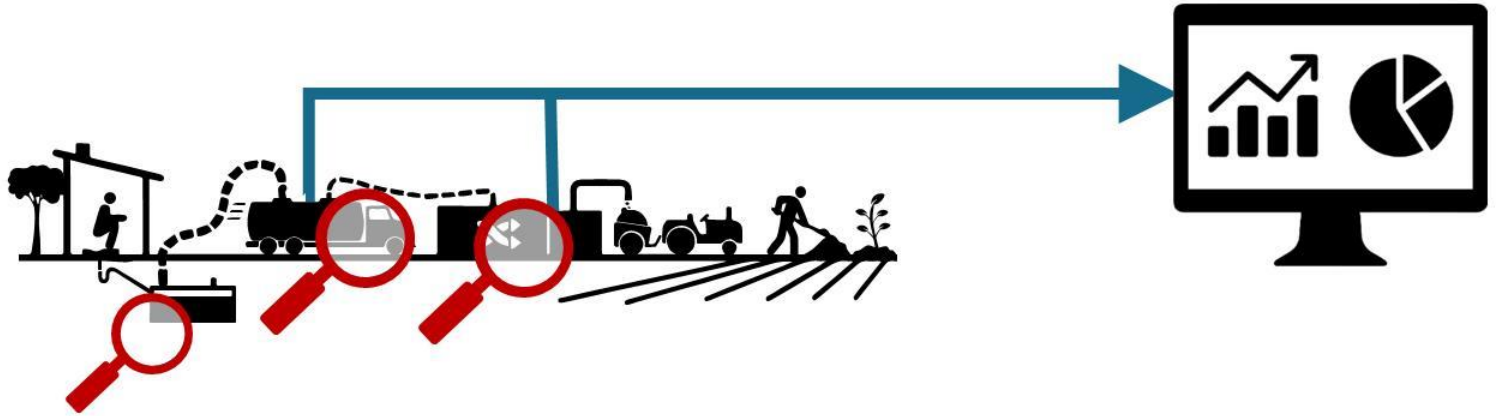


Monitoring FSSM Service Chain

September 5, 2019



Need for SMART FSSM systems



1

Building Onsite sanitation information systems

- Create database
- Monitoring forms

2

Monitoring septic tank desludging services

- Register safe delivery to FSTP
- Paperless receipts
- Capture customer signature, geo-location onscreen
- Geo-Dashboards

3

Monitoring treatment quality

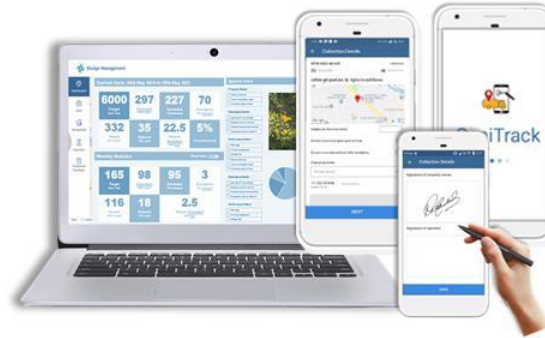
Tools for IT Enabled Monitoring Systems

SaniTab



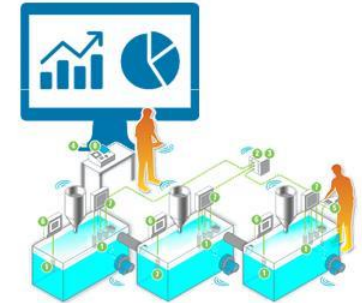
- Android App for collecting data and provides quick analyses
- Data collection to monitoring app
- Easily customizable in capturing data related to properties, type of emptying service, disposal systems and desludging performance
- A dashboard reflecting real time progress

SaniTrack



- Amazon delivery like app for desludging operations
- Modules catering to every stakeholder – truck operators, ULB Officials, administrators etc
- Ensures safe disposal at FSTP
- Downloadable septic tank desludging reports
- Easy to use, Paperless, Real time monitoring

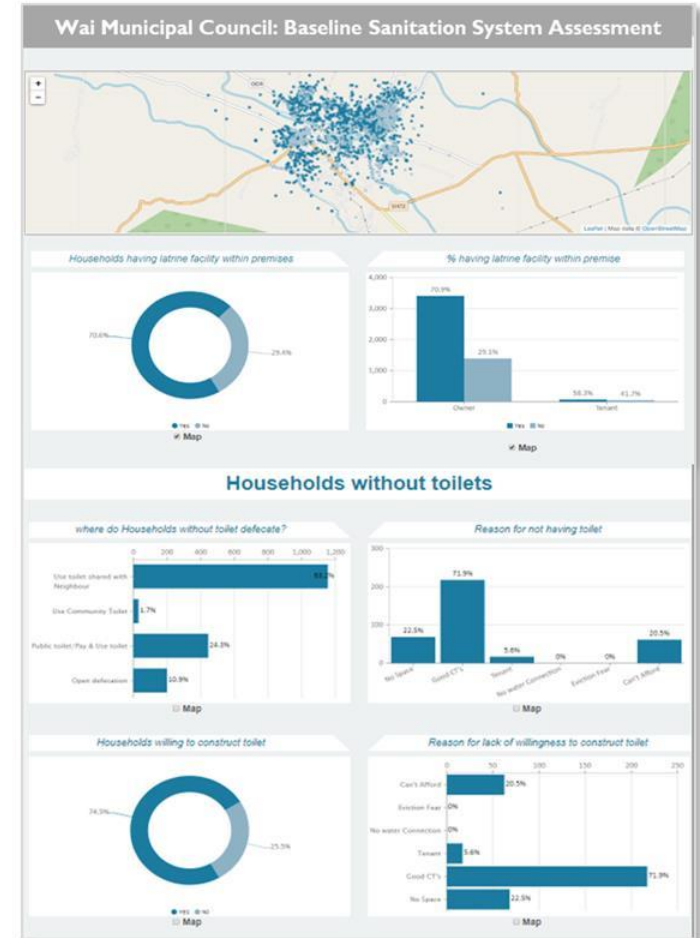
San-Q



Module in preparation for online, real-time water quality monitoring at FSTP

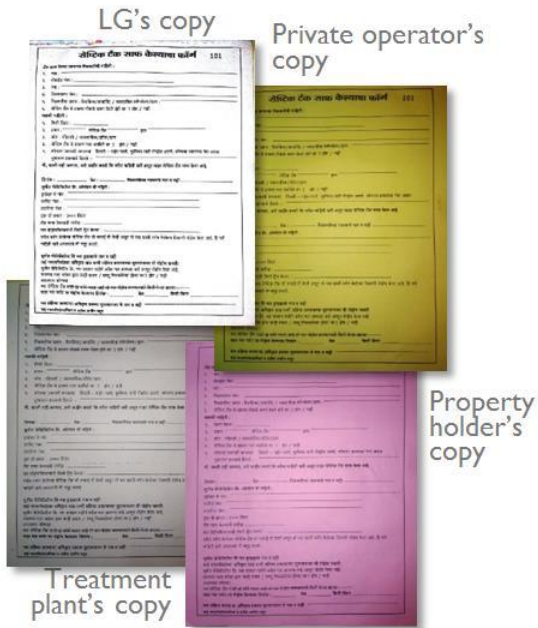
SaniTab - Creating a citywide database

- Android-based mobile app for sanitation survey
- Citywide digital data collection and monitoring tool
- Capture household / property level data
- Creating onsite sanitation database
- Supports local languages
- Custom forms

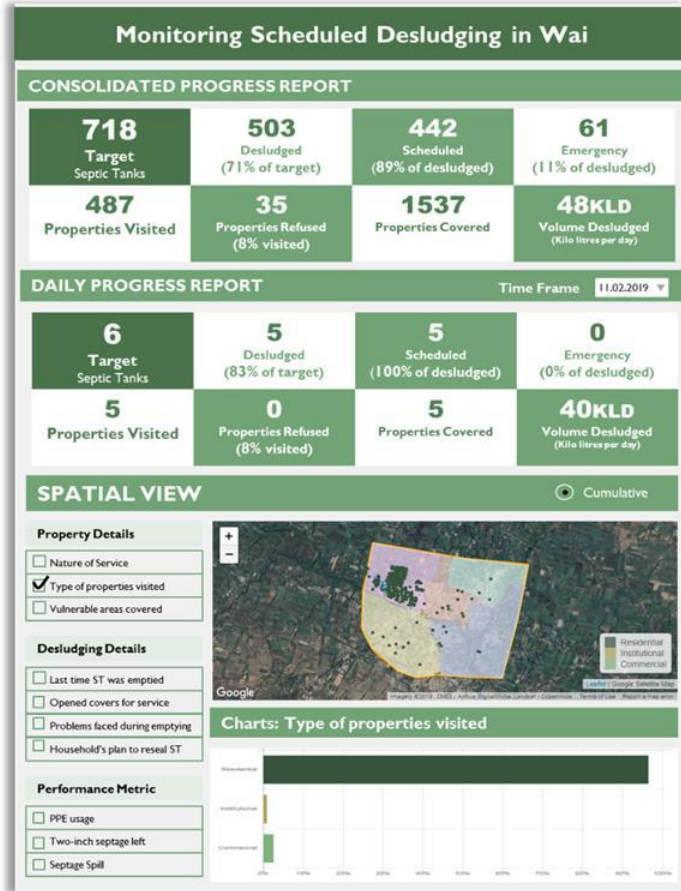


SaniTab - Monitoring for desludging service for Performance linked payments

Existing paper based monitoring system to
Online Monitoring System



- Login for different user types
- Dashboard to show real time progress
- Enables spatial information view
- Dashboard captures CWIS principles



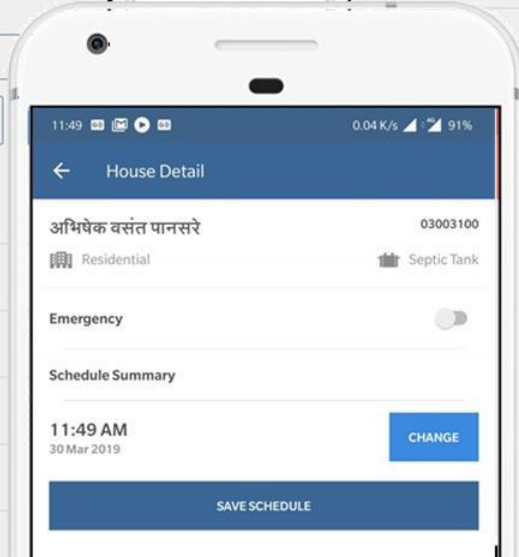
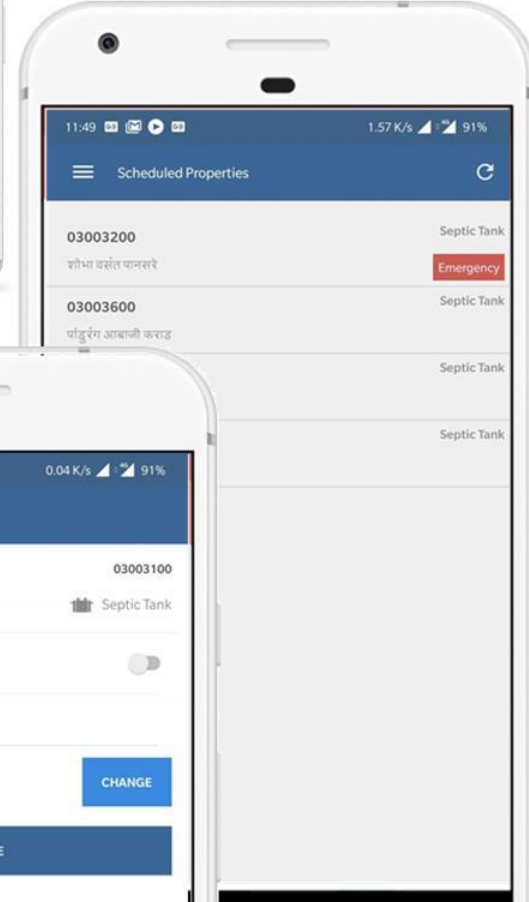
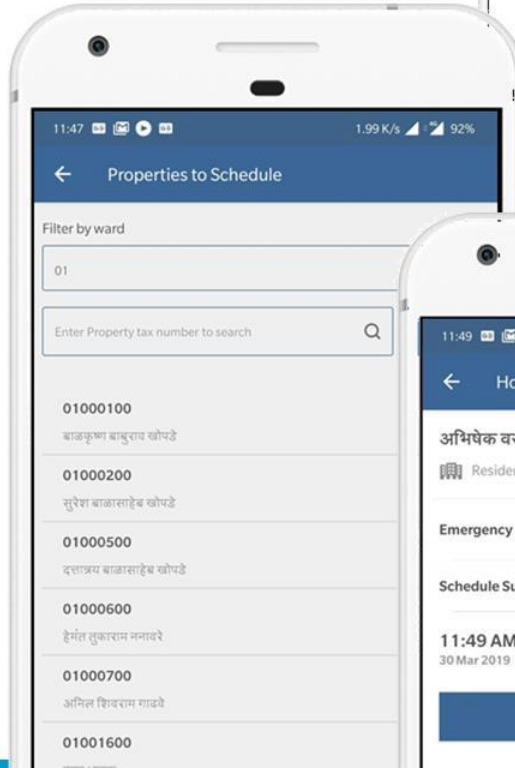
SaniTrack - End to end monitoring for FSSM

- Monitor...
 - service at property end
 - safe decanting at FSTP
 - treatment quality at FSTP
- Can handle both scheduled emptying as well as demand based operations
- Payment linked Mechanism
 - Payment can be linked to this monitoring app.
 - Payments can be done as per automatically generated reports
- Can also used as database creation tool



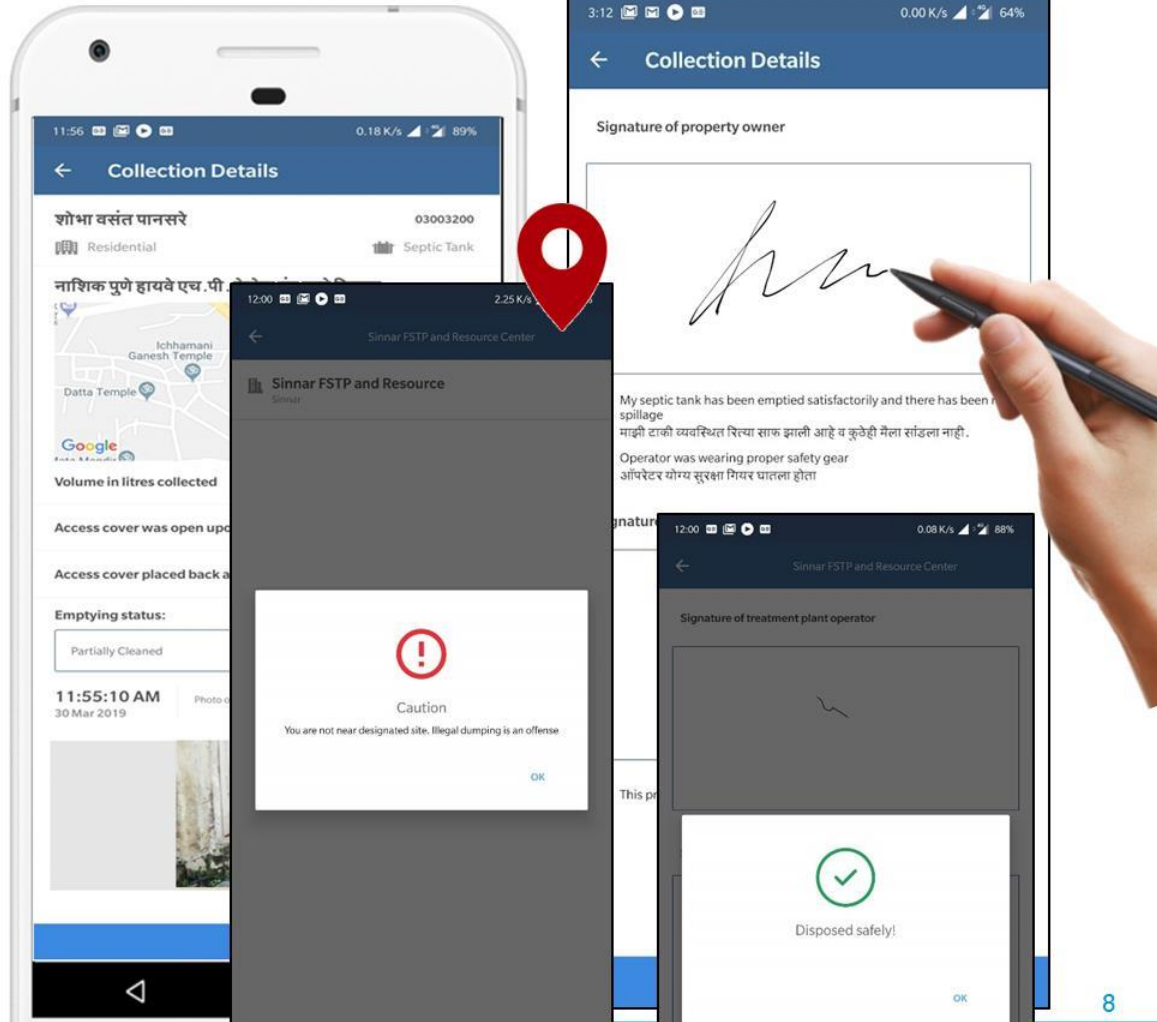
Module for scheduling

- City divided into 3 zones to be covered each year
- Separate login for schedule manager
- Add schedule by property tax number - GIS linked property tax data attached to app
- Mark as 'emergency' service



Desludging module

- Properties scheduled in previous module appear here
- Displays key property information to help locate
- Records desludging volume, status of access cover, photo of property
- Customer's & operator's signature – like Amazon delivery app
- Supports looping to collect from multiple properties in one trip or multiple trips for one property
- FSTP operator signature at disposal
- In-built validation checks



Downloadable MIS results – SaniTab and SaniTrack

SaniTrack Logged in User : Admin

Dashboard +

User -

Household -

Truck -

Treatment Facility -

Logout -

Sludge Report Start date 01/03/2019 End date 03/09/2019 Filter Sludge Entries Download XLSX

Property Tax No	Owner Name	Waste Type	Property Type	Volume	Property Owner Sign	Operator Sign	Collection Date	Truck Name	Operator Name	Treatment Facility Name	Disposal Date	Treatment Facility Operator Sign	Operator Sign	Photo	Access Cover
01050100	श्रीमती सुधा लक्ष्मणराव	Septic Tank	Residential	3000			2019-07-23 02:17 pm	Sumit truck 1	Operator	Sinar PSTP and Resource	2019-07-23 02:30 pm				Yes
02000600	श्री लक्ष्मणराव लक्ष्मणराव	Pit	Residential	2000			2019-07-23 11:58 am	Sumit truck 1	Operator	Sinar PSTP and Resource	2019-07-23 12:53 pm				Yes
05469100	श्रीमती प्रभादेवी शंकरराव	Pit	Residential	3000			2019-07-22 02:19 pm	Sumit truck 1	Operator	Sinar PSTP and Resource	2019-07-22 02:37 pm				Yes
06247100	श्री लक्ष्मणराव लक्ष्मणराव	Septic Tank	Residential	3000			2019-07-22 01:26 pm								
05265400	Ambadas Narayan Sarode	Septic Tank	Residential	3000			2019-07-22 11:50 am								
05271200	श्री लक्ष्मणराव लक्ष्मणराव	Septic Tank	Residential	3000			2019-07-22 10:55 am								
07161200	श्री लक्ष्मणराव लक्ष्मणराव	Septic Tank	Residential	3000			2019-07-22 09:31 am								
03062000	श्री लक्ष्मणराव लक्ष्मणराव	Septic Tank	Residential	3000			2019-07-19 12:03 pm								
03062000	श्री लक्ष्मणराव लक्ष्मणराव	Septic Tank	Residential	3000			2019-07-19 12:02 pm								
03061400	श्री लक्ष्मणराव लक्ष्मणराव	Septic Tank	Residential	3000			2019-07-19 10:42 am								

Submissions Form Management Site Admin Log Out

Filter Submissions Exported Submissions

Form Scheduled Emptying Filter none

Save Save As Delete

Submissions per page 100

Filters Applied Add Filter Display Metadata

	Previous	Scheduled Emptying			Next										
	guest1	2019-02-08 10:33:13.003	2019-02-08 13:52:52.617	358410093162955	417	1	6	गणपती झरणी	423	prop_open	empt	yes			
	guest1	2019-02-08 13:16:39.99	2019-02-08 14:09:21.172	358410093162955	418	1	7	गणपती झरणी	161	prop_open	empt	yes			
	guest1	2019-02-08 16:38:54.905	2019-02-08 17:46:23.567	358410093162955	419	1	5	गणपती झरणी	449	prop_open	empt	yes			
	guest1	2019-02-09 17:18:45.933	2019-02-11 17:50:19.161	358410093162955	423	1	5	गणपती झरणी	612	prop_open	empt	yes			
	guest1	2019-02-11 11:46:07.363	2019-02-11 17:50:05.525	358410093162955	424	1	5	गणपती झरणी	448	prop_open	empt	yes			
	guest1	2019-02-11 13:50:48.469	2019-02-12 10:38:31.202	868865033580421	425	1	5	गणपती झरणी	448	prop_open	empt	yes			
	guest1	2019-02-11 17:18:05.758	2019-02-12 10:38:21.763	868865033580421	226	1	5	गणपती झरणी	453	prop_open	empt	yes			
	guest1	2019-02-12 15:15:45.457	2019-02-12 16:09:43.429	358410093162955	427	1	5	गणपती झरणी	451	prop_open	empt	yes			

Visualize Export Publish

Automatic report generation

Property Tax No	Owner Name	Waste Type	Property Type	Volume	Property Owner Sign	Operator Sign	Collection Date	Truck Name	Operator Name	Treatment Facility Name	Disposal Date	Treatment Facility Operator Sign	Operator Sign	Photo	Access Cover
0100100	श्री. वि. सु. सु. सु. सु.	Septic Tank	Residential	3000			2019-07-23 02:17 pm	Sumit truck 1	Operator	Sinner PSTP and Resource	2019-07-23 02:30 pm				Yes
0200600	श्री. सु. सु. सु. सु.	Plt	Residential	2000			2019-07-23 11:58 am	Sumit truck 1	Operator	Sinner PSTP and Resource	2019-07-23 12:03 pm				Yes
05469100	श्री. सु. सु. सु. सु.	Plt	Residential	3000			2019-07-22 02:28 pm	Sumit truck 1	Operator	Sinner PSTP and Resource	2019-07-22 02:37 pm				Yes
06247100	श्री. सु. सु. सु. सु.	Septic Tank	Residential	3000			2019-07-22 01:26 pm	Sumit truck 1	Operator	Sinner PSTP and Resource	2019-07-22 01:26 pm				Yes
05205400	Ambadas Narayan Sarode	Septic Tank	Residential	3000			2019-07-22 11:50 am	Sumit truck 1	Operator	Sinner PSTP and Resource	2019-07-22 12:08 pm				Yes
05271200	श्री. सु. सु. सु. सु.	Septic Tank	Residential	3000			2019-07-22 10:55 am	Sumit truck 1	Operator	Sinner PSTP and Resource	2019-07-22 11:04 am				Yes
07161200	श्री. सु. सु. सु. सु.	Septic Tank	Residential	3000			2019-07-22 09:31 am	Sumit truck 1	Operator	Sinner PSTP and Resource	2019-07-22 10:37 am				Yes
03062000	श्री. सु. सु. सु. सु.	Septic Tank	Residential	3000			2019-07-19 12:03 pm	Sumit truck 1	Operator	Sinner PSTP and Resource	2019-07-19 12:30 pm				Yes
03062000	श्री. सु. सु. सु. सु.	Septic Tank	Residential	3000			2019-07-19 12:02 pm	Sumit truck 1	Operator	Sinner PSTP and Resource	2019-07-19 12:02 pm				Yes
03061400	श्री. सु. सु. सु. सु.	Septic Tank	Residential	3000			2019-07-19 10:42 am	Sumit truck 1	Operator	Sinner PSTP and Resource	2019-07-19 12:10 pm				Yes



Scheduled Emptying of Septic Tanks



Collection and transport record

Activity no: 14/02/19/01

Property details



Prop no: 07-1432-00
Type: Residential - Apartment
Address: समर्थ नगर, नाशिक पुना रोड, सिन्नर - 422103
Owner: श्री नितीन चंपालचोरडीया
Phone no: 9873456234
Type of system: Septic tank



Emptier details



Truck ID: Sumit truck #1
Driver: Raja.lal
Vehicle license no.: 434/13/12345
Truck capacity: 3000 L

Service details



Access cover open on arrival ✓
 Volume collected 4560 L ✓
 Access cover replaced after emptying ✓
 Emptier use proper safety gear ✓
 Number of trips taken to empty 2 ✓

Emptying Date: 14/02/2019 **Property owner:**  **Emptier:** 
Emptying Time: 14:20

Acceptance at treatment site and safe disposal



FSIP name: Sinner FSIP and resource center
Disposal Date: 14/02/2019
Disposal Time: 14:50
FSIP operator:  **Emptier:** 

Payment for desludger linked to submission of the septic tank desludging report

Dashboard in development ...



San-Q : Monitoring FSTP operations

- Installed online water quality monitoring system at both Wai and Sinnar FSTP
- Measures effluent quality @ every pre-defined time interval – pH, BOD, COD, TSS and Nitrates ...



Integration with SaniTrack underway

- Calibration activities underway
- Interface to capture daily volume treated, quality testing results
- Timeline dashboards
- Alerts on web dashboard if results exceed permitted water quality levels



Key Benefits - Program efficiency for FSSM services

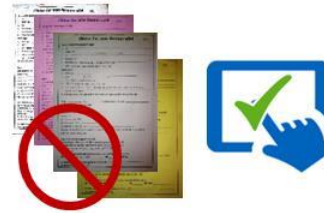
Integrated monitoring system –
Across FSM service chain



“Real time” monitoring
No need to process data



Easy to Operate,
Reduce paper work,
Minimize human error



Can view progress easily
and process payments



Citizen awareness about
emptying procedures



Photo stamping,
Geo stamping,
Signatures



Unique
database



Inclusive – supports
vernacular language



Lessons learnt

- End-to-end monitoring of FSSM services chains
- Mobile format is easy and is quickly adapted by users
- Using local language and terminology helps to adapt the system
- Pictures / symbology representation helps to explain both users and respondents – what is type of onsite sanitation system and PPE
- Network related issues in some part of localities (SaniTab enables forms upload as and when internet access is available)
- Need a one-stop solution as SaniTrack and SaniTab are viewed an integrated tool

Thank you

cwas@cept.ac.in
cwas.org.in

About us

The Center for Water and Sanitation (CWAS) at CEPT University carries out various activities – action research, training, advocacy to enable state and local governments to improve delivery of services.

CWAS
CENTER FOR WATER
AND SANITATION

CRDF
CEPT RESEARCH
AND DEVELOPMENT
FOUNDATION

CEPT
UNIVERSITY

