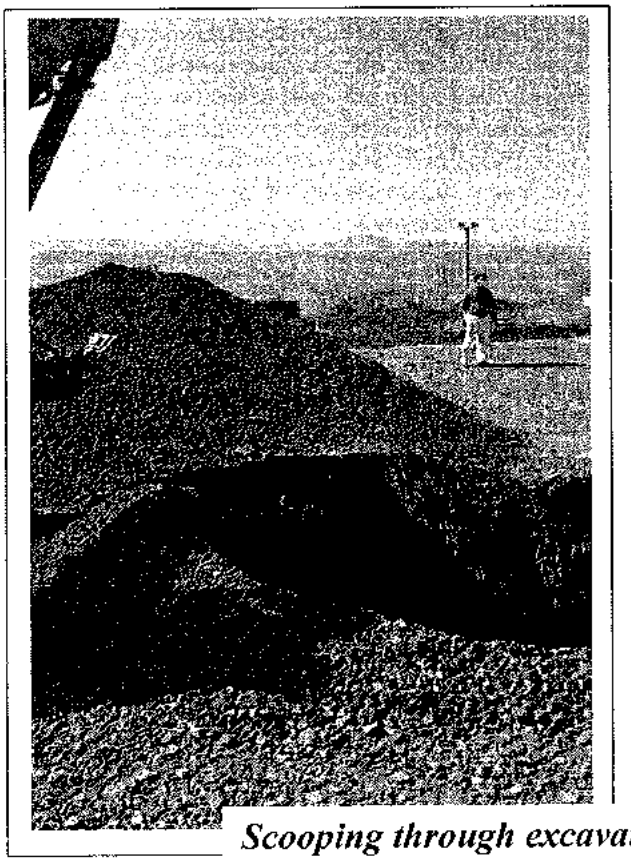


Different Stages of Augur Drilling for Fines



Sample Collections from Fines





Scooping through excavator and bagging