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Instrumentation & Control - Water/ Power/ Oil & Gas

NWC-MTCBU AL TAIF CENTRAL SCADA SYSTEM PROJECT

NATIONAL WATER COMPANY



شركة المياه الوطنية
National Water Company

Operation & Maintenance Manual

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NATIONAL WATER COMPANY

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Chapter**1**

System Description



SYSTEM DESCRIPTION

The project site is located at Al Mathnah, Wadi Waj Street, in Taif city. This document provides the Operation and Maintenance procedures for the SCADA system, which was installed at Main Control Room of NWC-MTCBU CENTRAL SCADA SYSTEM. The purpose of SCADA system is to monitoring of Reservoir, Pump station, Tanks, Filling stations, valve chamber and its auxiliary equipment.

NWC (National Water Company), a Saudi Water services Company, is considering creation of a new Central SCADA System in Taif city located at (Al Mathnah) building by embedding distributed SCADA Systems in Taif city and to connect and retrieve data and signals from remote Sites. The New Central SCADA system will be created by the state of art technology, Orchestra from Wonder ware. The scada solution provides tools and templates for collecting, Aggregating, storing, and retrieving real time and historical data. The new system would manage Sites monitoring in real time by communicating data among equipment, external applications, and Sites.

As a SCADA Work station four computers is used to monitor the plant activity which includes Water tanks, Pumping Stations, Remote Valves stations and Filling stations. Communication between Taif Central and Al-Araj WWTP is OPC communication. Communication of existing 33 RTUs is through Motorola FIU Modbus TCP. Communication of new 16 Sofrel sites is through Modbus TCP. Communication of Strategic Tank SCADA is through ABDA Server. Communication of 6 Sites (for 9 Flow Meters) is through InTouch FSGateway. Communication of 1 Lifting Station connected at Alwaqdeen is through premium PLC Modbus TCP. Logging of Data Logger data into Historian is through csv file importing into MDAS of Historian Server.

Glossary Of Terms

S&S	System Solutions..., a subsidiary of Abunayyan Trading Company.
WTP	Water Treatment Plant
WWTP	Waste Water Treatment Plant
PLC	Programmable Logic Controller
OPC	Open Platform Communication
PC	Personal Computer
SCADA	Supervisory control and Data acquisition
MMI	Man Machine Interface
MCC	Motor Control Centre
I/O	Input and/or Output
H/W	Hardware
S/W	Software
DI	Digital Input signal
DO	Digital Output signal
AI	Analogue Input signal
WS	Work Station
FAT	Factory acceptances test
SAT	Site acceptance test
FDS	Functional Design Specification
P& I	Process and Instrumentation diagram



Chapter

2

System Design

System Design.

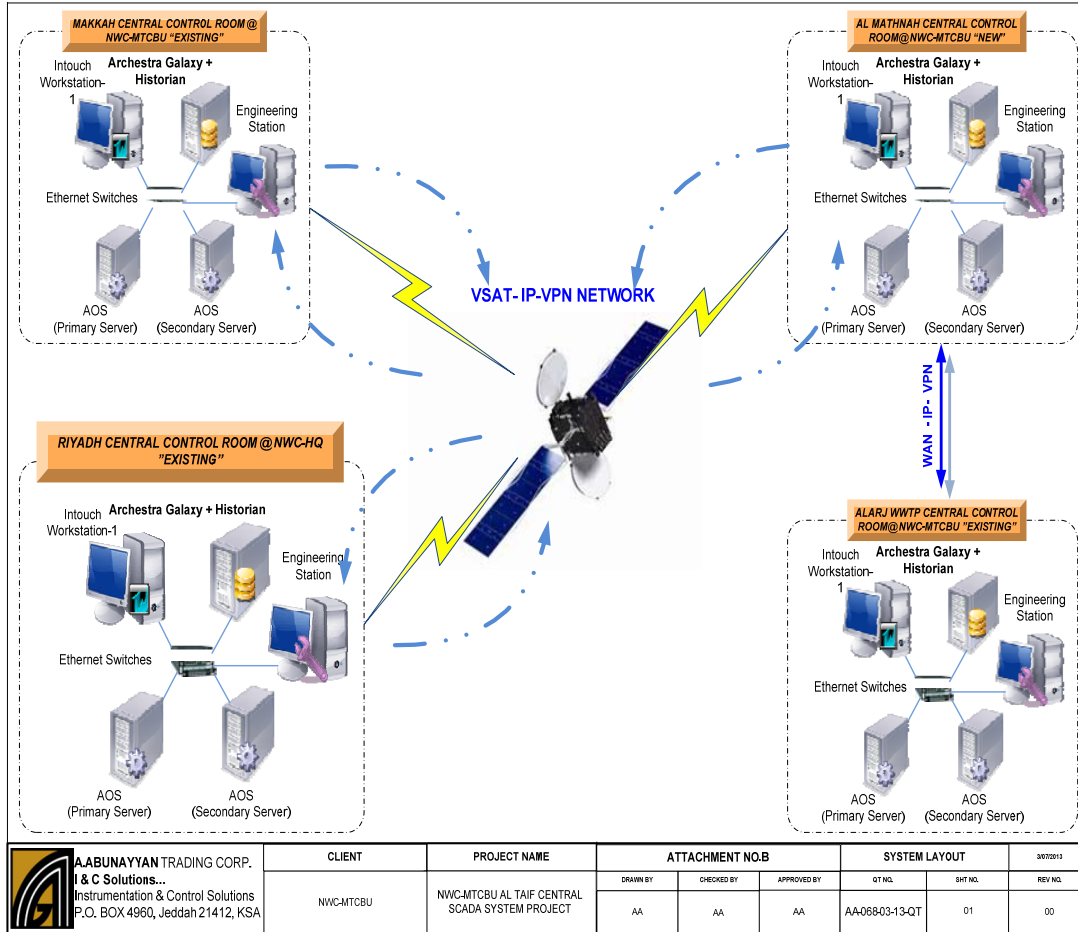
The design requirements are as defined by this document and supported by the following:

- System Architecture of NWC.
- System Architecture of Taif central scada.
- System Architecture of 16 Sofrel RTU communication.



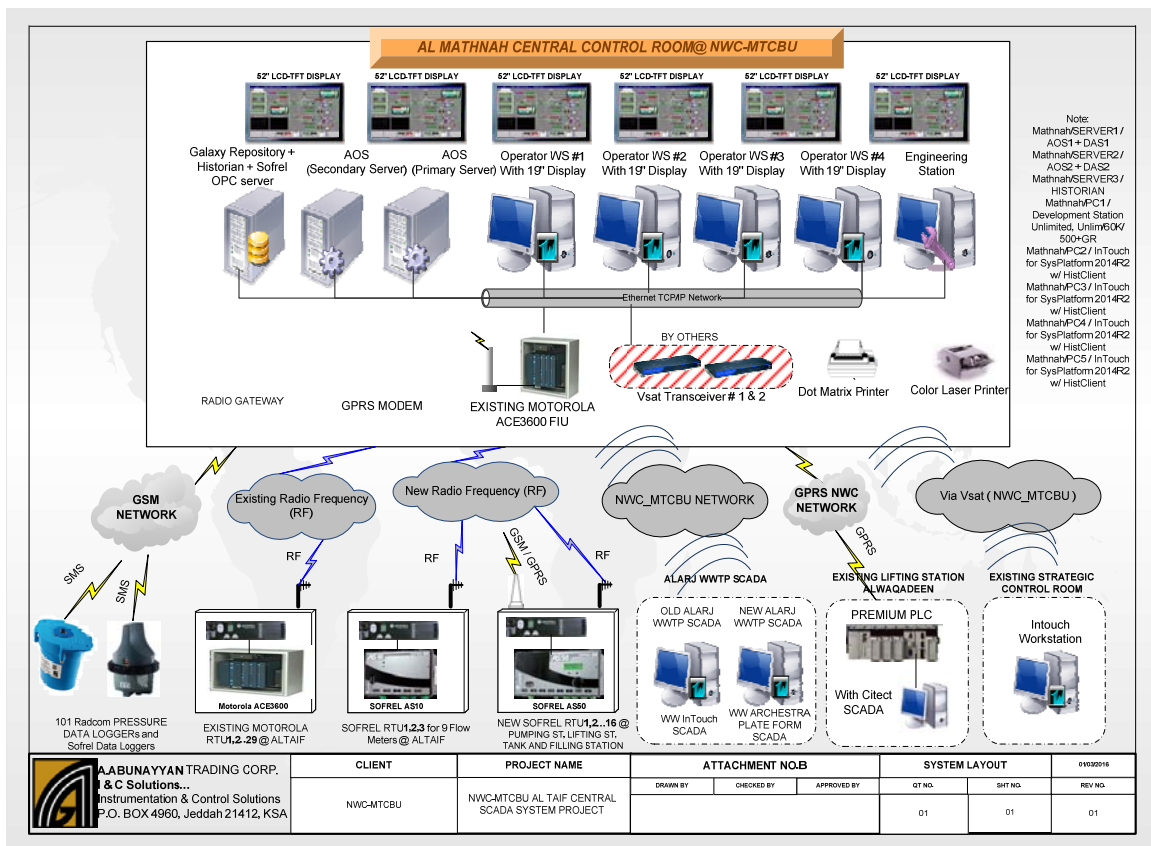
System Architecture:-

The NWC feature typical network is shown in the diagram below:



The architecture is done in accordance with HQ requirements to align the SCADA infrastructure by using the global galaxy server will located in NWC HQ (Riyadh) in order to do all the necessary development on NWC configuration Server and deploy it in Al Taif City. In addition, Al Taif Central Control Room will be linked with Makkah Central Control room for monitoring only.

System Configurations of Taif Central Scada:



The SCADA system consists of 03 servers, 05 computers and 02 printers at Al Mathnah. First server will act as Primary Server and second as Secondary Server and third one as historian for storing historical data for SCADA System. All three servers will be installed in server room. SCADA Control Room will have four operator work stations. One engineering work station that will be used for changing any configuration in system is installed in server room. Dot Matrix and color Printers at AlMathnah will be used for Alarm and report printing. 6 Big LCD screens are providing to see the scada in big view.



Below given is detailed view of system Sofrel RTU communicating to central Scada:

Sixteen new Sofrel RTU is connected to Taif Control Room. The Primary communication between RTU and Scada is through Radio Telemetry and secondary communication is GSM/GPRS. In case if Primary communication fails, Secondary Communication gets activated automatically.

There are 101 Existing Pressure Data Logger and 33 Motorola RTU's. The existing devices will also be connected to new central Scada system. One RTU is installed at main control room is responsible for monitor and control of the RTU network. It collects data through MDLC network from RTUs at Pumping Stations. FIU will transfer all the data to the main control room SCADA station for monitoring and control through TCP/IP network. MOTOROLA ACE CPU 3640 Processor has an Ethernet port feature in the front panel. MOTOROLA ACE 3640 processor installed in the Control Room is responsible for monitoring & controlling the pumping stations and collecting all the data from each of the



Inputs and Outputs connected to the devices. RTU will transfer the data to the SCADA Station for monitoring through industrial Ethernet network.

Existing InTouch SCADA at strategic tank will be interface to Mathnah control room.



SCADA WORKSTATION CONFIGURATION

SCADA workstation PC will be provided with a color graphics based operator interface as a platform for data acquisition, information display, plant control and engineering. The Operator Station will have the ability to access and control all areas in the plant. Workstation will be running Wonder ware Archestra software.

Wonder ware Graphics will consist of Overview screens, process screens, system status screen, Abbreviation screen, Trend Screens and Alarm screen.

- Process screen is made based on the Process Flow.
- Trends are selected from the Trend History Screens, which will be made on the basis of trend groups provided to S&S.
- Alarm screen is provided to see currently active alarms. Alarm history screen provided to see alarms history which gives information on alarm events. i.e. incoming time, acknowledge time and alarm reset time.
- Abbreviation screen provides detail description of tag names used for different equipment in plant.

Functionality of the Process Control & Monitoring System

The PC based SCADA System will provide all the required functionality.

- The PC base SCADA System will monitor the status of all Pumps, valves, Tank Levels and Water flow etc.
- Manual operations of different areas.
- Visual Alarms.
- Trend chart for analog instruments.



Chapter

3

System Operation Instruction

HMI Application



System Operation Instruction

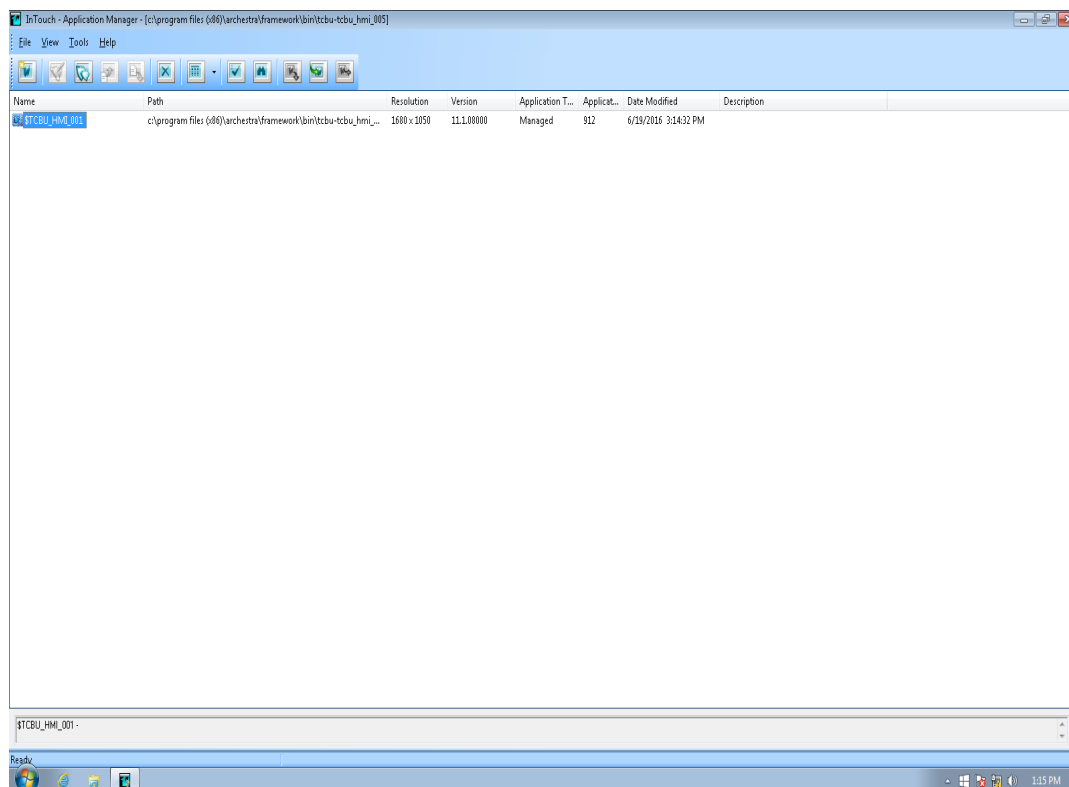
HMI Application

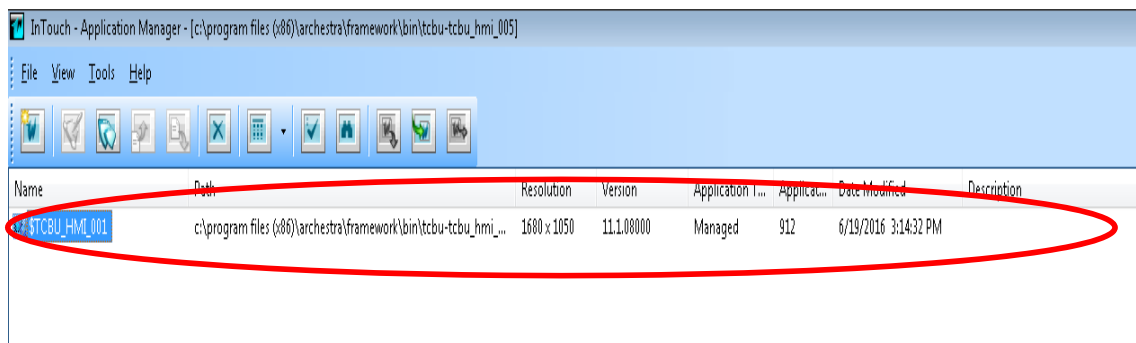
STARTUP OF OPERATOR WORKSTATION

Scada Operation

SCADA workstation is installed in Master control & monitoring room at Taif. Start windows 7 Pro operating system with user name and appropriate password. When windows starts, automatically wonder ware Archestra application starts as it is configured in startup application. In case operator exits from Window Viewer Application, procedure to start wonder ware application is as below.

1. Click on start → programs → Wonder ware → InTouch.
2. Following window will be open on desktop.





3. Select TAIF SCADA and click on File→ Window Viewer.

(Note: - Example shown here is only demo. Actual project name, path, version and resolution can be differing from this example. So select appropriate project name and start Window Viewer.)



When window viewer starts, main screen will open. This screen shows main screen page. Main screen page shows below.



For logging, click the login button. Once the users click on that button he will get Security popup for logging users. This is the popup screen where you can enter username and password.



If the User name or password is incorrect then re-enter your correct User ID and password.

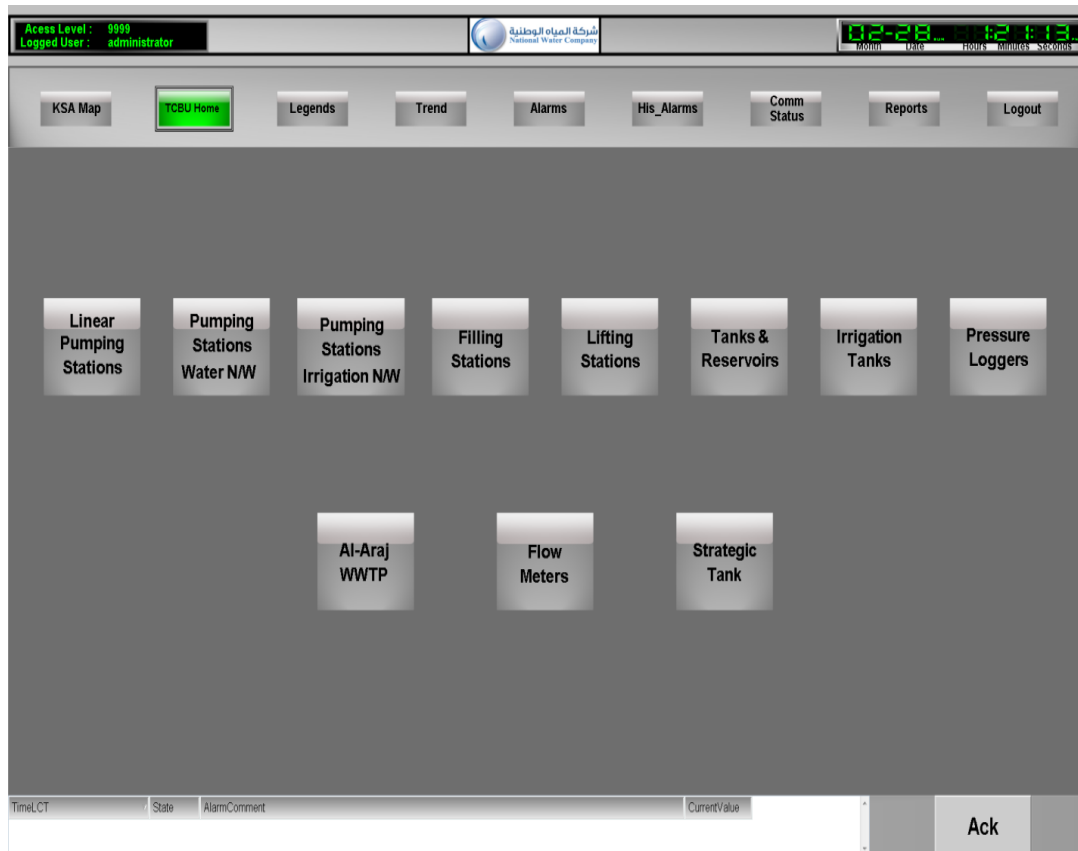


TOP WINDOW – PLANT OVERVIEW

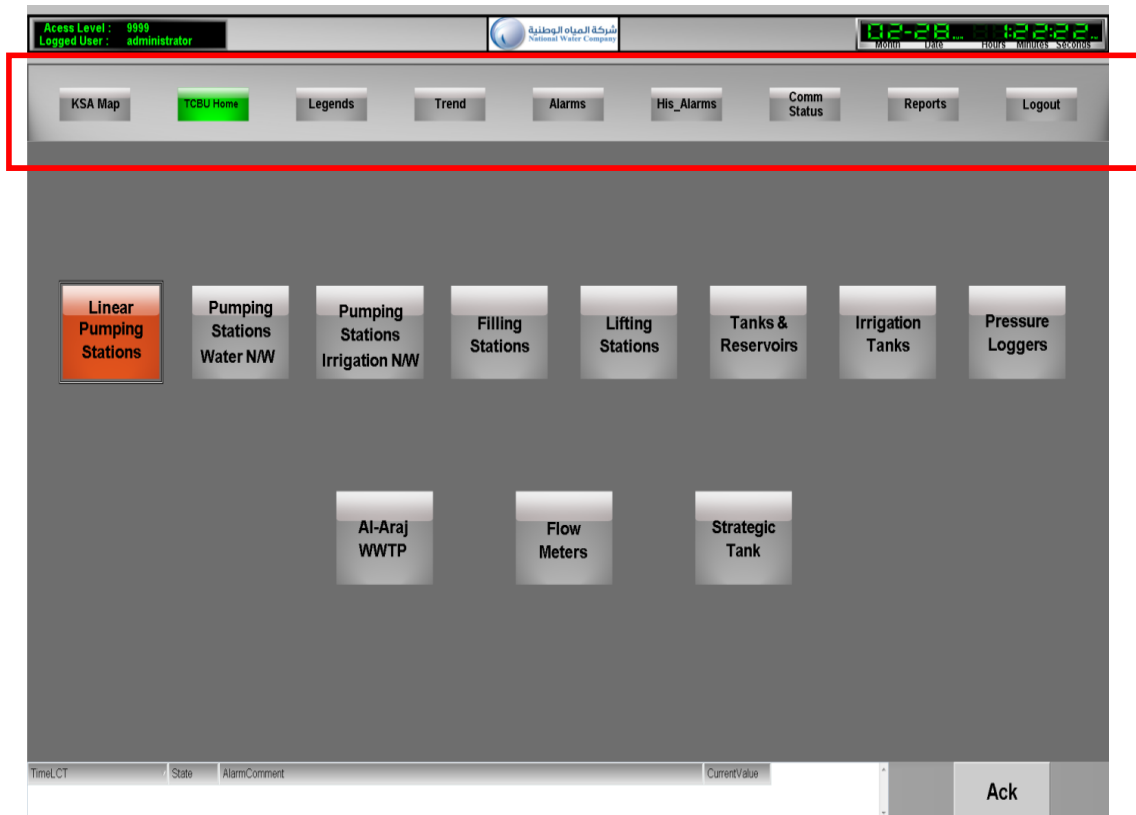
As soon as the user is logged in, with proper username and password, Plant overview map screen will be open with default Header and Footer.



The Main Body of the First Screen: Operator can go to any area of the plant by using header button. Each section or area is segregated by with different section. For example by clicking on TCBU Home screen will take the user to TCBU Main area.



Click on respective button to access to screens. User can monitor the basic status of the communication from this screen. Similarly he may even monitor the state of flow rate, level, and stations by clicking individual section area.



Header and footer:

From header operator can know the status of current user with its access level, Date time and screens button etc. Footer consist of Latest alarms and ACK button for alarm etc

Header has different navigation buttons as per section area. For example user or operator wants header section of Linear Pumping Station then user can select the Linear Pumping Stations section from overview screen (TCBU Home), after pressing the Linear pumping station of map user will get the Header.

Header:



Date Time: this will show the system date and time.

Logging User: this will show the user who has logging the scada.

Access Level: this will show the level of user who has logging the scada.

Navigation button: navigation button of each section of area is different. Common navigation of header is explaining below.

KSA Map: moves the user to the KSA map section area.

TCBU Home: moves the user to the overview section screen of project.

Legends: Pressing this button user can have access through screen showing LEGENDS, which help user to understand standard symbols, used in application.

Trends: displays the trending screen where the user can see trends and values of any analog signal.

Alarms: moves the user to the historical alarms page that shows alarms in the system.

Comm Status: Pressing this button user can have access through navigations screen of all Communication of Pump Stations and control room.

Log Out: this wills Log Off any user from the system.

Footer:

Time/CT	State	Alarm/Comment	Current/Value	
18-10-2013 01:23:49:341 PM	UNACK	AL-ESAET Communication Status Communication Failed	true	Ack
18-10-2013 01:26:23:006 PM	UNACK	...	41	

This screen contains the three rows of Alarm message Bar which is common to all the screens (process or auxiliaries).and ACK button for acknowledge all the system alarms.



POP-UPS:

1) Pump Popup Screen.

The following below indicates the Pump Popup Screen layout of Linear Pumping Stations



Buttons:

AUTO / MANUAL: Auto - Manual selection button.

This button is used to select the Automatic or Manual operation of the Pump in Remote Mode.





When pump is selected in “REMOTE” Mode, Auto-Manual button gets enabled.

When selection is at Auto the pump is automatically operated by RTU (Auto button or auto logic will be used in future. At present auto button have no any command) and when it is at **Manual** the pump has to be operated manually by the operator from SCADA And when pump is selected in “LOCAL” Mode from MCC, Auto-Manual selection get disabled.

START / STOP: This button is used to start and stop the pump in REMOTE Manual mode. On pressing the Start button, the Pump is started if all interlocks associated with the pump are normal. On pressing the Stop Button, the pump is stopped. The buttons are disabled if the pump is put in Local Mode from the MCC.

Local/Remote: Local LED will be on when the MCC switch is in Local Position and Remote LED will be on when the MCC switch is in Remote Position

Status:-

Acknowledge: Alarms can be acknowledged using this button.

RUN LED will be ON when the pump is running; it will be OFF when the pump is stopped.

TRIP LED will be ON when the pump trips and

Fail to start LED will be ON when the Pump On feedback is not received.

Daily running hours will show Daily runtime of the pump and will reset itself at midnight.

Resettable Run Hours will show Total run hours can it can be reset at any time using the **RESET** button.



CLOSE: Click on this button to close the popup screen.



2) RTU SIGNALS.

The following below indicates the RTU Signal section.



Site ID shows the **RTU ID**.

If Communication fails, **COM LED** goes off. If the LED is green then Communication with the RTU is ok.

Interrogate button is used to check if the communication is ok and updated with current time.

Power Fail LED glows if RTU's Power supply fails.

IO MOD Fail LED glows if any of the RTU modules fail.

Active LED glows when the RTU is in Active state. It can be activated/deactivated using the '**A**' Button.

Update RTU button updates all the bits shown above. Any changes in those bits are reflected in the LEDs.



3) Flow Indicator.

The following below indicates Flow Indicator.



Daily Flow shows Daily flow and resets automatically at midnight

Total Flow shows the total flow till it is reset using the reset button.

4) Instruments popup.



High Alarm LED will glow if the Value rises above High setpoint and

Low Alarm LED will glow if the value drops below low setpoint.

Calibration is used to set the Minimum and maximum EU. The value will be calibrated accordingly.



CLOSE: Click on this button to close the popup screen.



5) SCUM Pump Popup.

The following below indicates the SCUM Pump Popup.



Buttons:

START/STOP Buttons: Only Start/Stop button is available in this popup . They are used to start and stop the pumps



CLOSE: Click on this button to close the popup screen.

6) Aeration Mixer Popup.

The following below indicates the Valve Popup Screen layout of PS9.



Buttons:

Start high speed / Start Low Speed / Stop. It has two speeds. Both speeds can be controlled using Start high speed and Start Low speed.

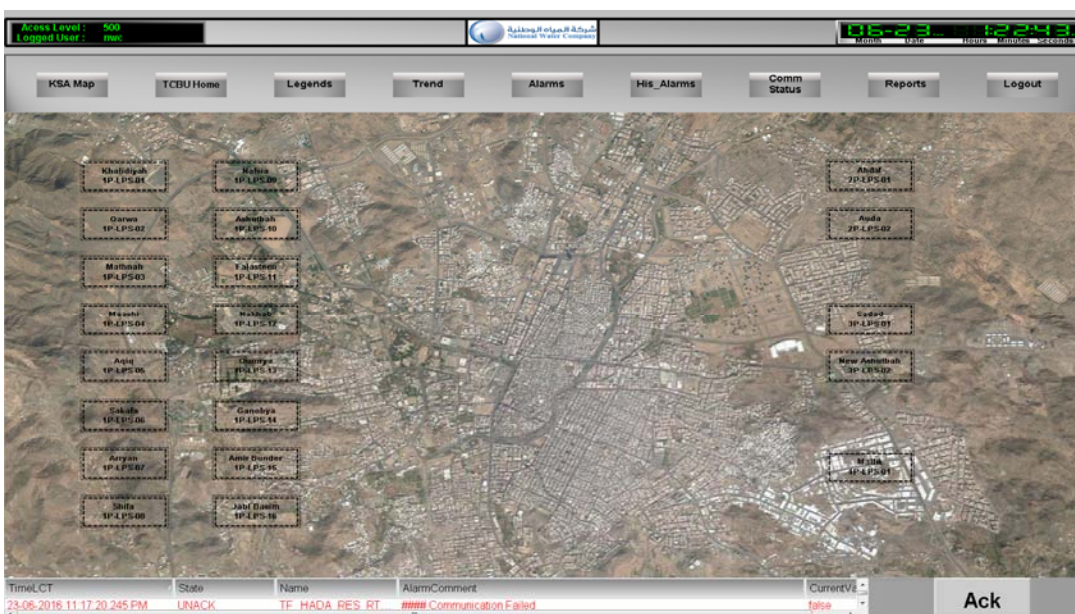


CLOSE: Click on this button to close the popup screen.

SCADA SCREEN

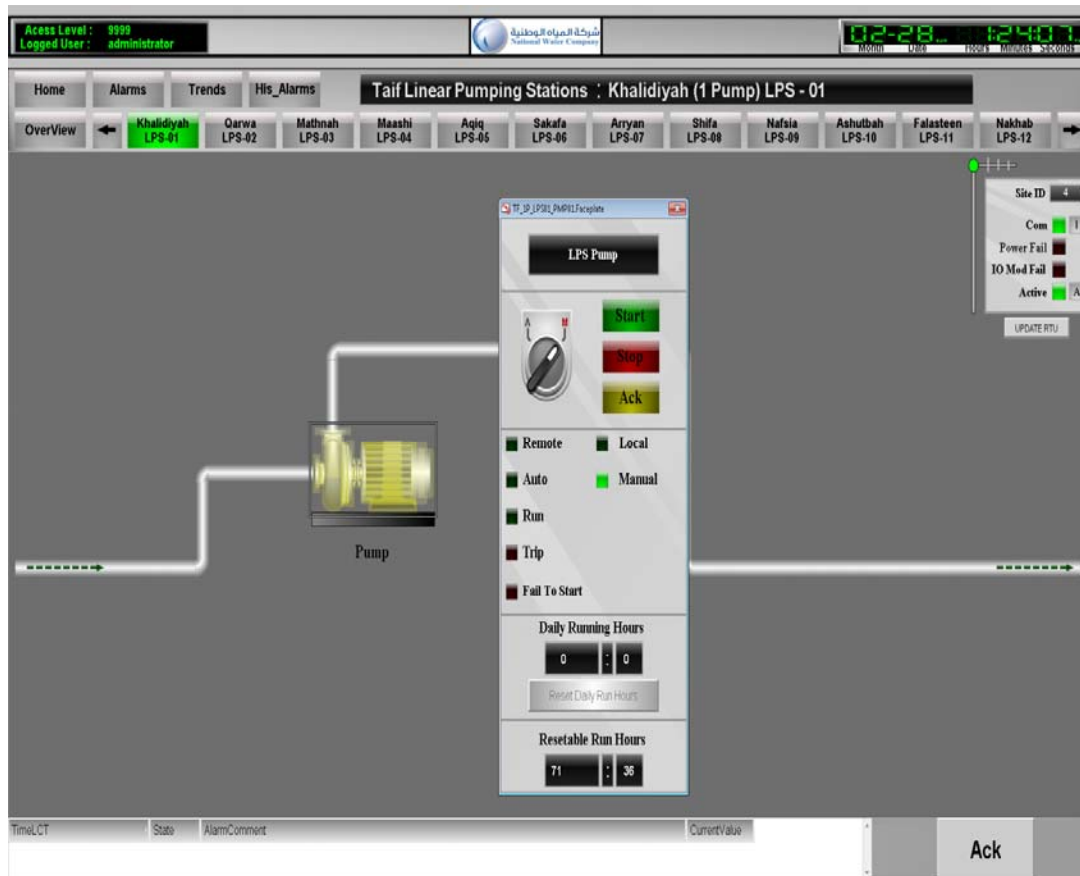
1) Linear Pumping Stations

After the clicking Linear pumping stations section button, user will get the header section with LPS in that section. User can select which LPS to choose by clicking on the tabs in the header.





■ Khaldiyyah LPS - 01

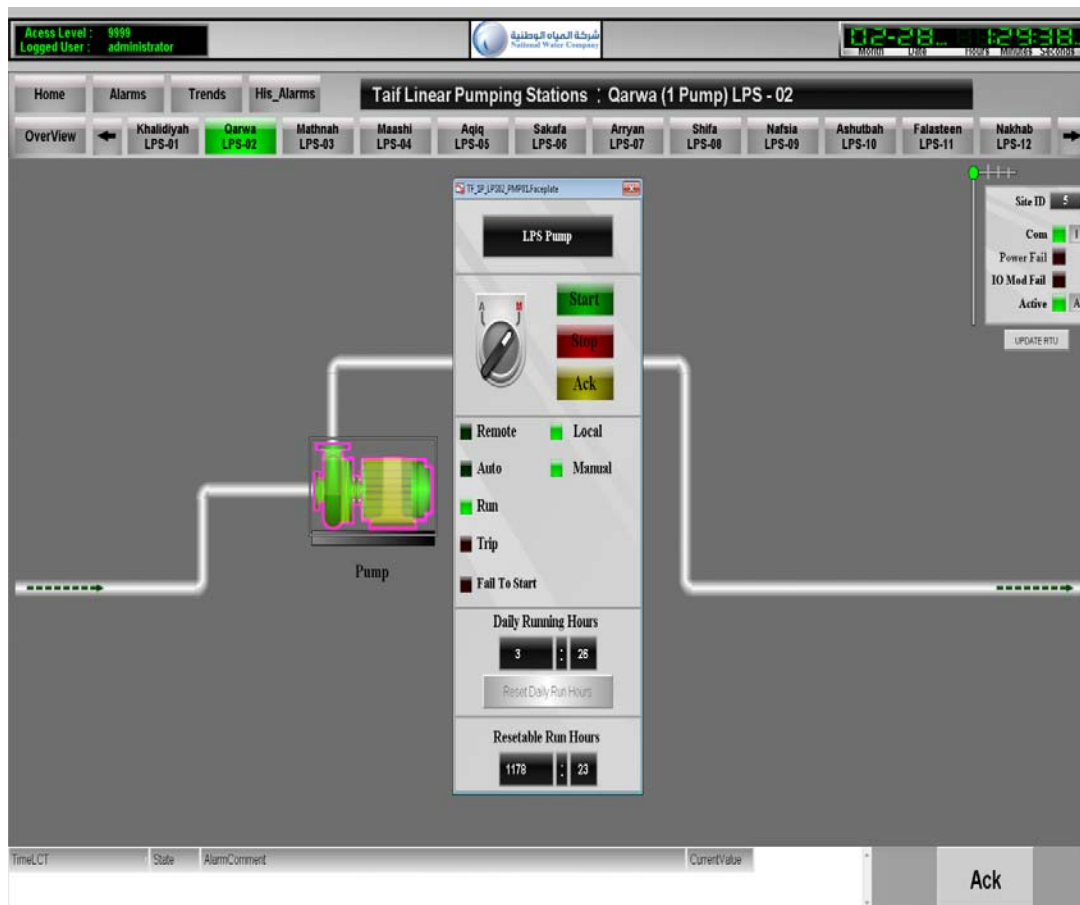


This section includes the following:

- 1 no of Pump

By clicking Khaldiyyah LPS - 01 button from header section, user will get the Khaldiyyah LPS - 01 screen .Here user can see the status of communication between RTU and Scada.

■ Qarwa LPS - 02

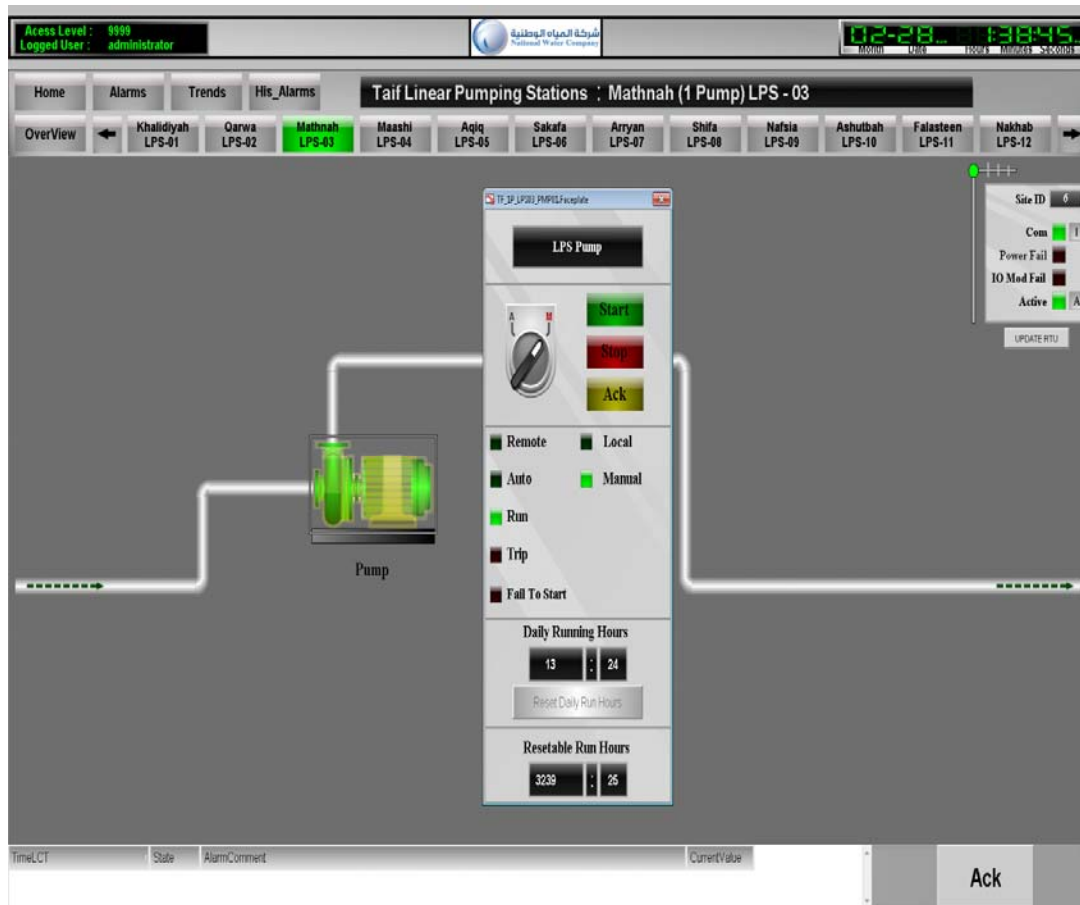


This section includes the following:

- 1 no of Pump

By clicking Qarwa LPS - 02 button from header section, user will get the Qarwa LPS - 02 screen .Here users can see the status of communication between RTU and Scada.

■ Mathnah lps-03



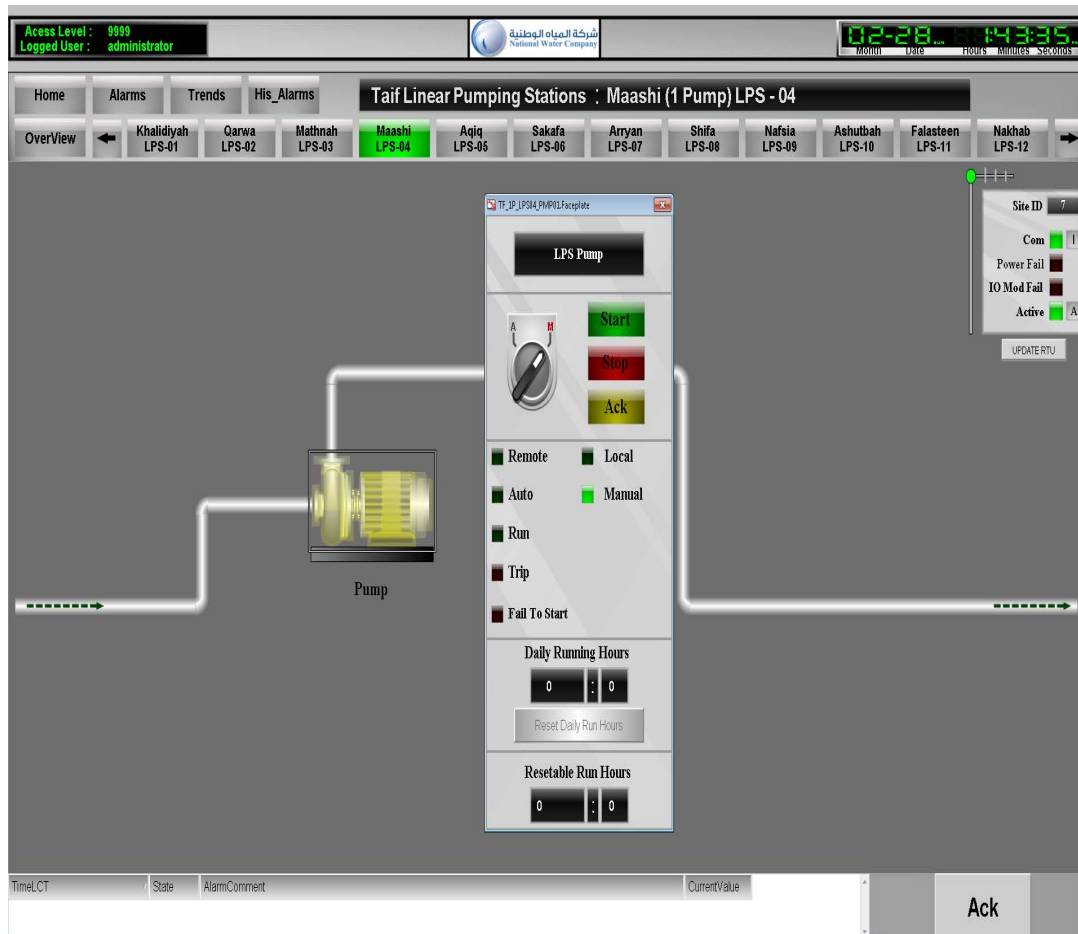
This section includes the following:

- 1 no of Pump

By clicking Mathnah lps-03 button from header section, user will get the Mathnah lps-03screen .Here user can see the status of communication between RTU and Scada.



■ Maashi lps-04



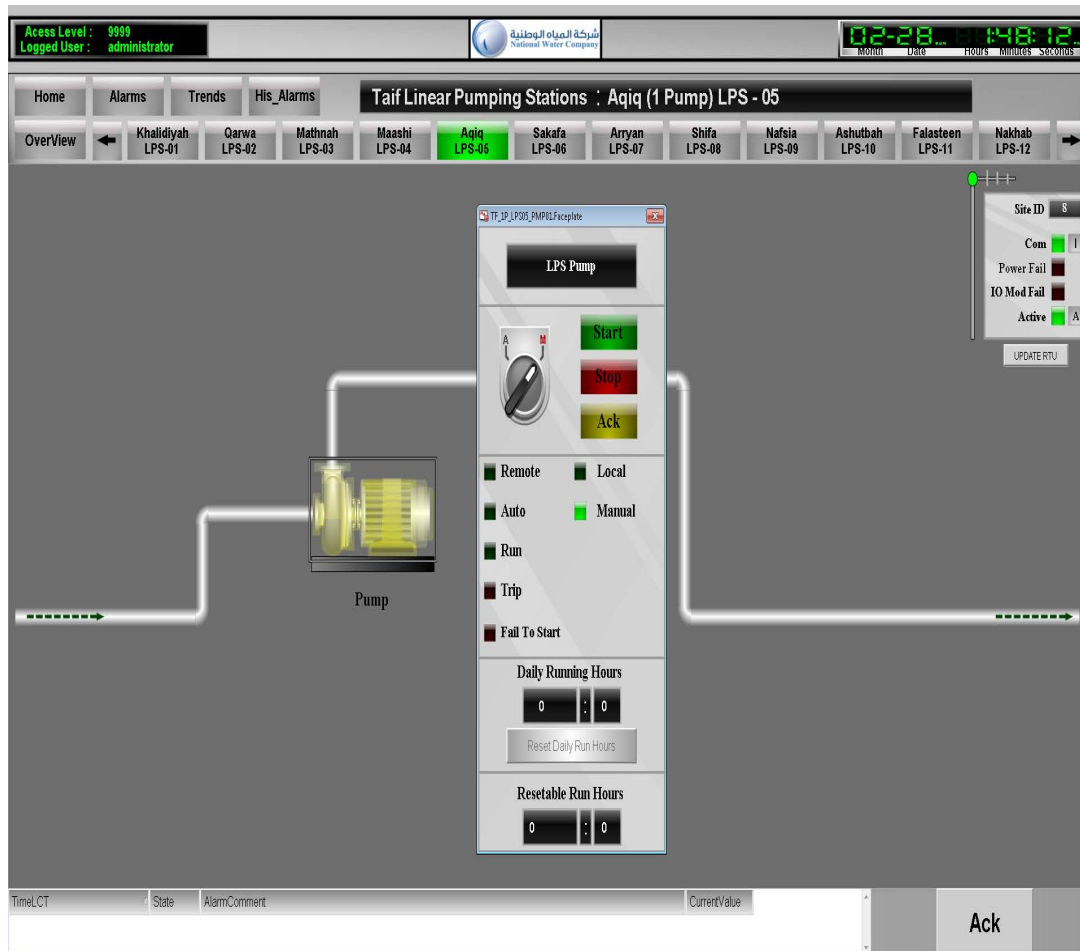
This section includes the following:

- 1 no of Pump

By clicking Maashi lps-04 button from header section, user will get the Maashi lps-04 screen. Here user can see the status of communication between RTU and Scada.



▪ Aqiq LPS - 05



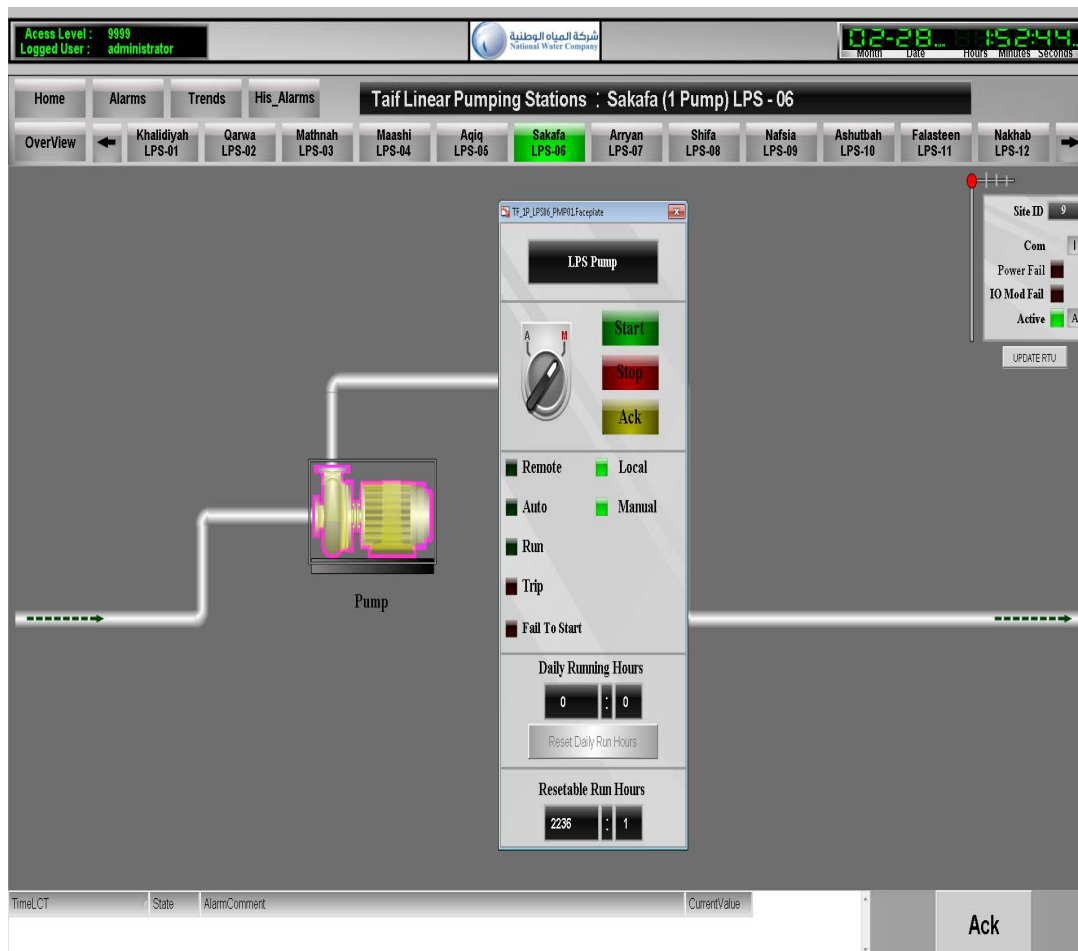
This section includes the following:

- 1 no of Pump

By clicking Aqiq LPS - 05 button from header section, user will get the Aqiq LPS - 05 screen .Here user can see the status of communication between RTU and Scada.



■ Sakafa LPS - 06



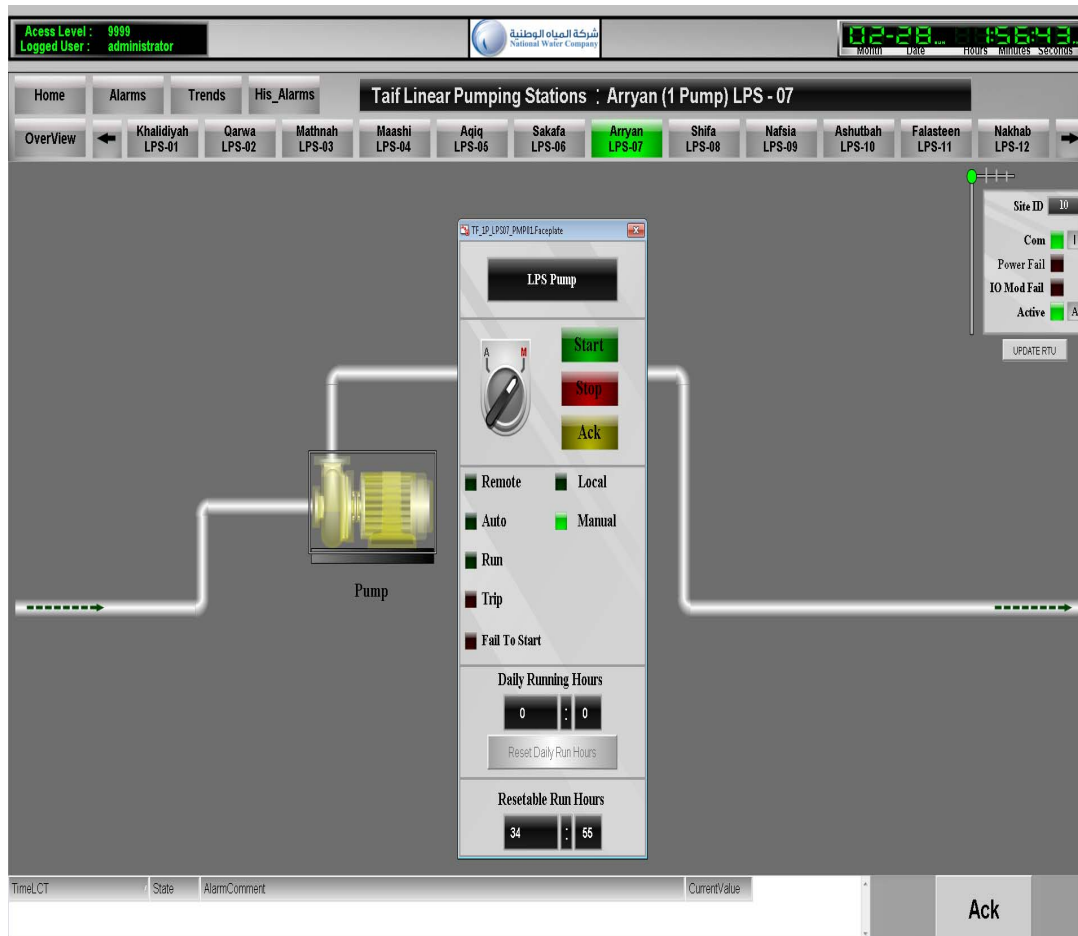
This section includes the following:

- 1 no of Pump

By clicking Sakafa LPS - 06 buttons from header section, user will get the Sakafa LPS - 06 screen .Here users can see the status of communication between RTU and Scada.



▪ Arryan lps-07



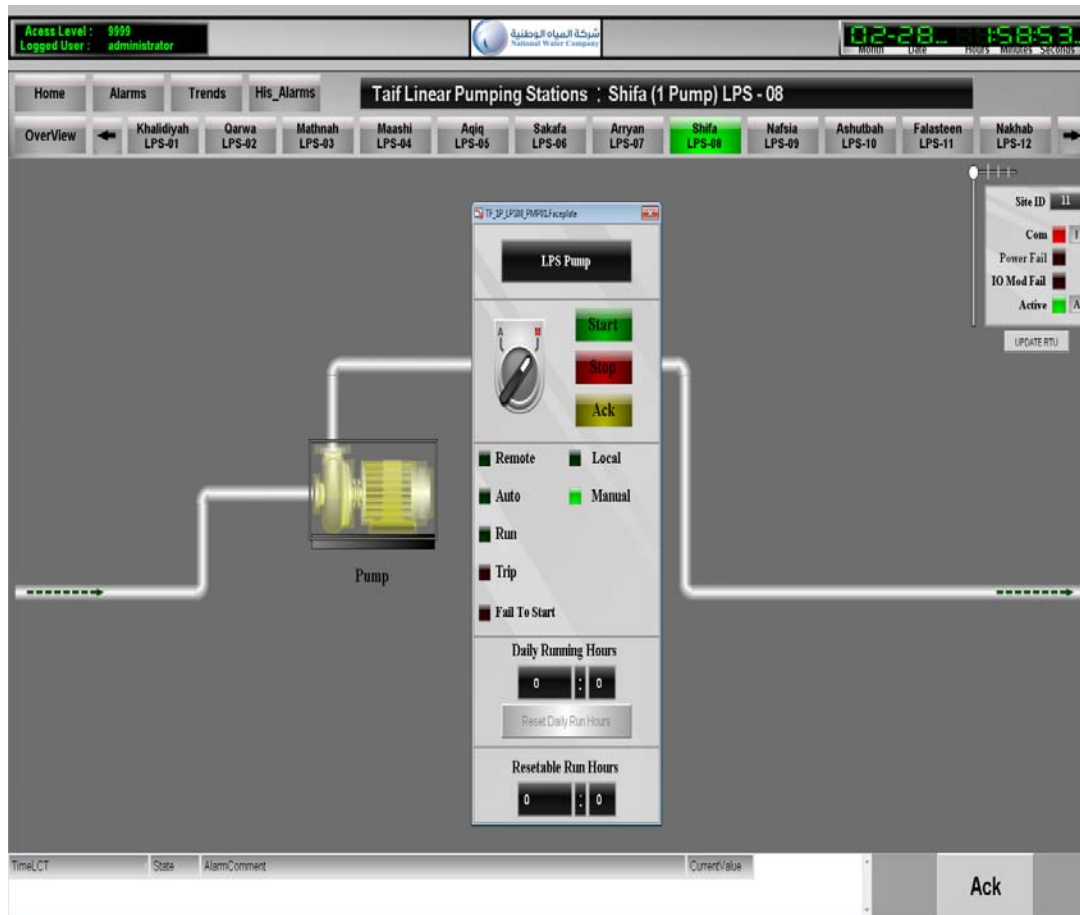
This section includes the following:

- 1 no of Pump

By clicking Arryan lps-07 button from header section, user will get the Arryan lps-07 screen .Here user can see the status of communication between RTU and Scada.



■ Shifa LPS - 08



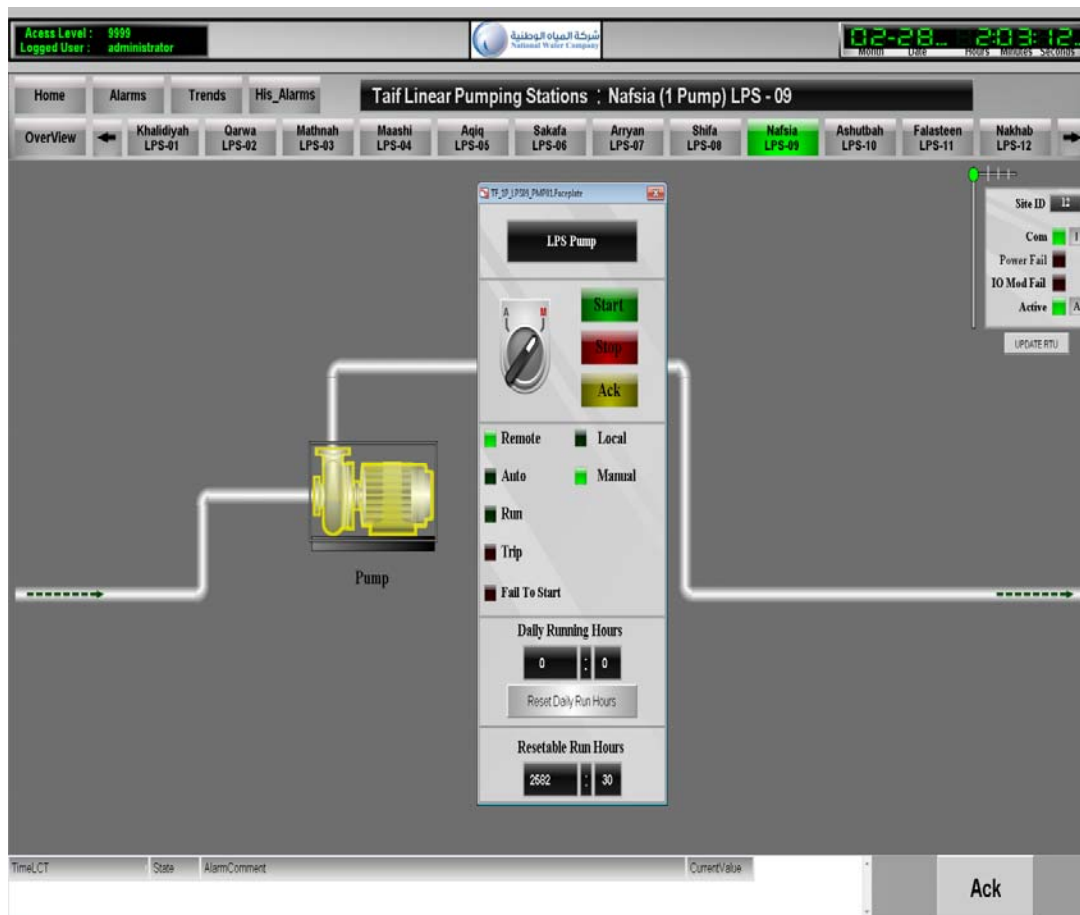
This section includes the following:

- 1 no of Pump

By clicking Shifa LPS - 08 buttons from header section, user will get the Shifa LPS - 08 screen .Here users can see the status of communication between RTU and Scada.



■ Nafsia LPS - 09



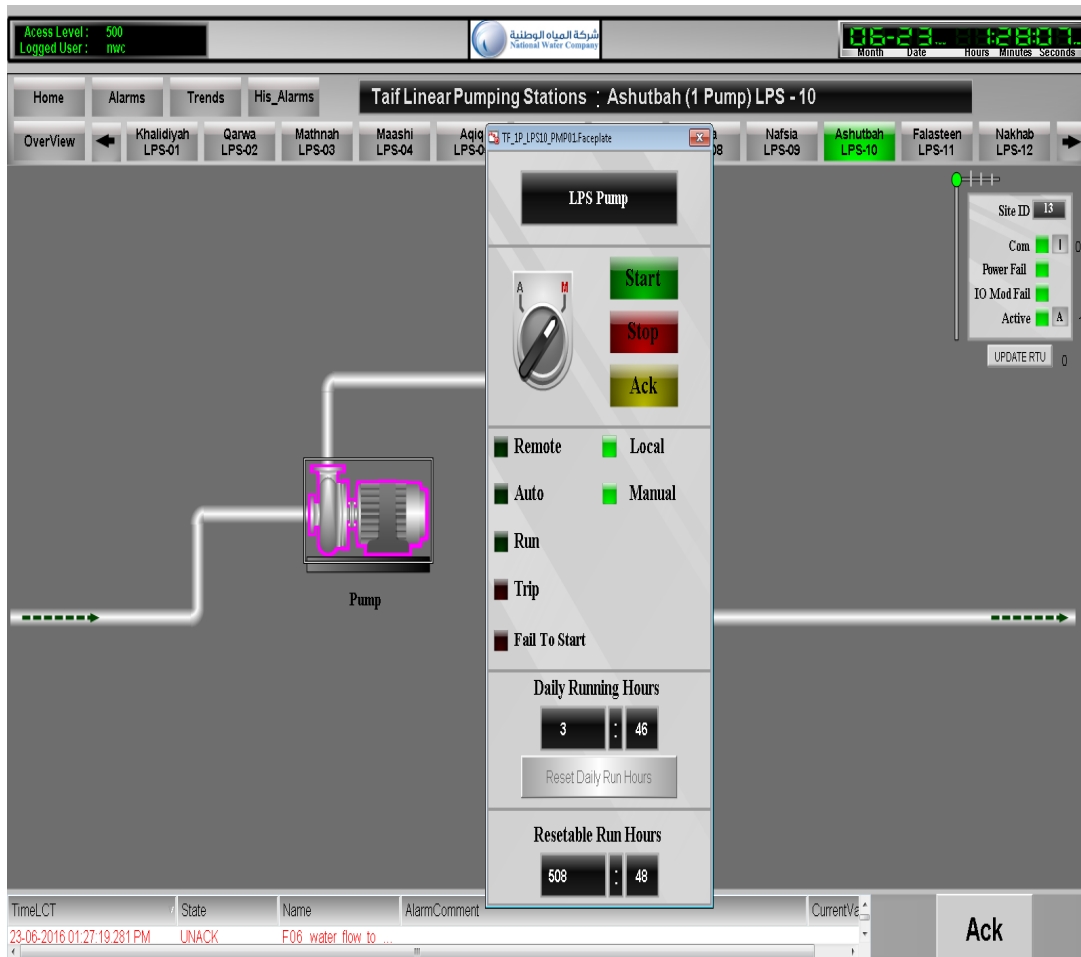
This section includes the following:

- 1 no of Pump

By clicking Nafsia LPS - 09 button from header section, user will get the Nafsia LPS - 09 screen. Here user can see the status of communication between RTU and Scada.



■ Ashutbah LPS - 10



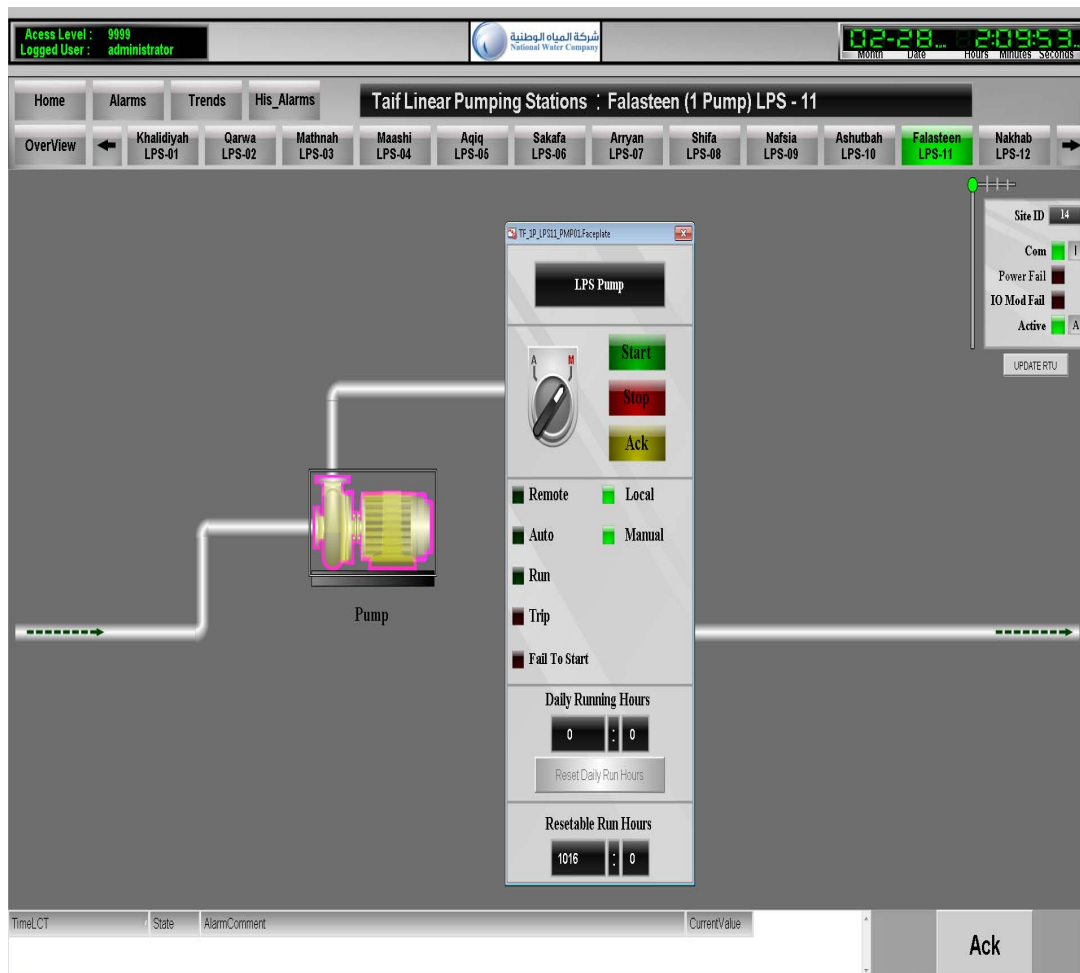
This section includes the following:

- 1 no of Pump

By clicking Ashutbah LPS - 10 buttons from header section, user will get the Ashutbah LPS - 10 screen .Here users can see the status of communication between RTU and Scada.



■ Falasteen LPS - 11

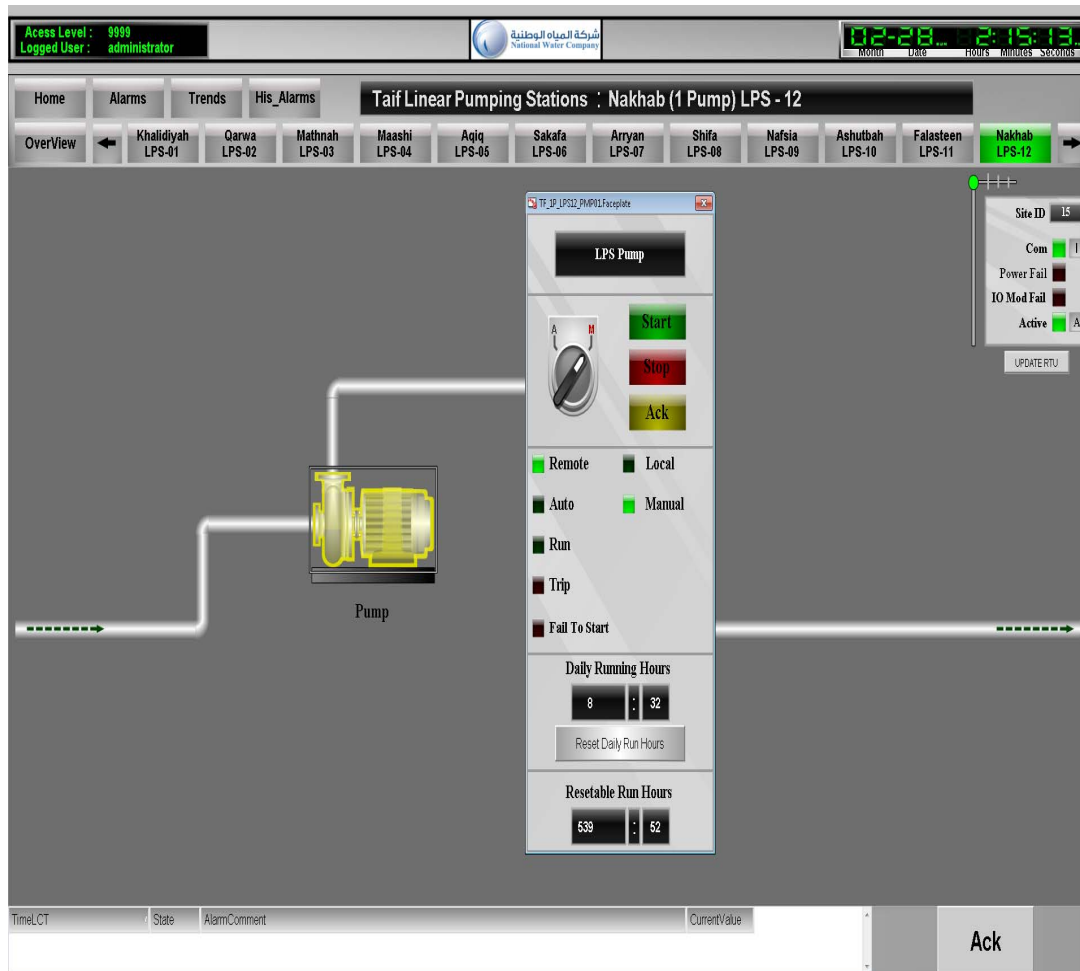


This section includes the following:

- 1 no of Pump

By clicking Falasteen LPS - 11 buttons from header section, user will get the Falasteen LPS - 11 screen .Here users can see the status of communication between RTU and Scada.

■ Nakhab LPS - 12

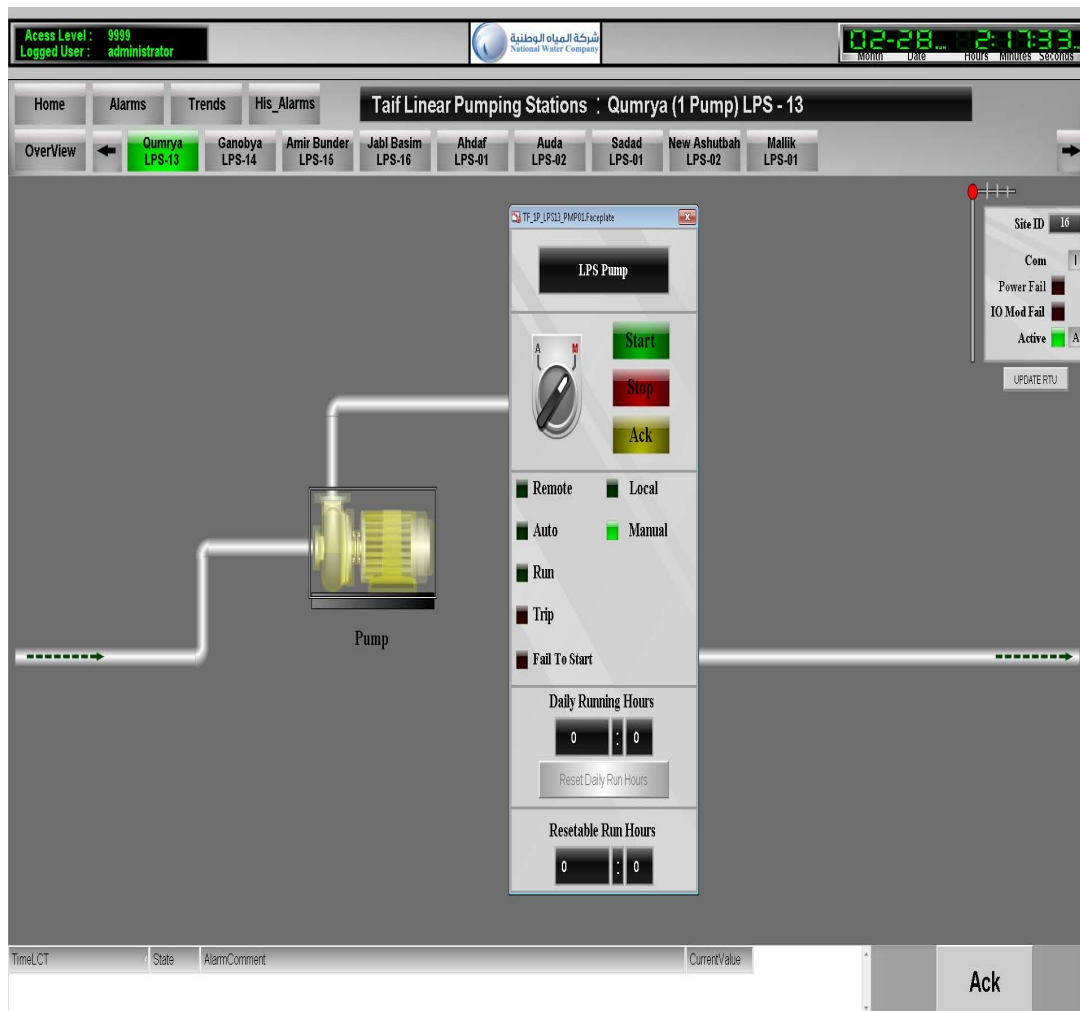


This section includes the following:

- 1 no of Pump

By clicking Nakhab LPS - 12 button from header section, user will get the Nakhab LPS - 12 screen .Here users can see the status of communication between RTU and Scada.

■ Qumrya LPS - 13



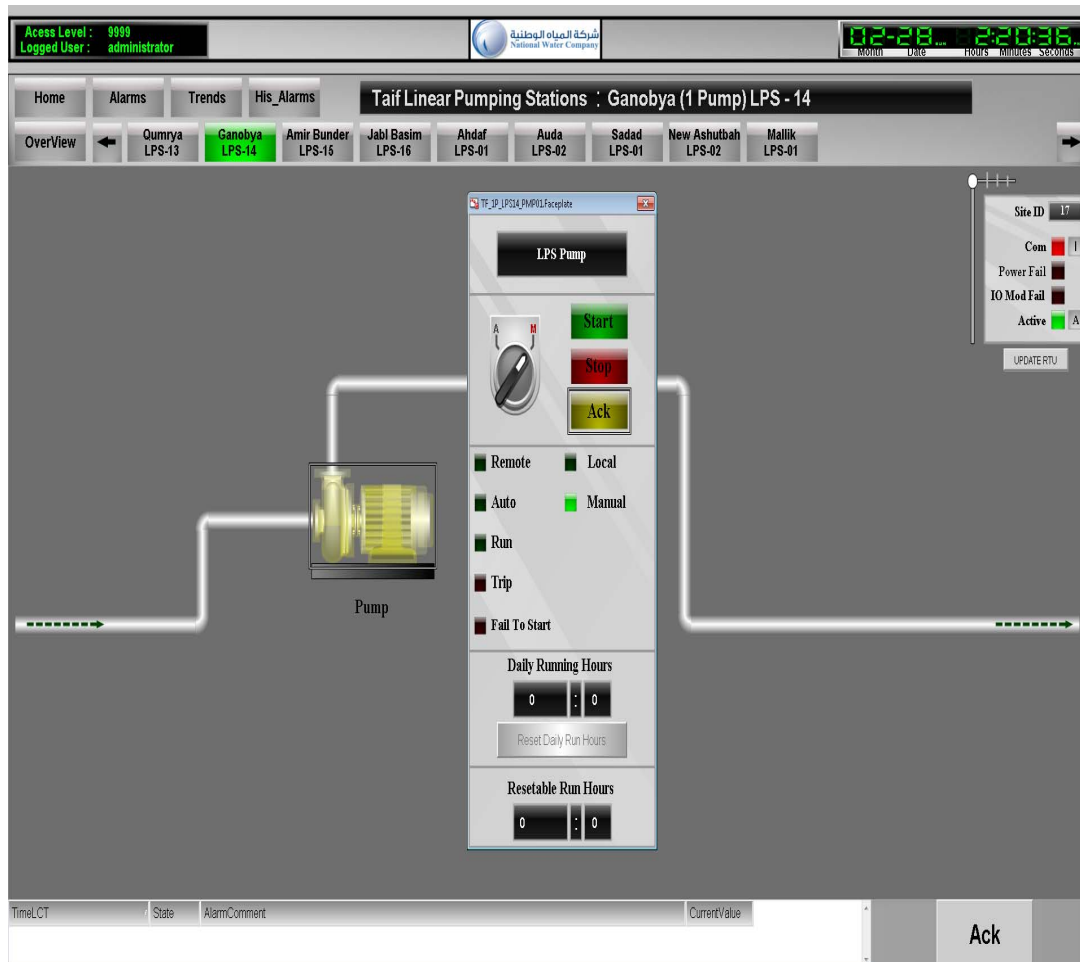
This section includes the following:

- 1 no of Pump

By clicking Qumrya LPS - 13 button from header section, user will get the Qumrya LPS - 13 screen .Here users can see the status of communication between RTU and Scada.



■ Ganobyia LPS - 14



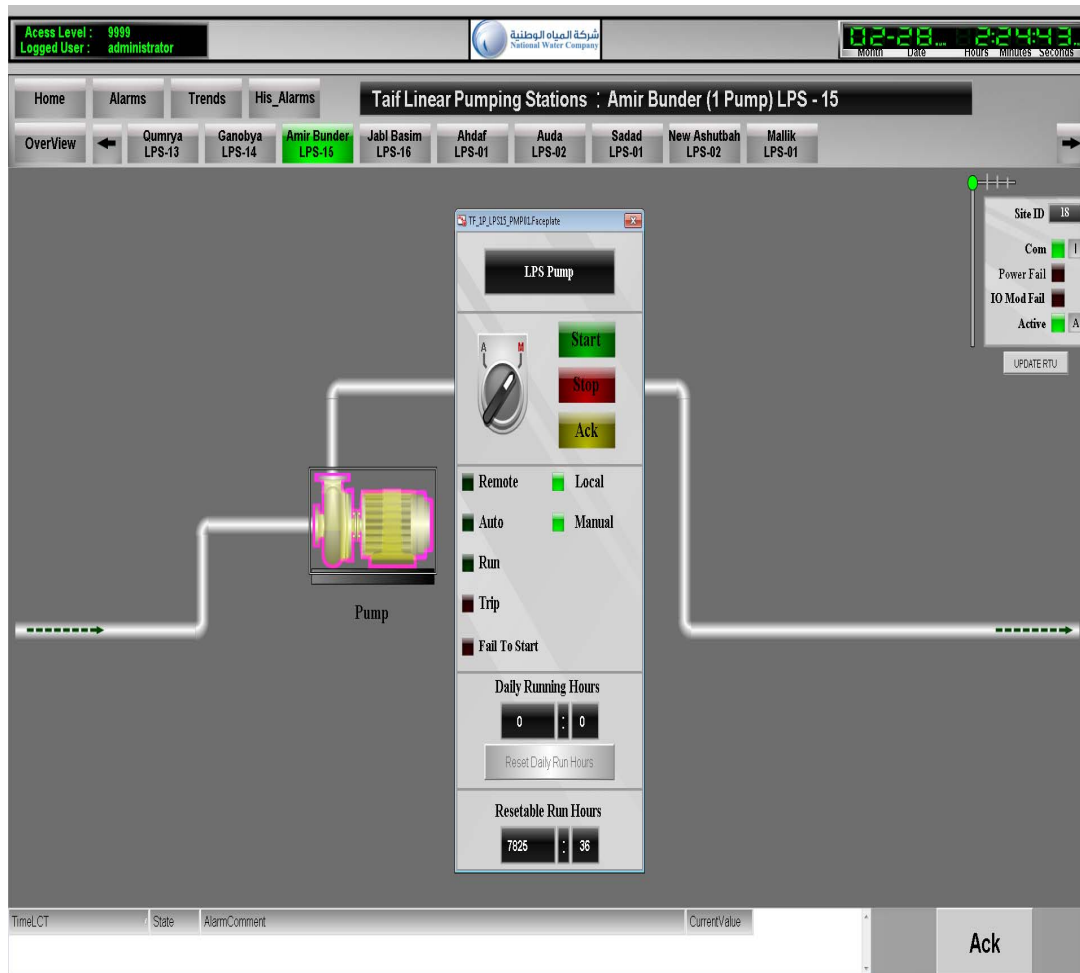
This section includes the following:

- 1 no of Pump

By clicking Ganobyia LPS - 14 button from header section, user will get the Ganobyia LPS - 14 screen .Here users can see the status of communication between RTU and Scada.



■ Amir Bunder LPS - 15



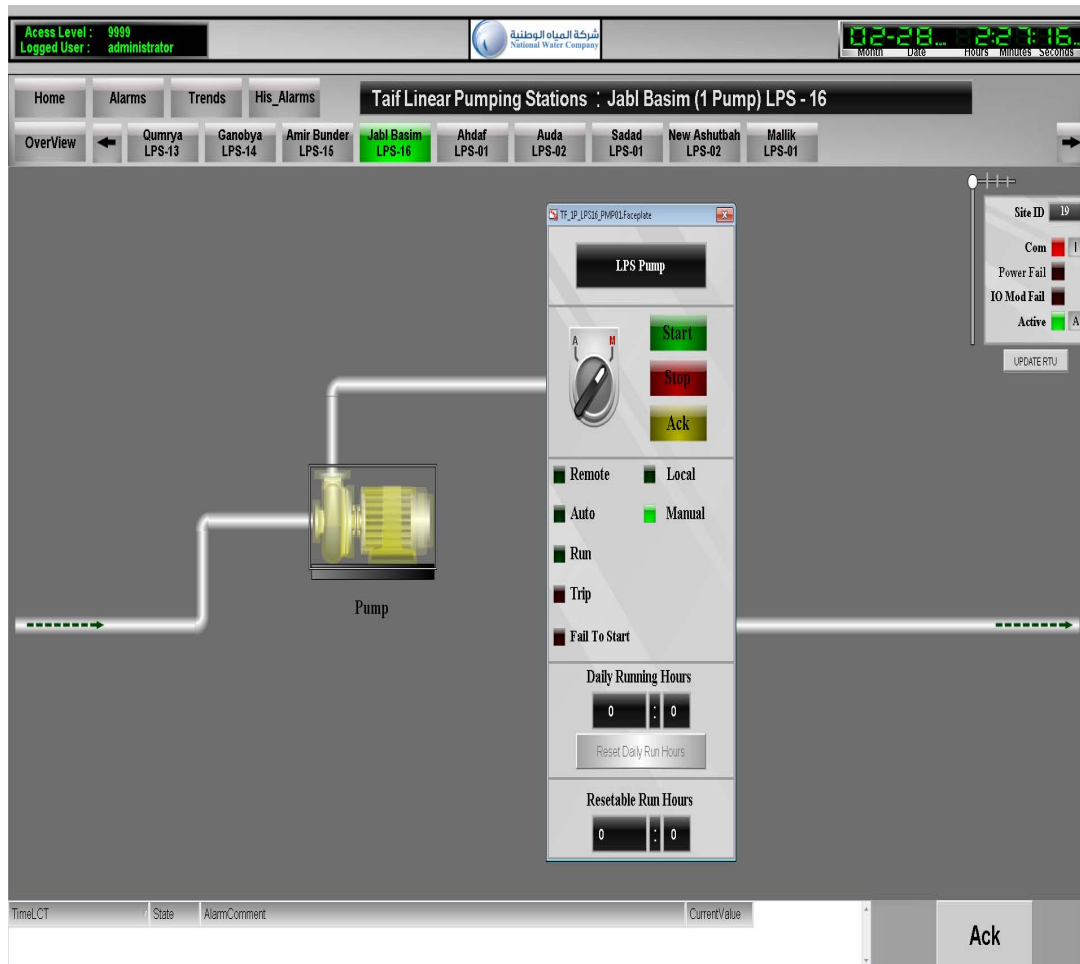
This section includes the following:

- 1 no of Pump

By clicking Amir Bunder LPS - 15 button from header section, user will get the Amir Bunder LPS - 15 screen .Here users can see the status of communication between RTU and Scada.



▪ Jabl basim LPS - 16



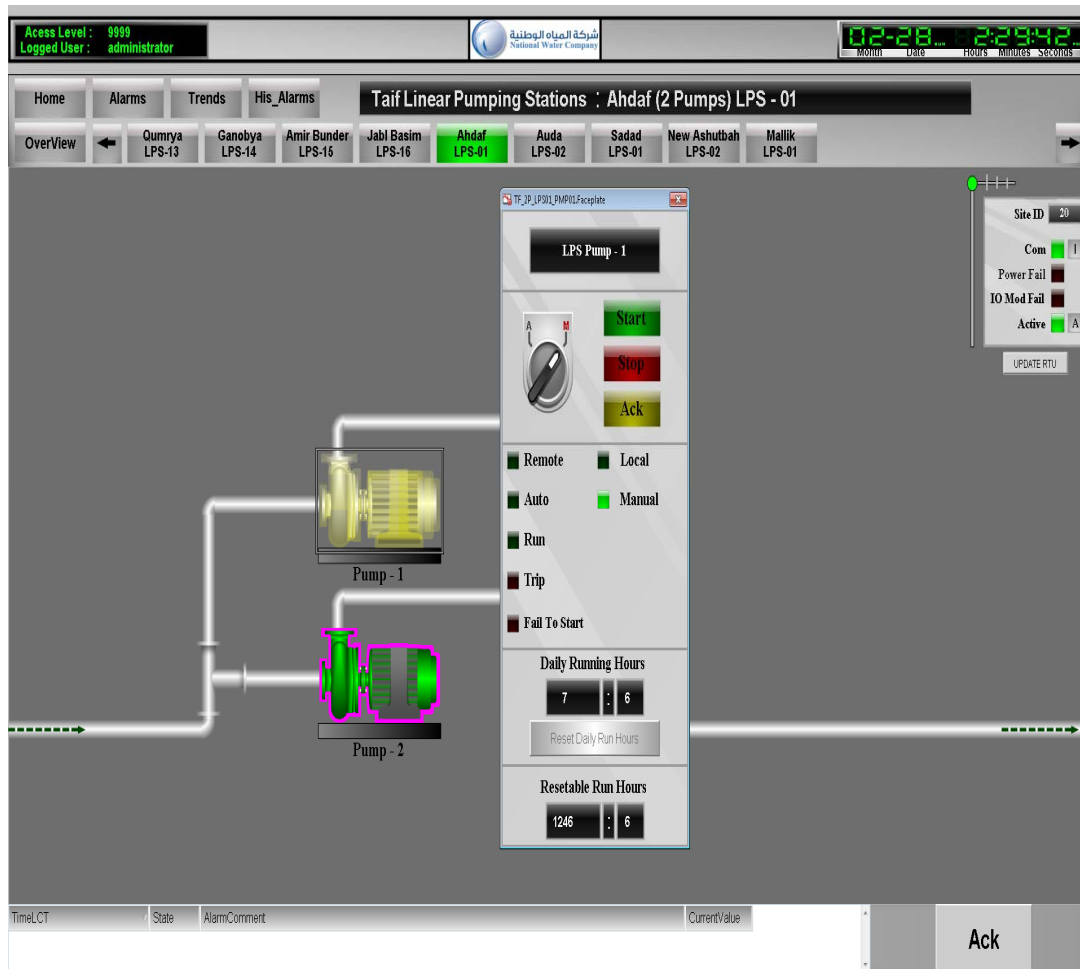
This section includes the following:

- 1 no of Pump

By clicking Jabl Basim LPS - 15 button from header section, user will get the Jabl Basim LPS - 15 screen .Here user can see the status of communication between RTU and Scada.



■ Ahdaf LPS - 01



This section includes the following:

- 2 no of Pump

By clicking Ahdaf LPS - 01 button from header section, user will get the Ahdaf LPS - 01 screen. Here user can see the status of communication between RTU and Scada.



▪ Auda LPS - 02

Access Level: 500
Logged User: mwc

06-23 13:11

Home Alarms Trends His Alarms

Taif Linear Pumping Stations : Auda (2 Pumps) LPS - 02

Overview ← Qumrya LPS-13 Ganobyia LPS-14 Amir Bunder LPS-15 Jabl Basim LPS-16 Ahdaf LPS-01 Auda LPS-02

LPS Pump - 2

Start Stop Ack

Remote Local
Auto Manual
Run
Trip
Fail To Start

Daily Running Hours
5 : 14
Reset Daily Run Hours

Resetable Run Hours
228 : 15

Site ID 21
Com
Power Fail
IO Mod Fail
Active
UPDATE RTU

Pump - 1
Pump - 2

TimeLCT	State	Name	AlarmComment
23-06-2016 01:26:31.732 PM	UNACK	V5061 FAULT	The UserDefined object provides a starting point for creating custom built objec... true

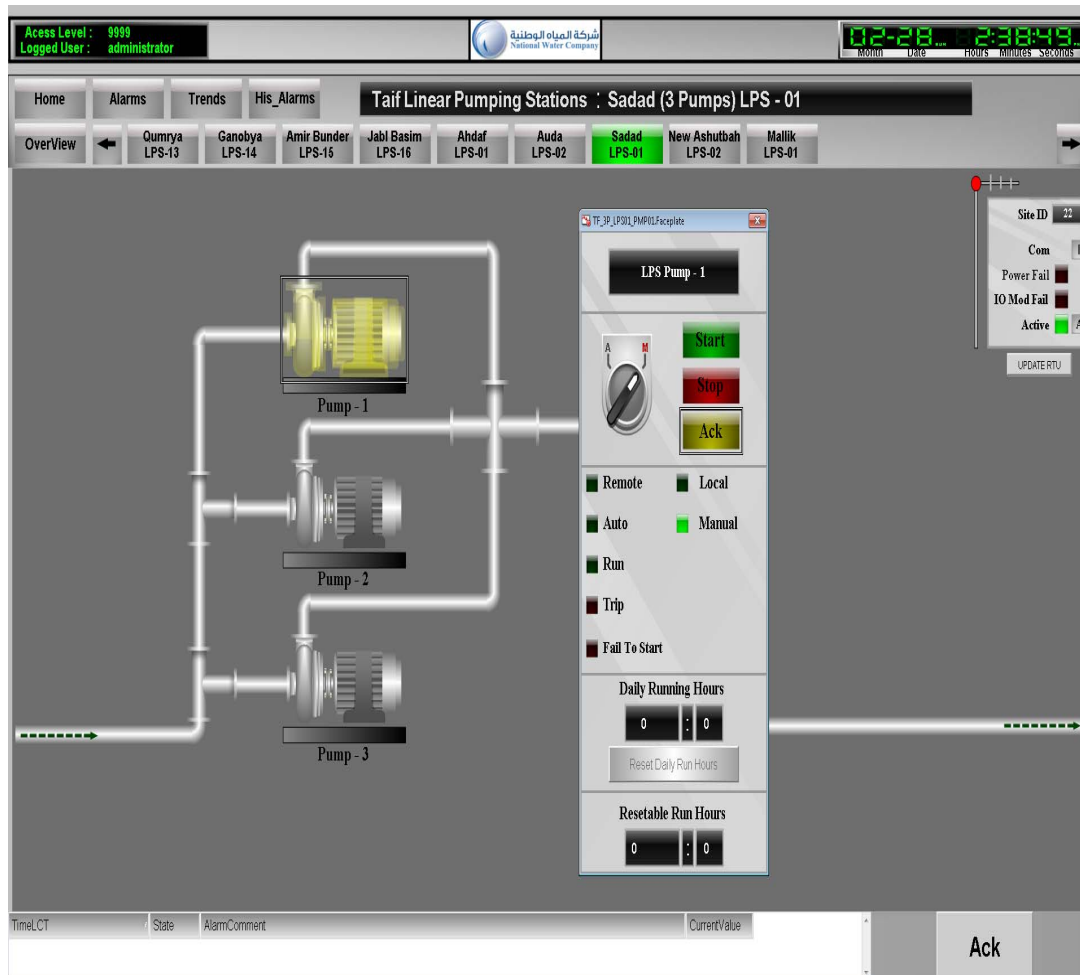
Ack

This section includes the following:

- 2 no of Pump

By clicking Auda LPS - 02 button from header section, user will get the Auda LPS - 02 screen .Here user can see the status of communication between RTU and Scada.

▪ Sadad LPS - 01



This section includes the following:

- 3 no of Pump

By clicking Sadad LPS - 01 button from header section, user will get the Sadad LPS - 01 screen .Here user can see the status of communication between RTU and Scada.



■ New Ashutbah LPS - 02

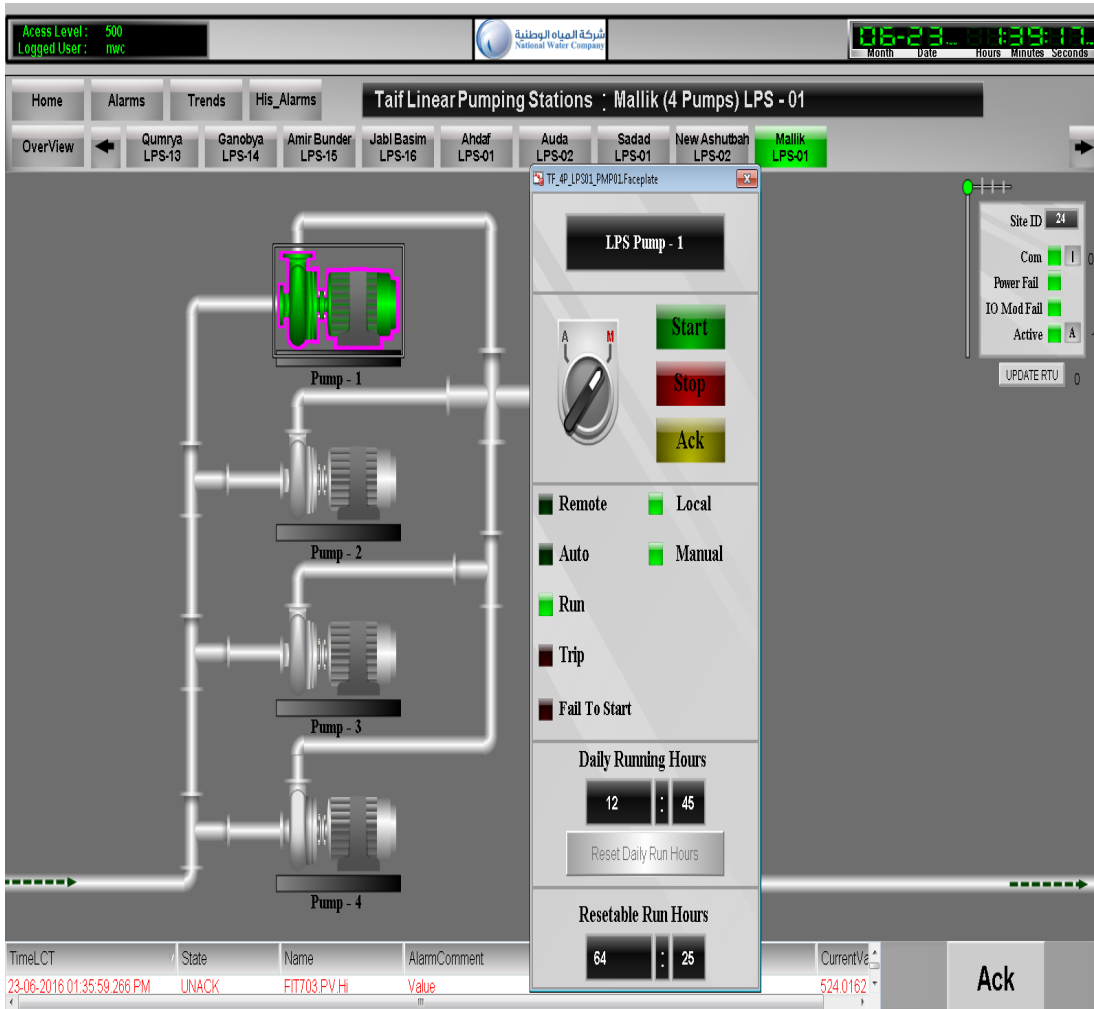
TimeLCT	State	Name	AlarmComment
23-06-2016 01:30:59.515 PM	UNACK	A16	conductivity Val...

This section includes the following:

- 3 no of Pump

By clicking New Ashutbah LPS - 02 button from header section, user will get the New Ashutbah LPS - 02 screen .Here user can see the status of communication between RTU and Scada.

■ Mallik LPS - 01



Access Level: 500
Logged User: mwc

06-23-2016 13:17

Home Alarms Trends His_Alarms

Taif Linear Pumping Stations : Mallik (4 Pumps) LPS - 01

Overview ← Qumrya LPS-13 Ganobya LPS-14 Amir Bunder LPS-15 Jabl Basim LPS-16 Ahdaf LPS-01 Auda LPS-02 Sadad LPS-01 New Ashutbah LPS-02 Mallik LPS-01 →

Pump - 1

Pump - 2

Pump - 3

Pump - 4

LPS Pump - 1

A M

Start

Stop

Ack

Remote Local

Auto Manual

Run

Trip

Fail To Start

Daily Running Hours

12 : 45

Reset Daily Run Hours

Resettable Run Hours

64 : 25

TimeLCT State Name AlarmComment

23-06-2016 01:35:59.266 PM UNACK FIT703.PV.Hi Value

CurrentVa 524.0162

Ack

This section includes the following:

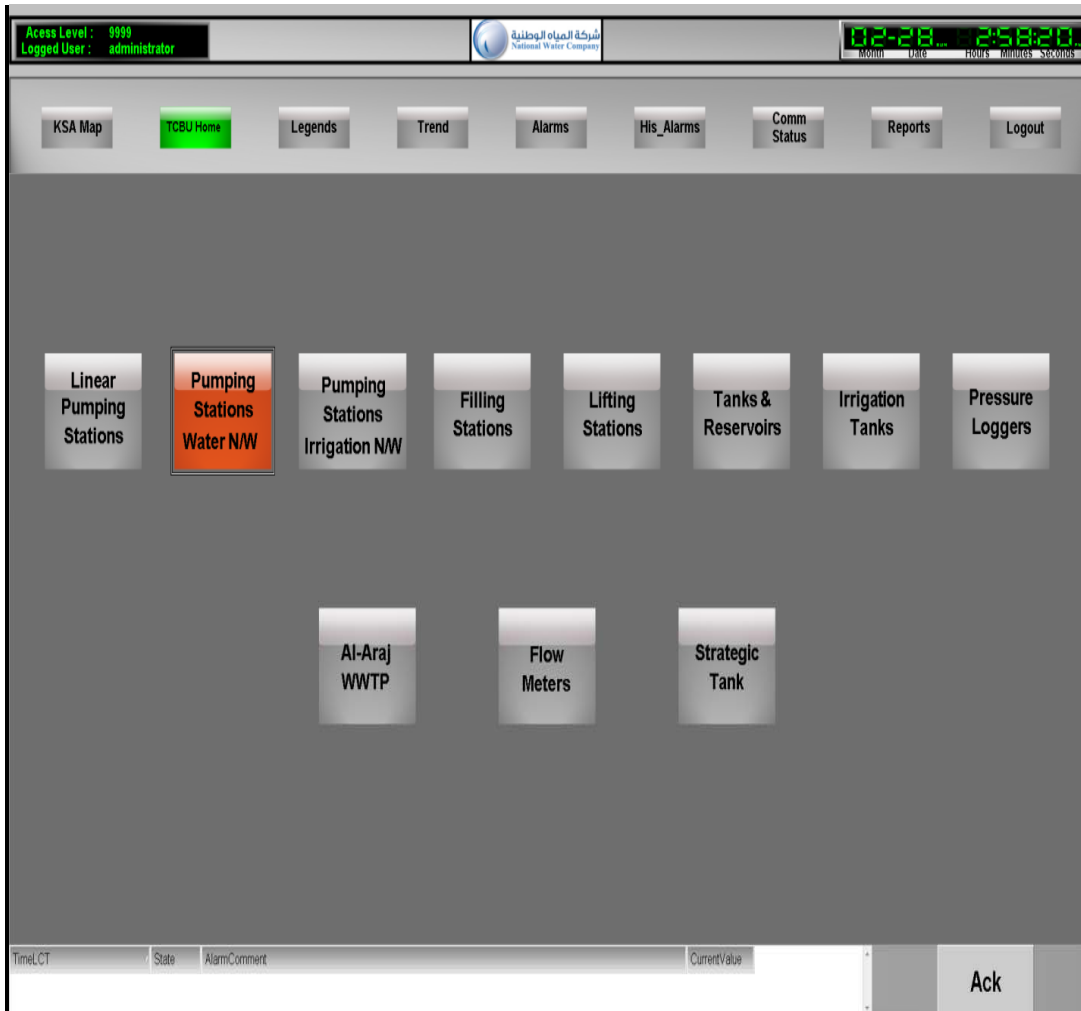
- 4 no of Pump

By clicking Mallik LPS - 01 button from header section, user will get the Mallik LPS - 01 screen .Here user can see the status of communication between RTU and Scada.



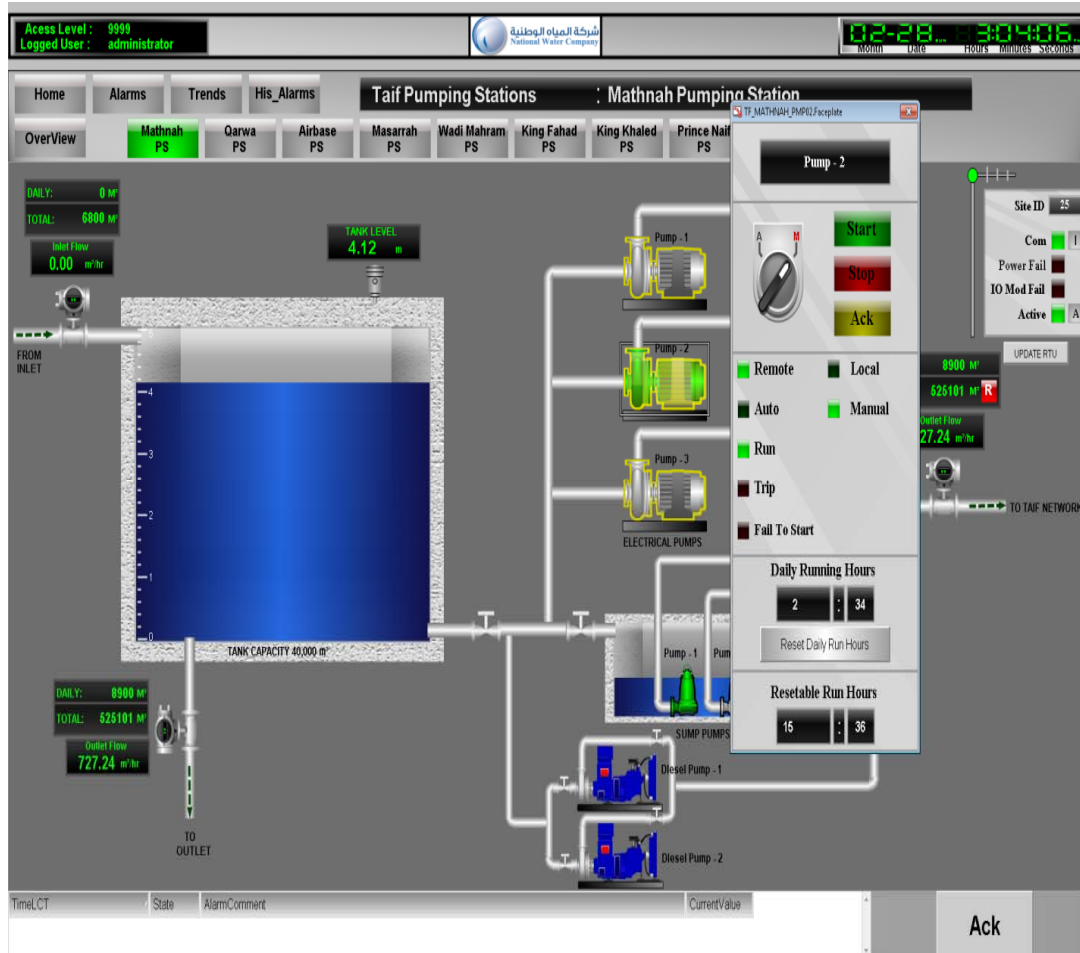
2) Pumping Station Water N/W

After the clicking the Pump stations Water N/W section button user will get the map. Any site can be selected by clicking on it.



■ Mathnah Pumping Station

By clicking Mathnah pumping station from Map section, user will get Mathnah pumping station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 3 no's of Flow meters, 1 no of Level Transmitter.
- 3 no's of Pumps.
- 2 no's of Submersible Pumps.
- 2 no's of Diesel Pumps.

Here user can monitor the all analog instruments such as flow meters, Pumps. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command from its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop



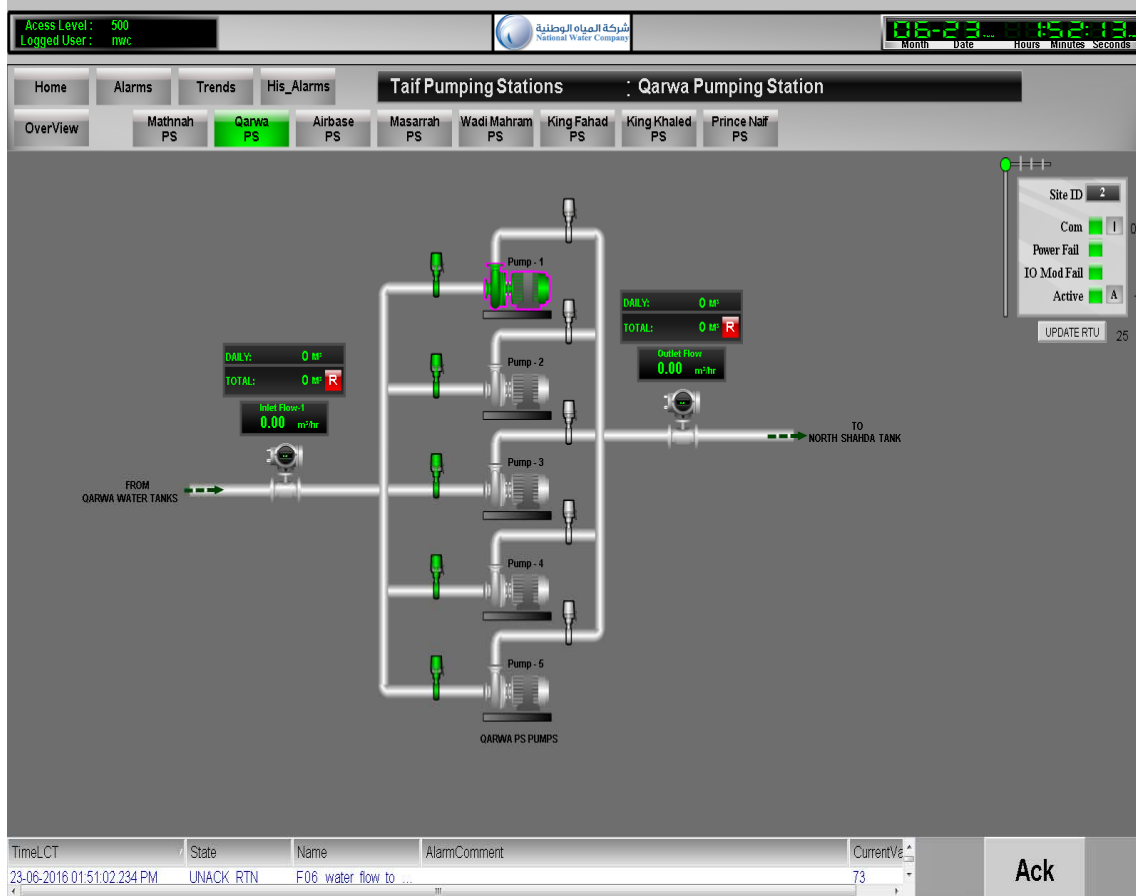
buttons. Led indicate that the status of all signal related pump and display box showing the values of pump speed, running hours and all.





■ Qarwa PS Pumping Station

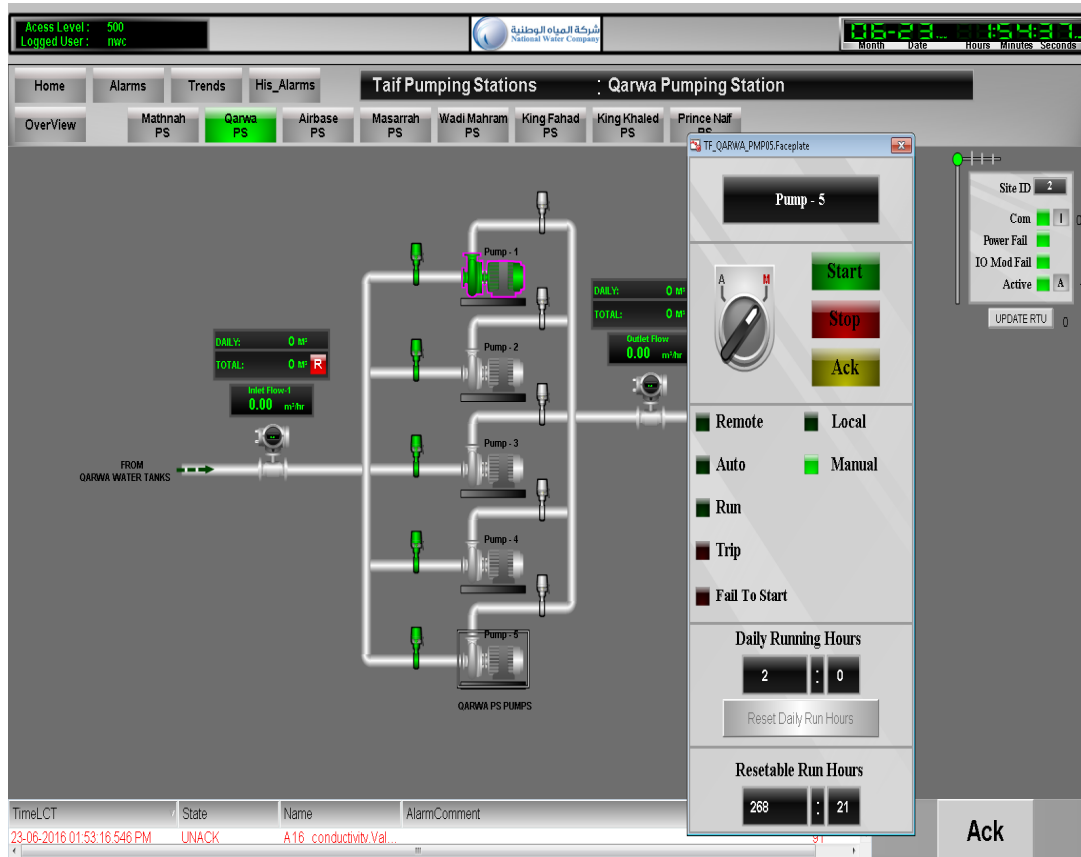
By clicking Qarwa pumping station from Map section, user will get Qarwa pumping station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 2 no's of Flow meters
- 5 no's of Pumps.
- 10 no's of Valves.

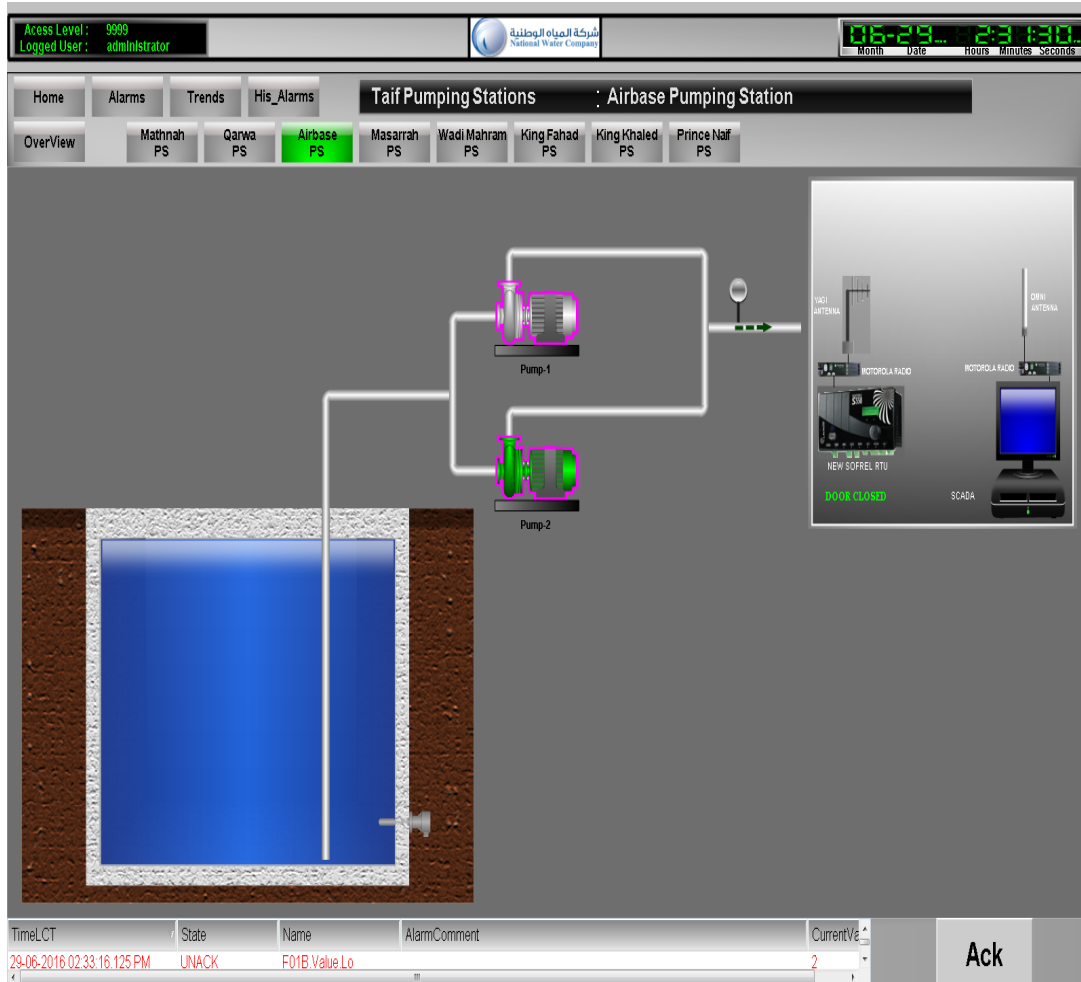
Here user can monitor the all analog instruments such as flow meters, Pumps. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump and display box showing the values of pump speed, running hours and all.





■ Airbase PS Pumping Station

By clicking Airbase pumping station from Map section, user will get Airbase pumping station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 1 no's of Level switch
- 2 no's of Pumps.

Here user can monitor the all analog instruments such as Pumps. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump and display box showing the values of pump speed, running hours and all.



Access Level : 9999
Logged User : administrator

شركة المياه الوطنية
National Water Company

06-29... 2:32:49
Month Date Hours Minutes Seconds

Home Alarms Trends His_Alarms Taif Pumping Stations Airbase Pumping Station

Overview Mathnah PS Qanwa PS **Airbase PS** Masarrah PS Wadi Mahram PS King Fahad PS

Pump - 2

Start Stop Ack

Remote Local
Auto Manual
Run
Trip
Fail To Start

Daily Running Hours
5 : 14
Reset Daily Run Hours

Resetable Run Hours
5 : 14

Pump-1
Pump-2

SCADA

TimeLCT State Name AlarmComment CurrentVa

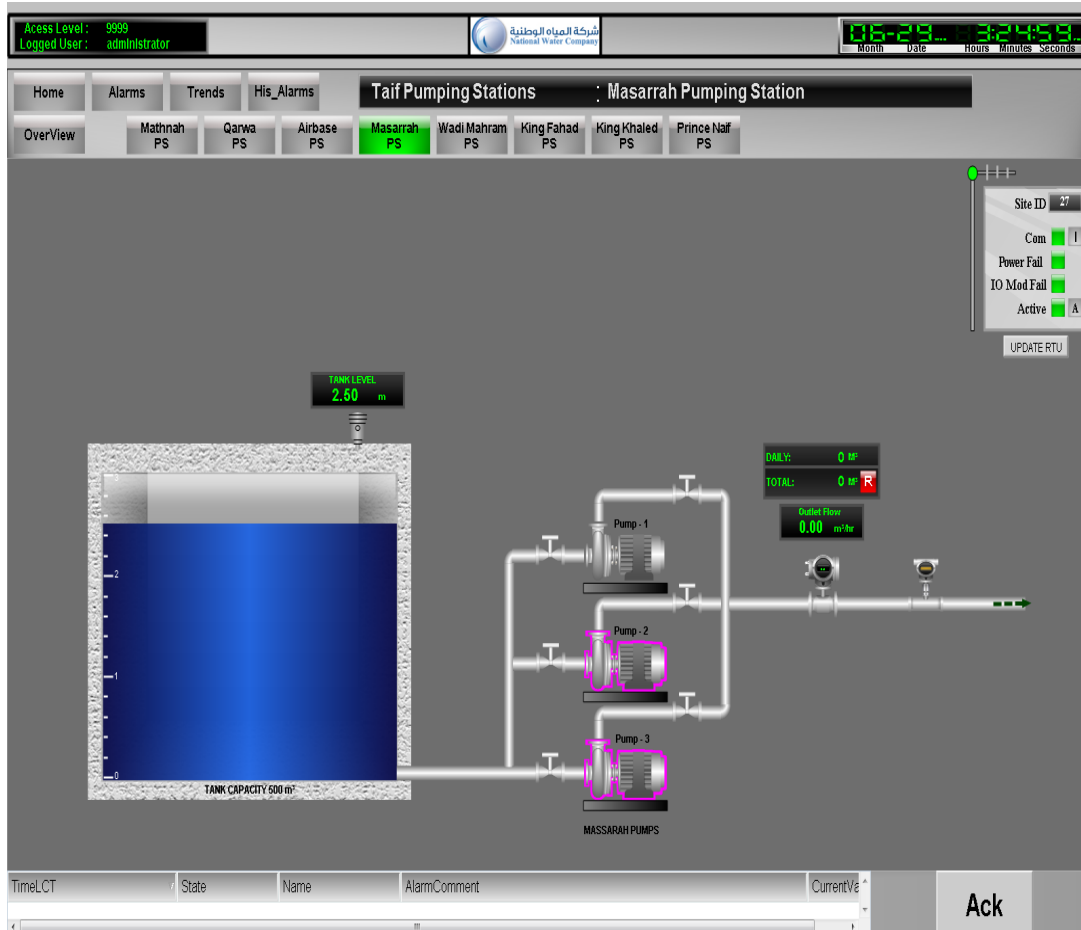
29-06-2016 02:34:32.890 PM UNACK A16 -conductivty Val... 93

Ack



■ Masarrah PS Pumping Station

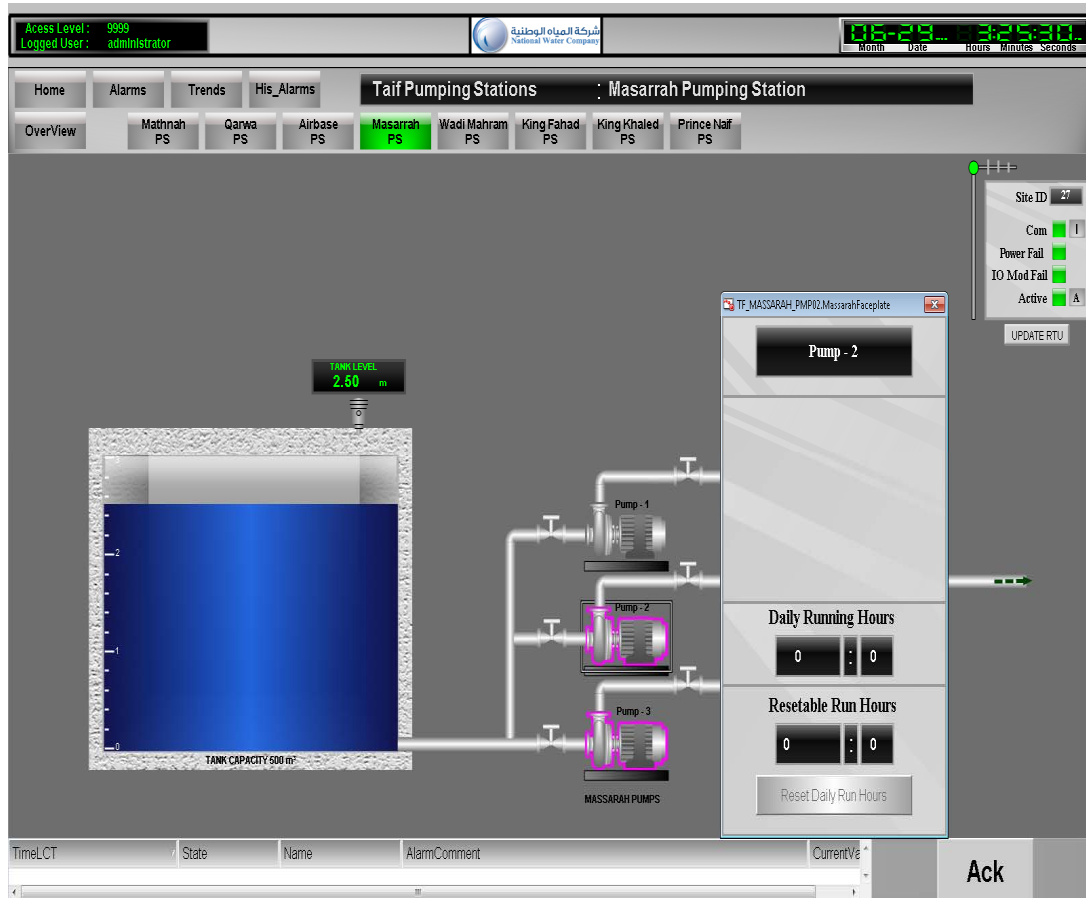
By clicking Masarrah pumping station from Map section, user will get Masarrah pumping station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 1 no's of Level transmitter
- 3 no's of Pumps.
- 1 no's of Flow meter.

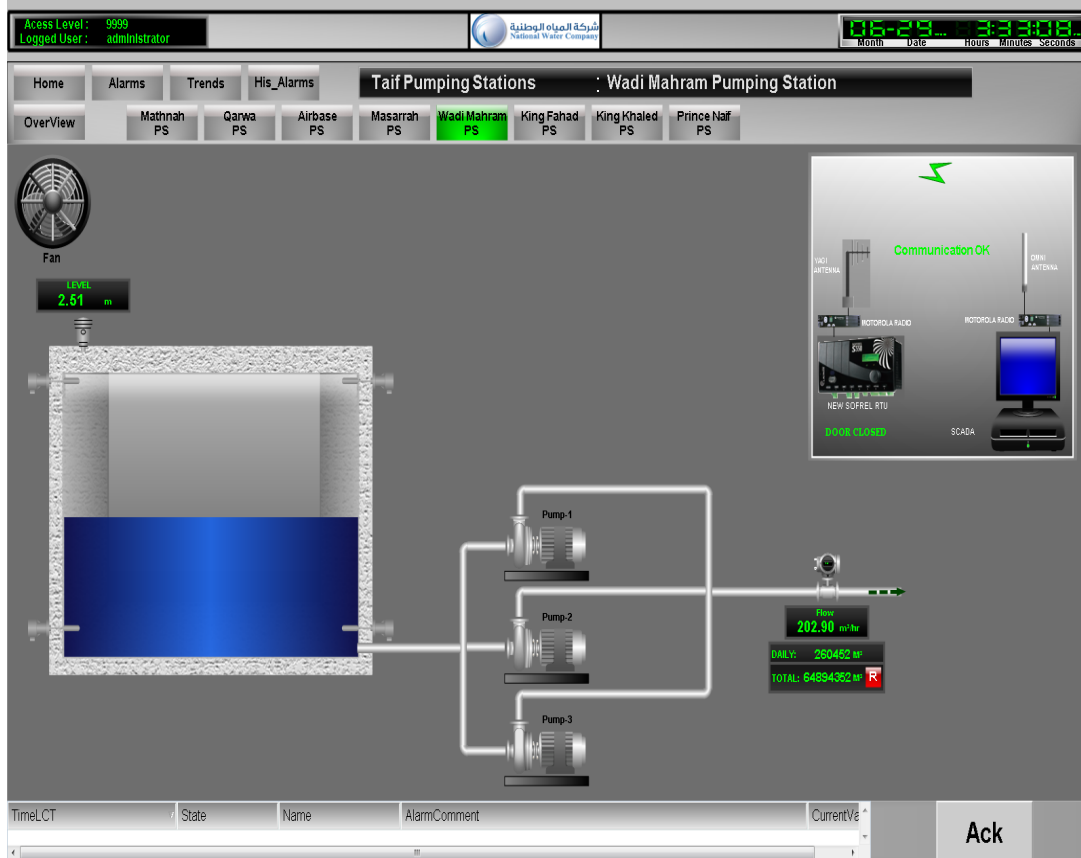
Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump and display box showing the values of pump speed, running hours and all.





■ Wadi Mahram Pumping Station

By clicking Wadi Mahram pumping station from Map section, user will get Wadi Mahram pumping station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 1 no's of Level transmitter
- 3 no's of Pumps.
- 1 no's of Flow meter.
- 3 no's of Pressure transmitters
- 4 no's of Level switches.

Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump and display box showing the values of pump speed, running hours and all.



Access Level: 9999
Logged User: administrator

شركة المياه الوطنية
National Water Company

06-29... 3:35:55
Month Date Hours Minutes Seconds

Home Alarms Trends His_Alarms

Taif Pumping Stations : Wadi Mahram Pumping Station

Overview Mathnah PS Qarwa PS Airbase PS Masarrah PS Wadi Mahram PS King Fahad PS

Fan

LEVEL 2.48 m

Pump - 1

Start Stop Ack

Remote Local

Auto Manual

Run Trip

Fail To Start

Daily Running Hours

12 : 9

Reset Daily Run Hours

Resetable Run Hours

31 : 9

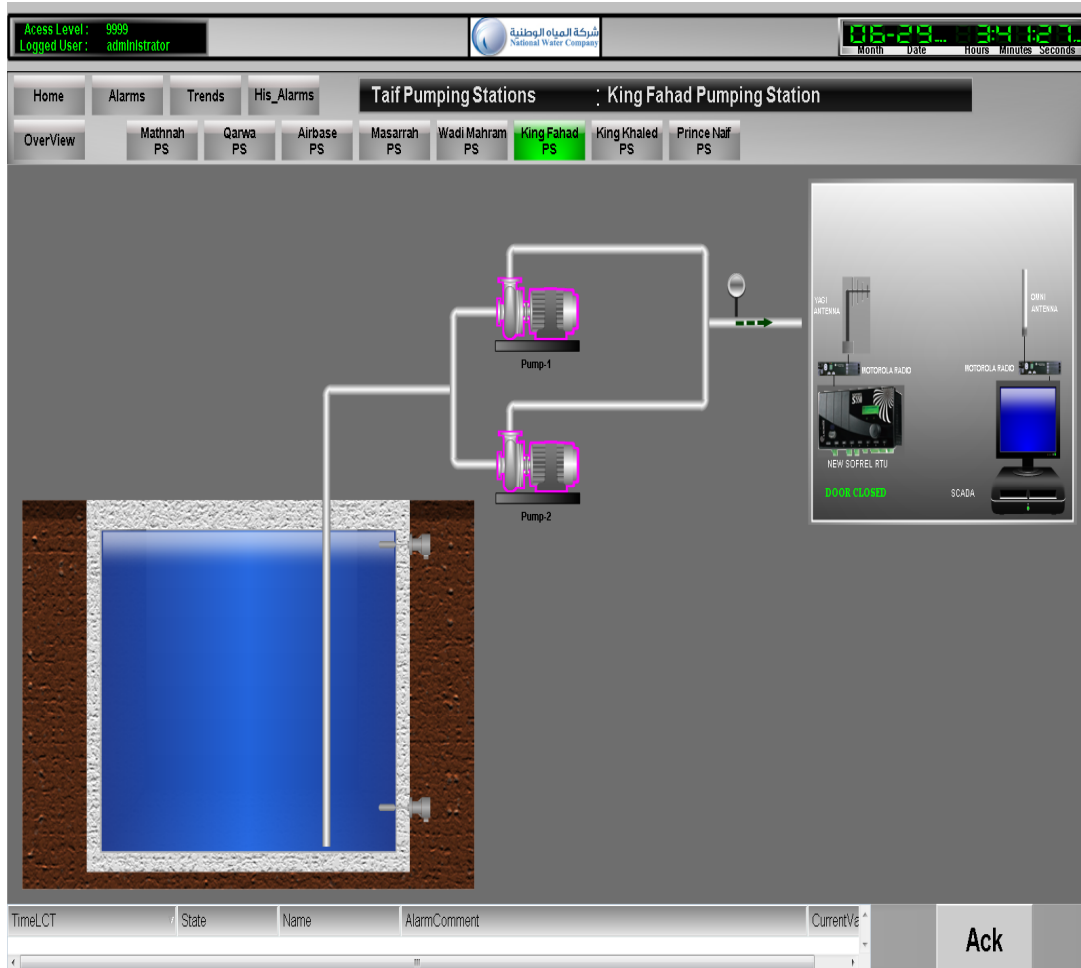
TimeLCT State Name AlarmComment CurrentVe

Ack



■ King Fahad Pumping Station

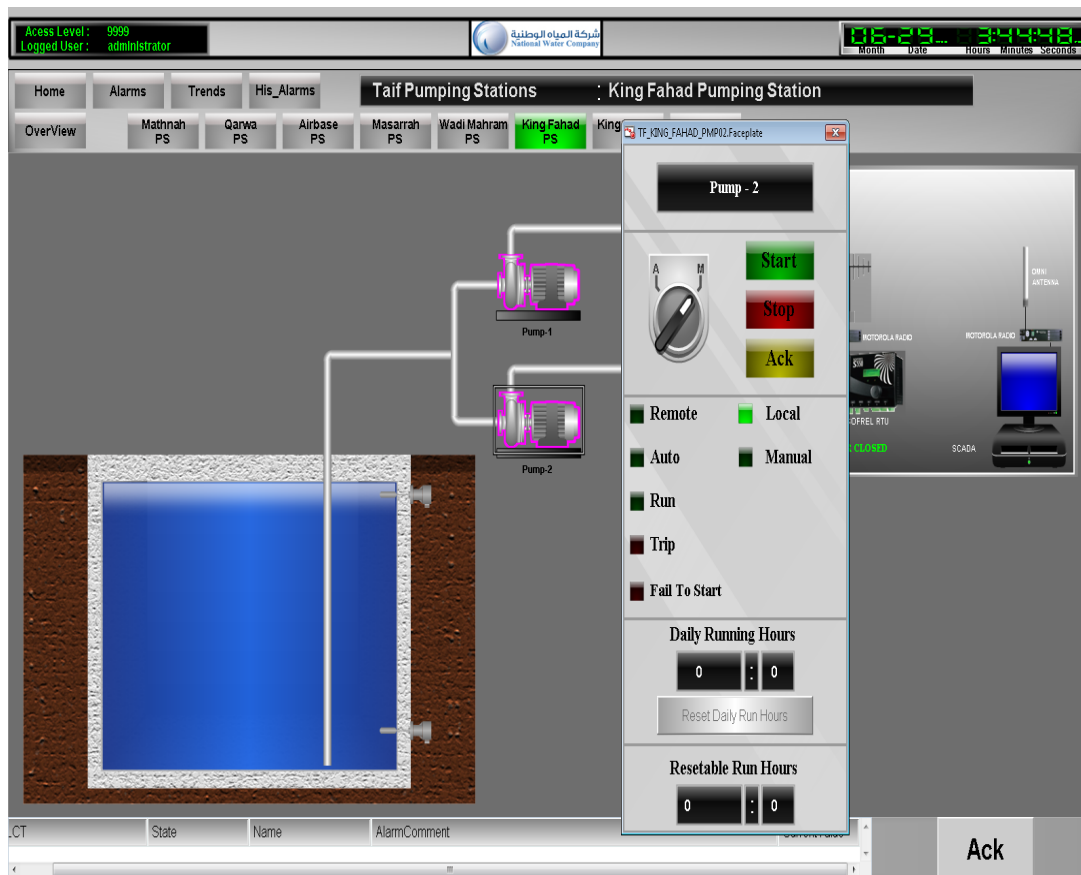
By clicking King fahad pumping station from Map section, user will get King Fahad pumping station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 2 no's of Pumps.
- 2 no's of Pressure transmitters
- 2 no's of Level switches.

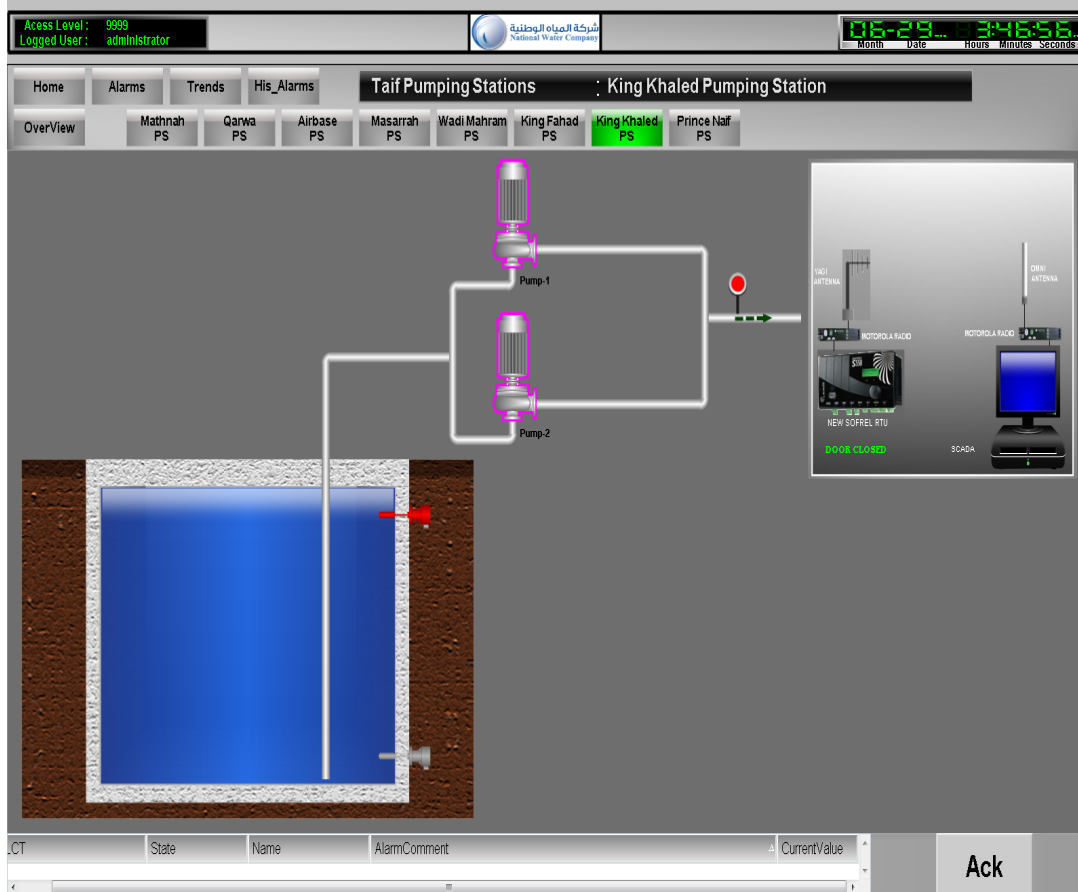
Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump and display box showing the values of pump speed, running hours and all.





■ King Khaled Pumping Station

By clicking King Khaled Pumping station from Map section, user will get King Khaled pumping station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 2 no's of Pumps.
- 2 no's of Pressure transmitters
- 2 no's of Level switches.

Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump and display box showing the values of pump speed, running hours and all.



Access Level: 9999
Logged User: administrator

شركة المياه الوطنية
National Water Company

06-29... 3:49:52
Month Date Hours Minutes Seconds

Home Alarms Trends His_Alarms Taif Pumping Stations King Khaled Pumping Station

Overview Mathnah PS Qarwa PS Airbase PS Masarrah PS Wadi Mahram PS King Fahd PS

Pump - 1

Start Stop Ack

Remote Local
Auto Manual
Run
Trip
Fail To Start

Daily Running Hours
0 : 0
Reset Daily Run Hours

Resetable Run Hours
0 : 0

1501 ANTENNA MOTOROLA RADIO NEW SCOPTEL RTU BONG CLOUDED 1501 ANTENNA MOTOROLA RADIO SCADA

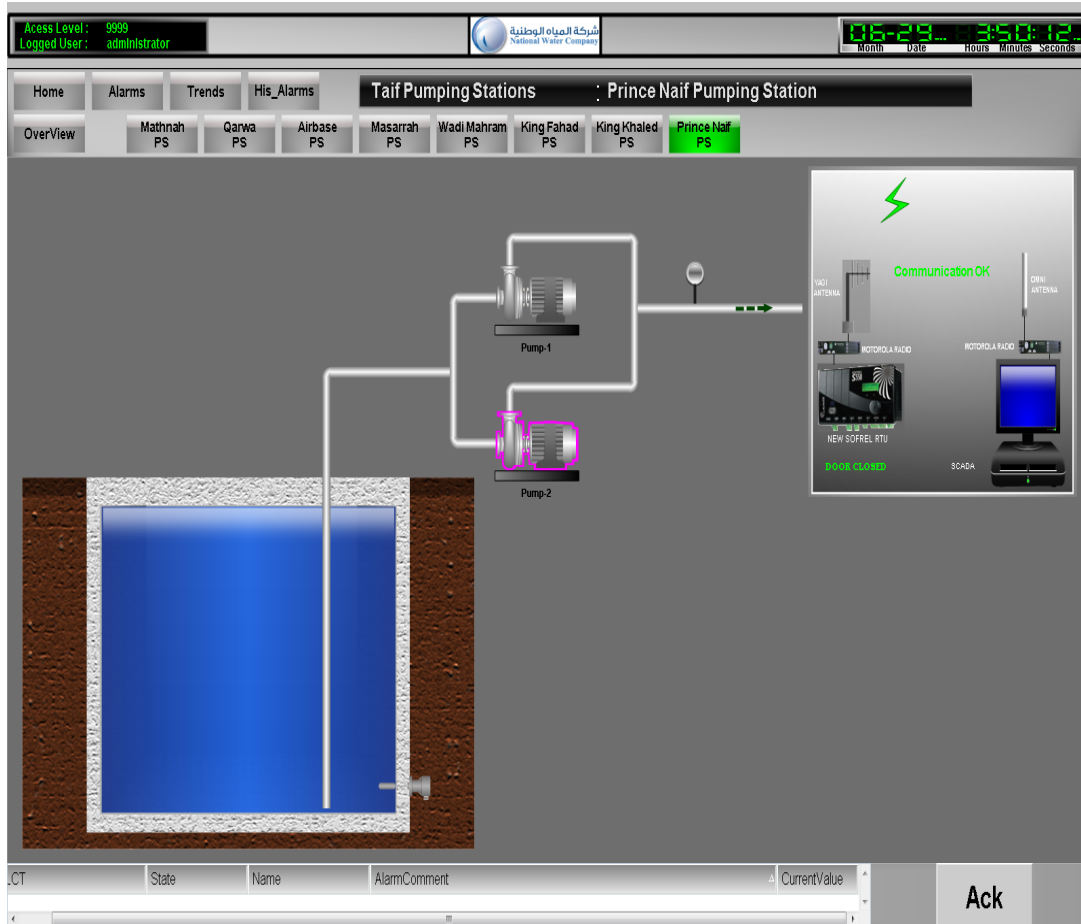
CT State Name AlarmComment Current Value

Ack



■ Prince Naif Pumping Station

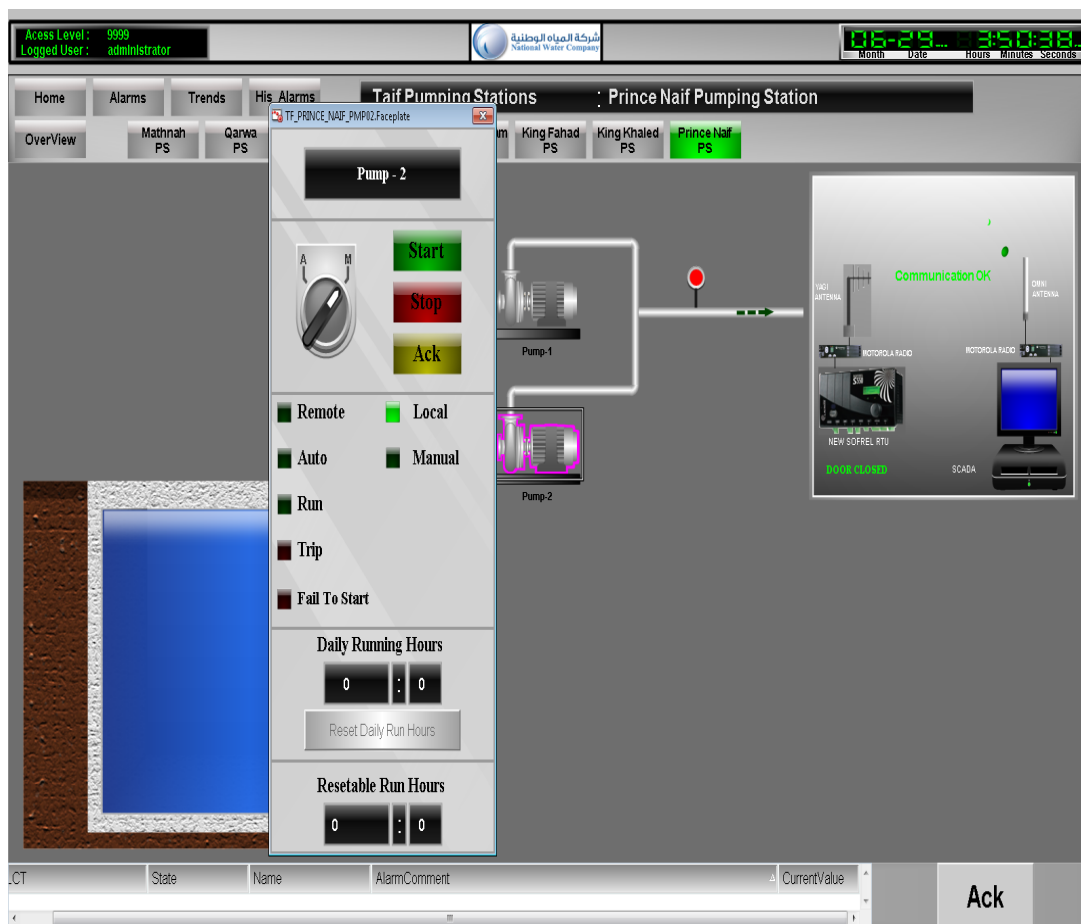
By clicking Prince Naif Pumping station from Map section, user will get Prince Naif pumping station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 2 no's of Pumps.
- 1 no's of Flow meter
- 1 no's of Level switches.

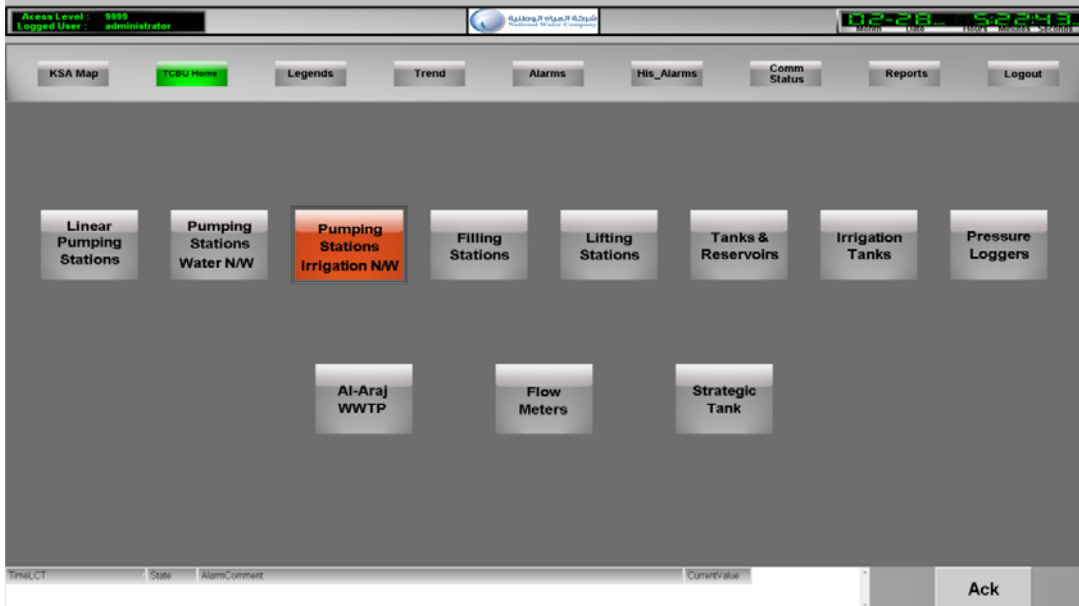
Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump and display box showing the values of pump speed, running hours and all.



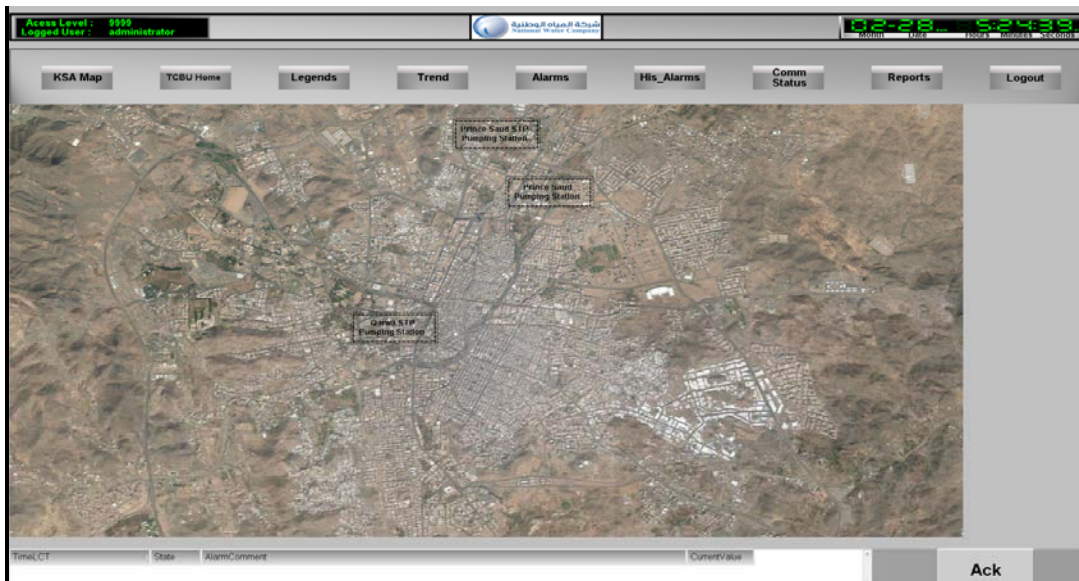


3) Pumping Station Irrigation N/W

After the clicking the Pump stations Irrigation N/W section button user will get the map. Any site can be selected by clicking on it . Green rectangle box indicated that the communication status is good.

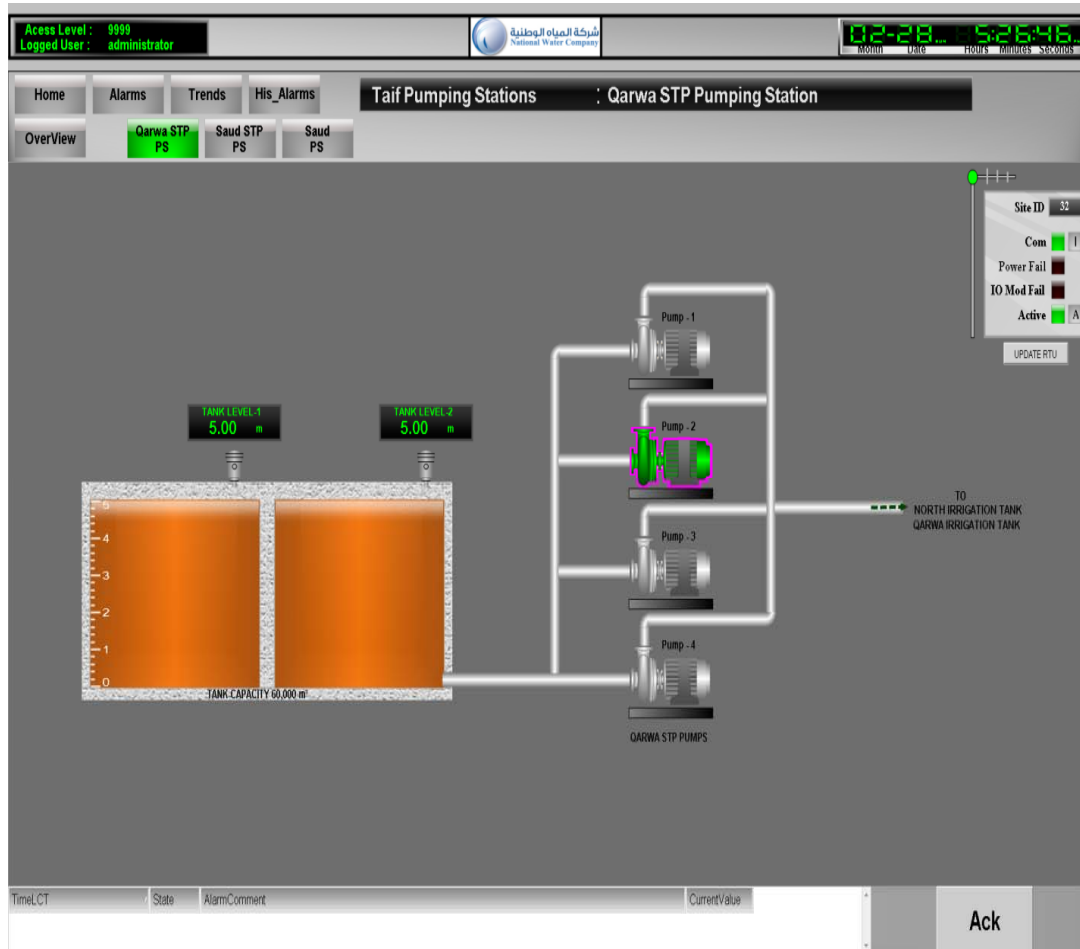


Any Site can be monitored by clicking on the site on the map.



■ Qarwa STP Pumping Station

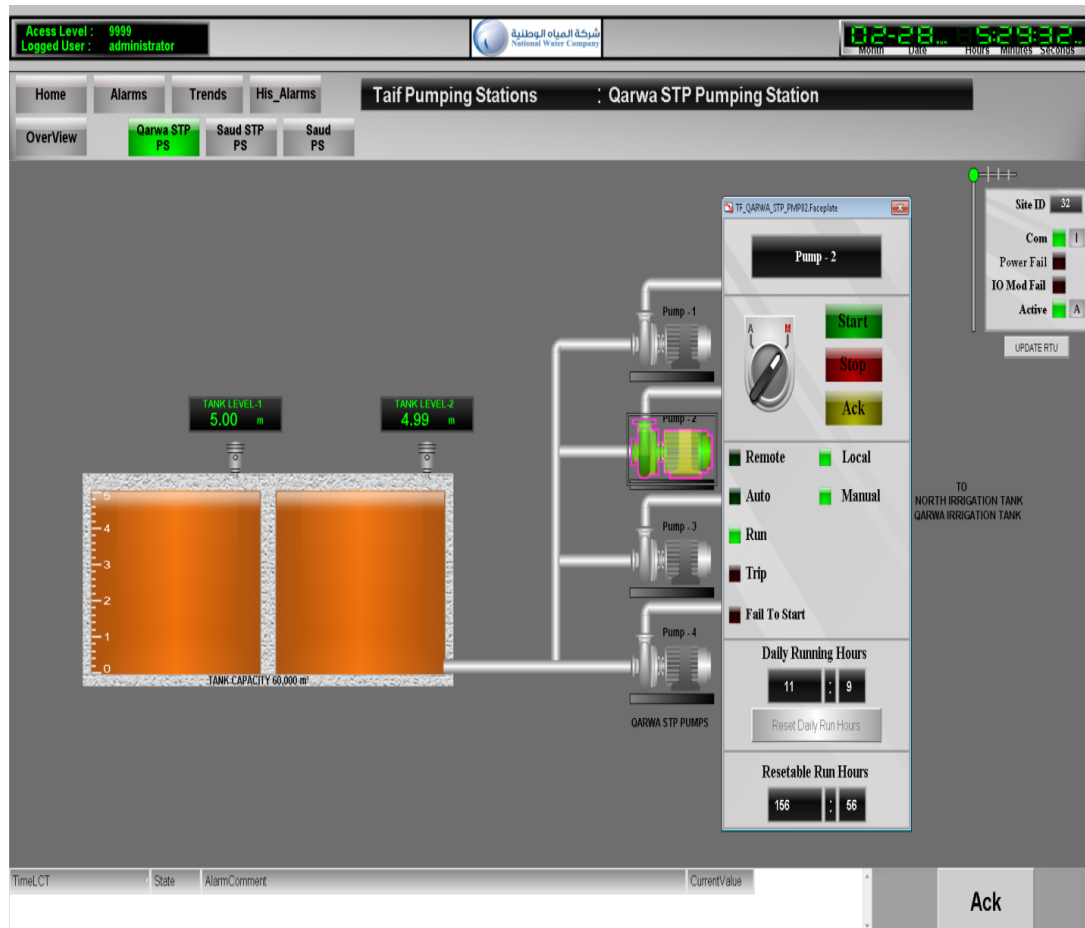
By clicking Qarwa STP Pumping station from Map section, user will get Qarwa STP pumping station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 4 no's of Pumps.
- 2 no's of Level transmitters.

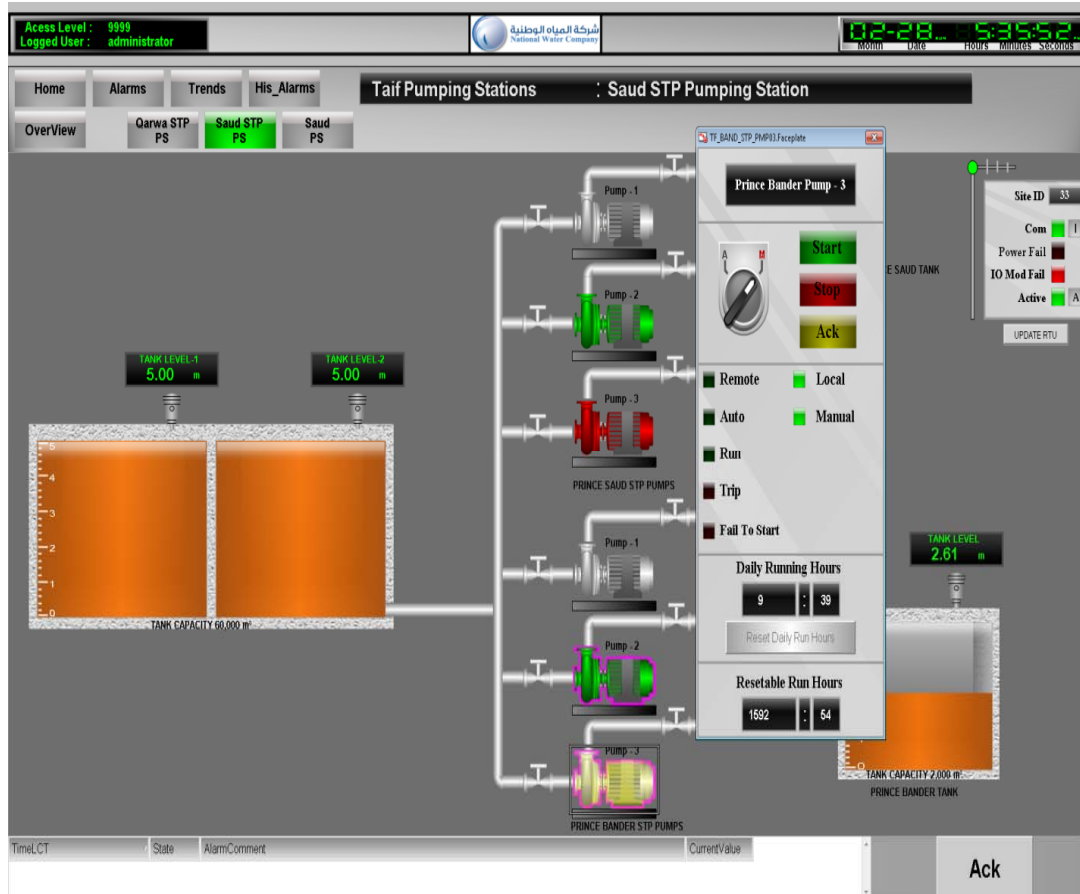
Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump and display box showing the values of pump speed, running hours and all.





■ Saud STP Pumping Station

By clicking Saud STP Pumping station from Map section, user will get Saud STP pumping station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

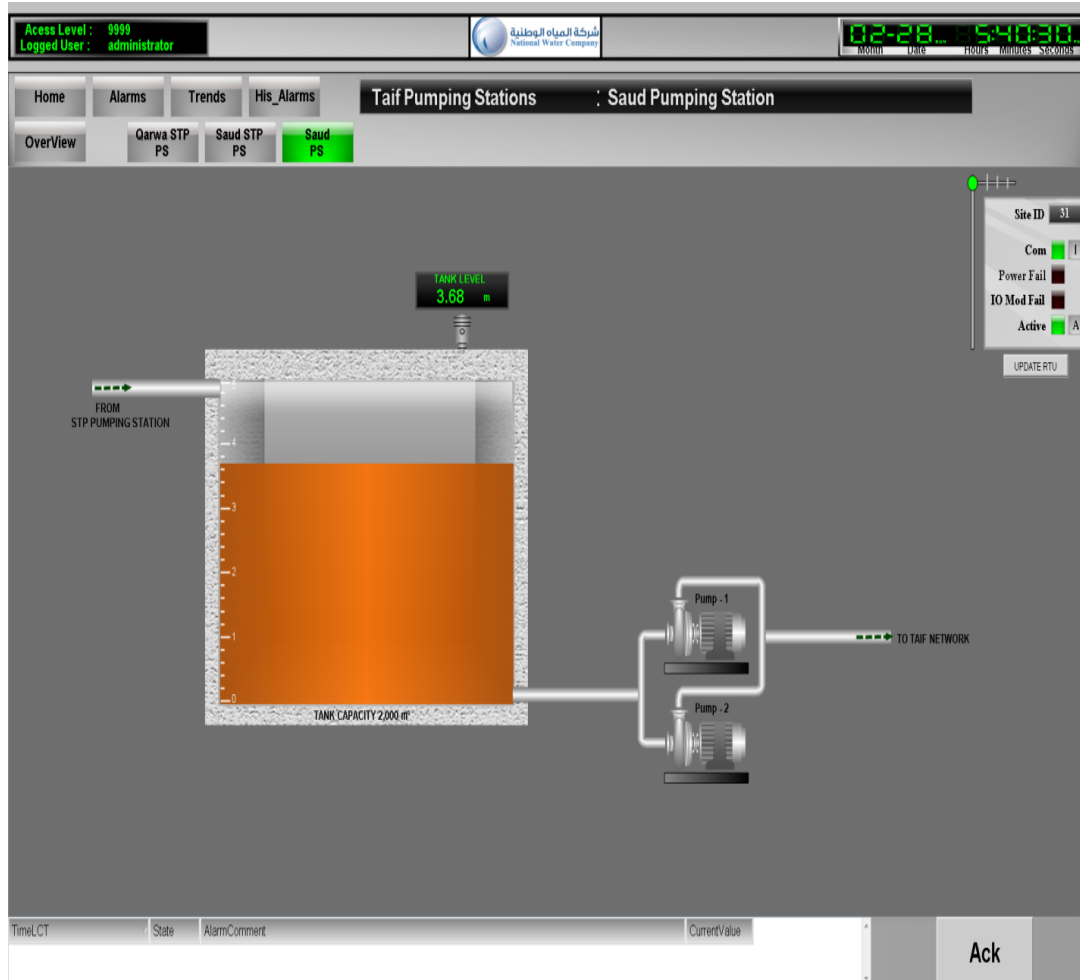
- 6 no's of Pumps.
- 3 no's of Level transmitters.

Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump and display box showing the values of pump speed, running hours and all.



▪ Saud PS

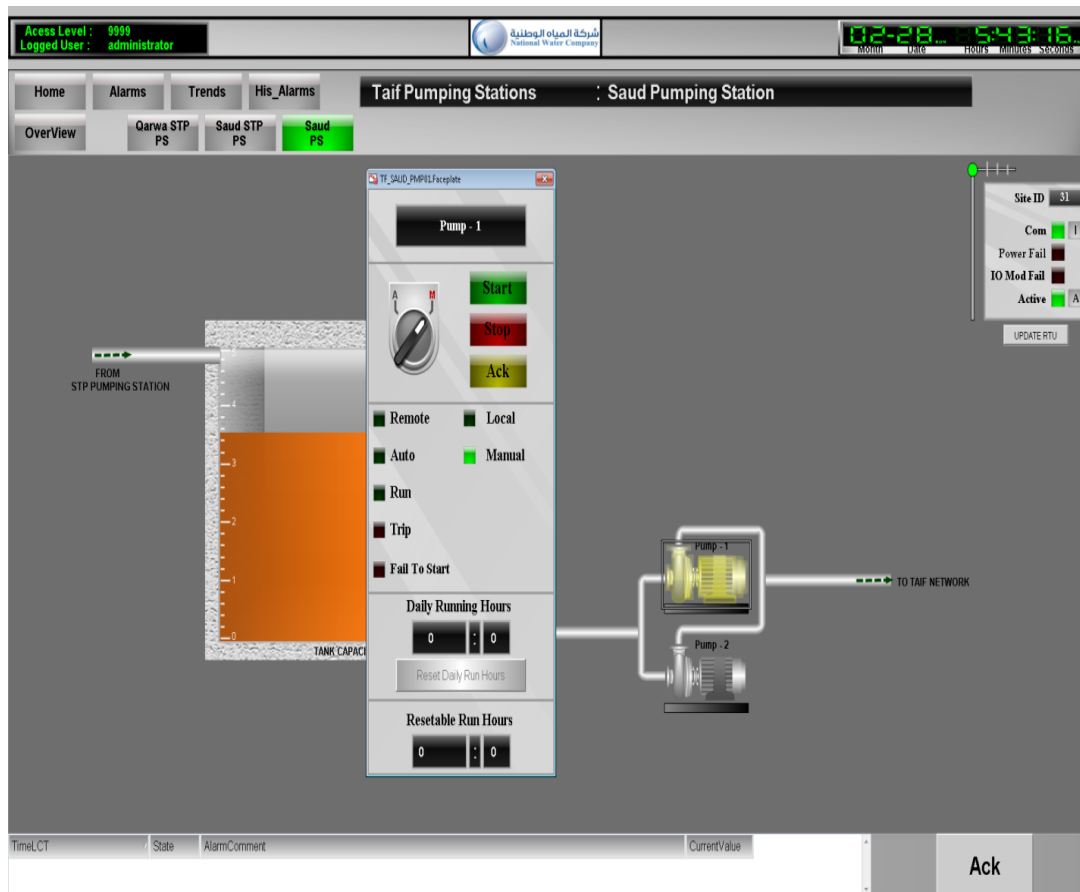
By clicking Saud Pumping station from Map section, user will get Saud pumping station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 2 no's of Pumps.
- 1 no's of Level transmitters.

Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump and display box showing the values of pump speed, running hours and all.



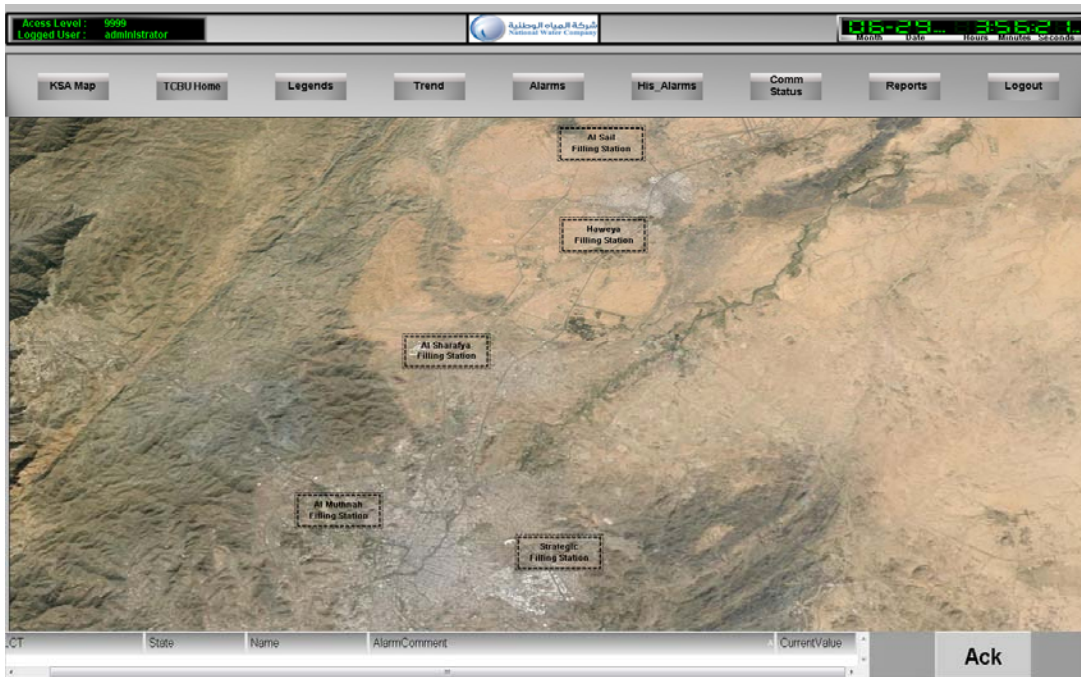


4) Filling Stations

After the clicking the Filling Stations section button user will get the map. Any site can be selected by clicking on it. Green rectangle box indicated that the communication status is good.



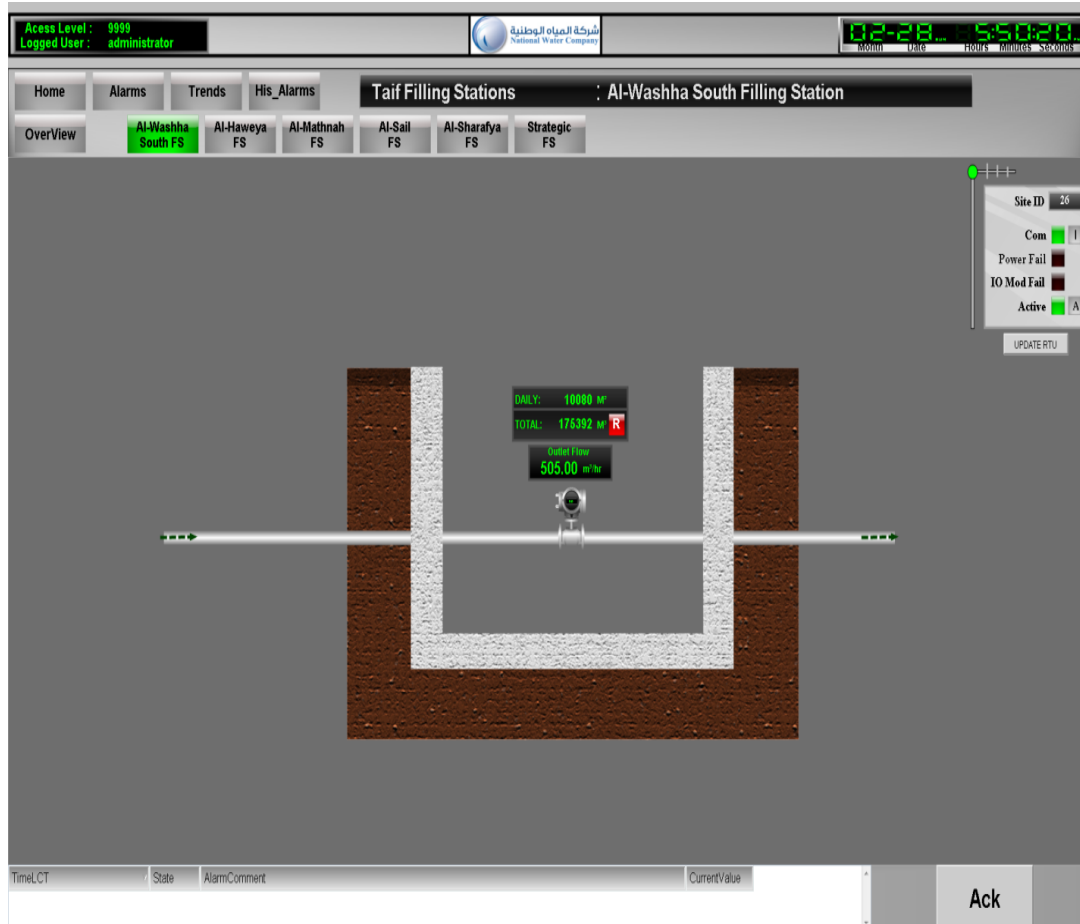
Any Site can be monitored by clicking on the site on the map.





■ Al Washha Filling Station

By clicking Al Washha Filling Station from Map section, user will get Al Washha Filling Station section. Here user only for monitoring and control the all instrument values.



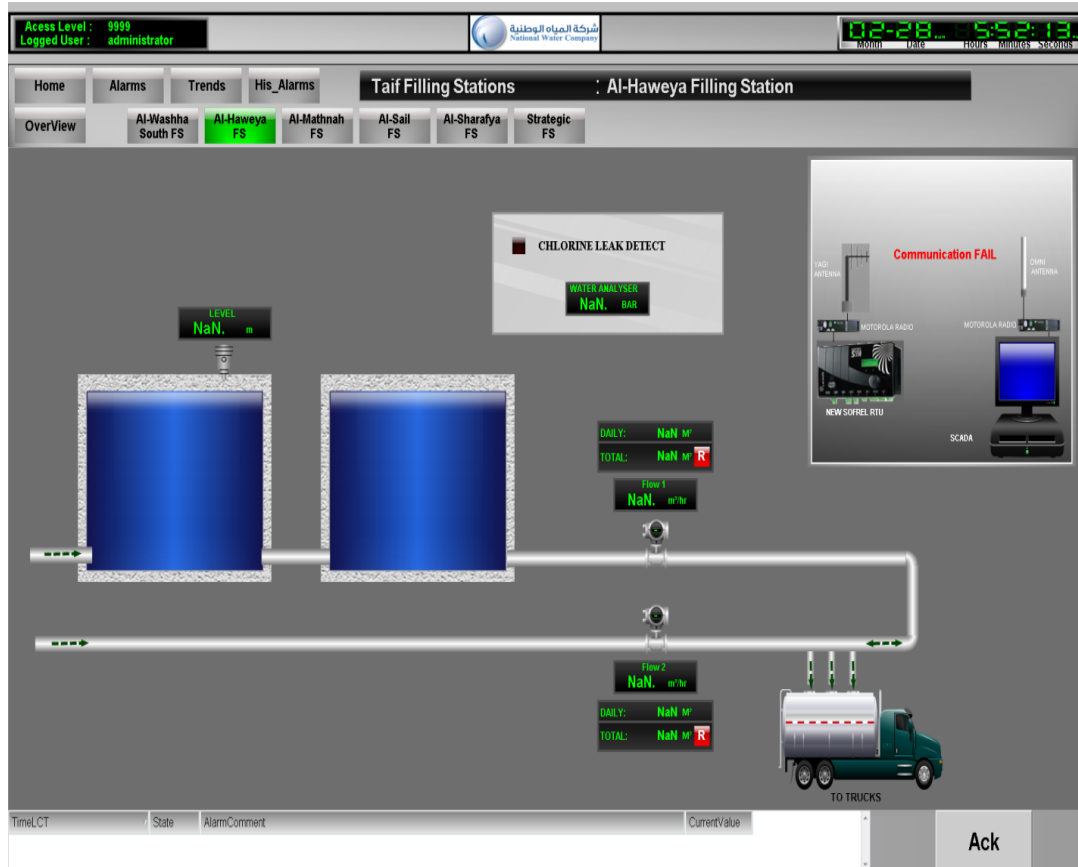
This section includes the following:

- 1 no's of Flow meter.

Here user can monitor the analog instruments such as flow meter. Which showing flow rate, Daily flow value and totalizer valve. Also you can check the RTU status.

■ Al Haweya Filling Station

By clicking Al Haweya Filling Station from Map section, user will get Al haweya Filling Station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

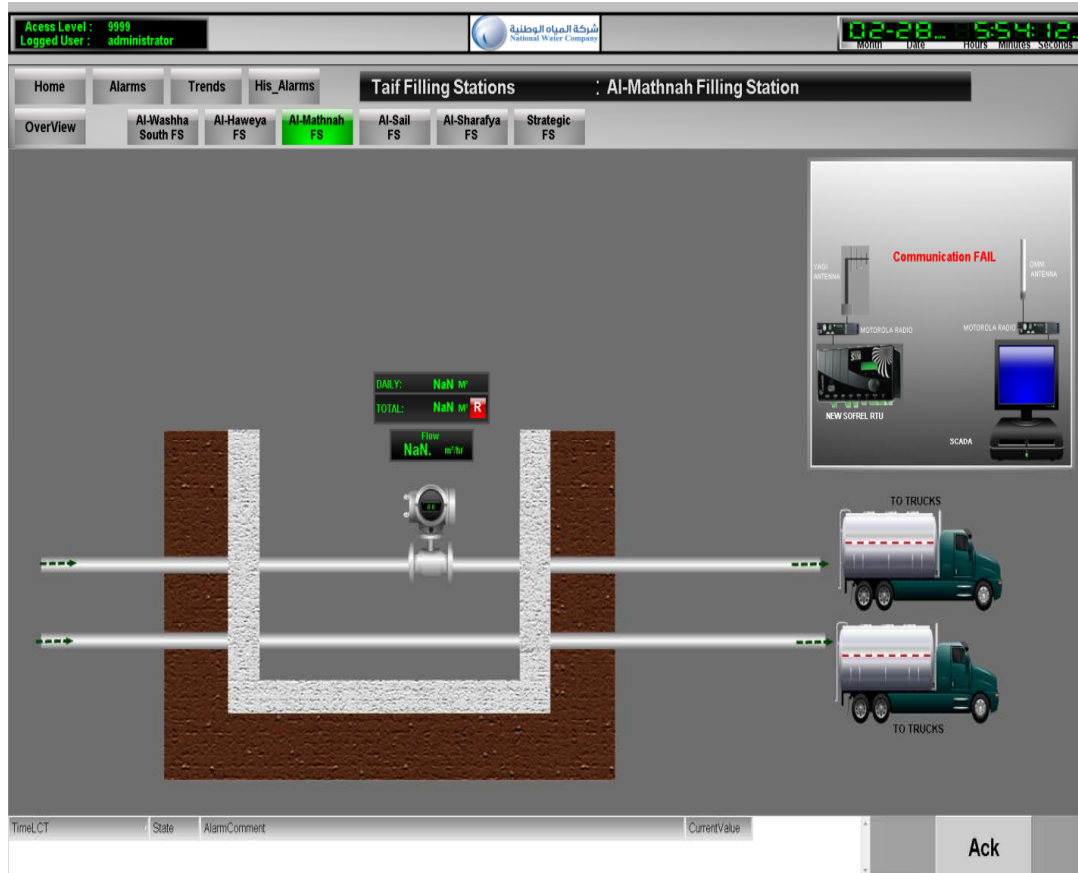
- 2 no's of Flow meters.
- 1 no's of Level transmitter.
- 1 no's of Chlorine Detector

Here user can monitor the analog instruments such as flow meter. Which showing flow rate, Daily flow value and totalizer valve. Also you can check the RTU status.

Level of tank shown here which is in meter.

■ Al Mathnah Filling Station

By clicking Al Mathnah Filling Station from Map section, user will get Al Mathnah Filling Station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 1 no's of Flow meters.

Here user can monitor the analog instruments such as flow meter. Which showing flow rate, Daily flow value and totalizer valve. Also you can check the RTU status.



■ Al Sail Filling Station

By clicking Al Sail Filling Station from Map section, user will get Al Sail Filling Station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

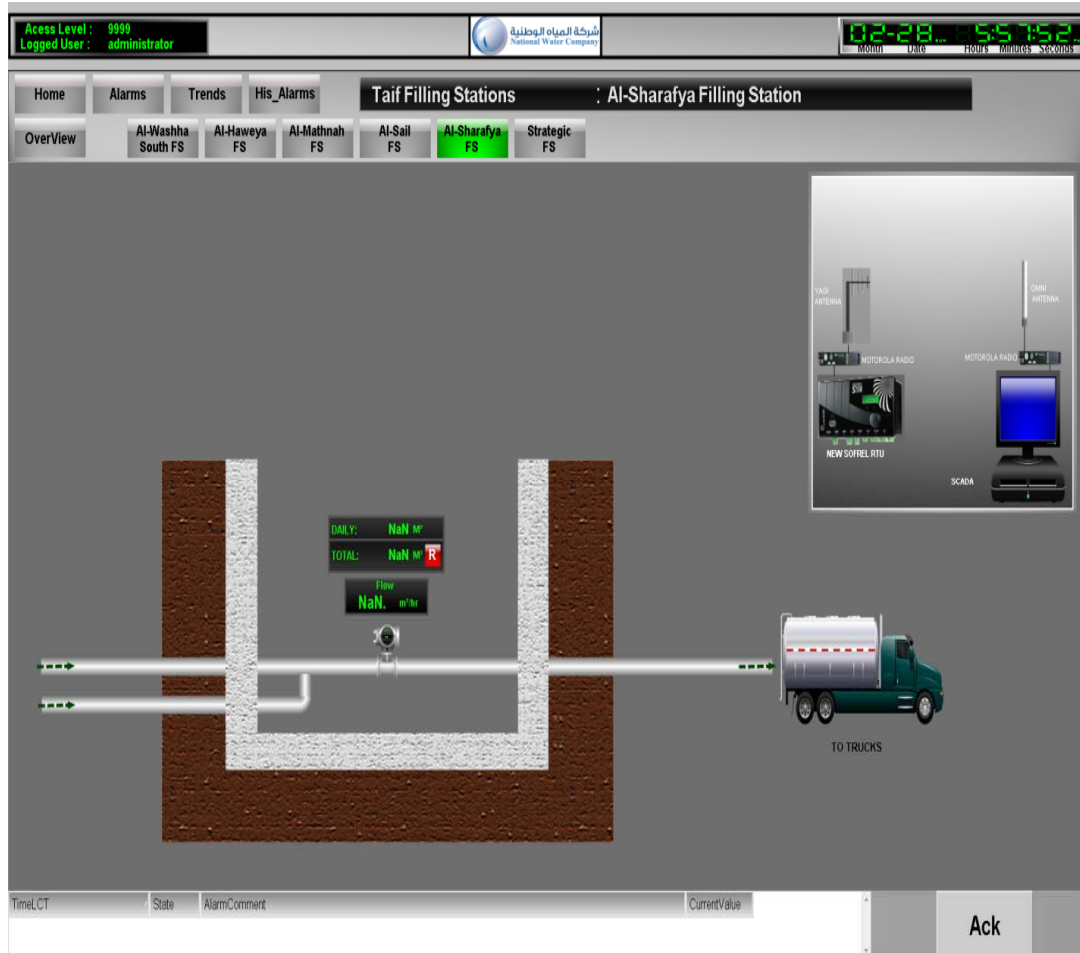
- 1 no's of Flow meters.

Here user can monitor the analog instruments such as flow meter. Which showing flow rate, Daily flow value and totalizer valve. Also you can check the RTU status.



■ Al Sharafya Filling Station

By clicking Al Sharafya Filling Station from Map section, user will get Al Sharafya Filling Station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

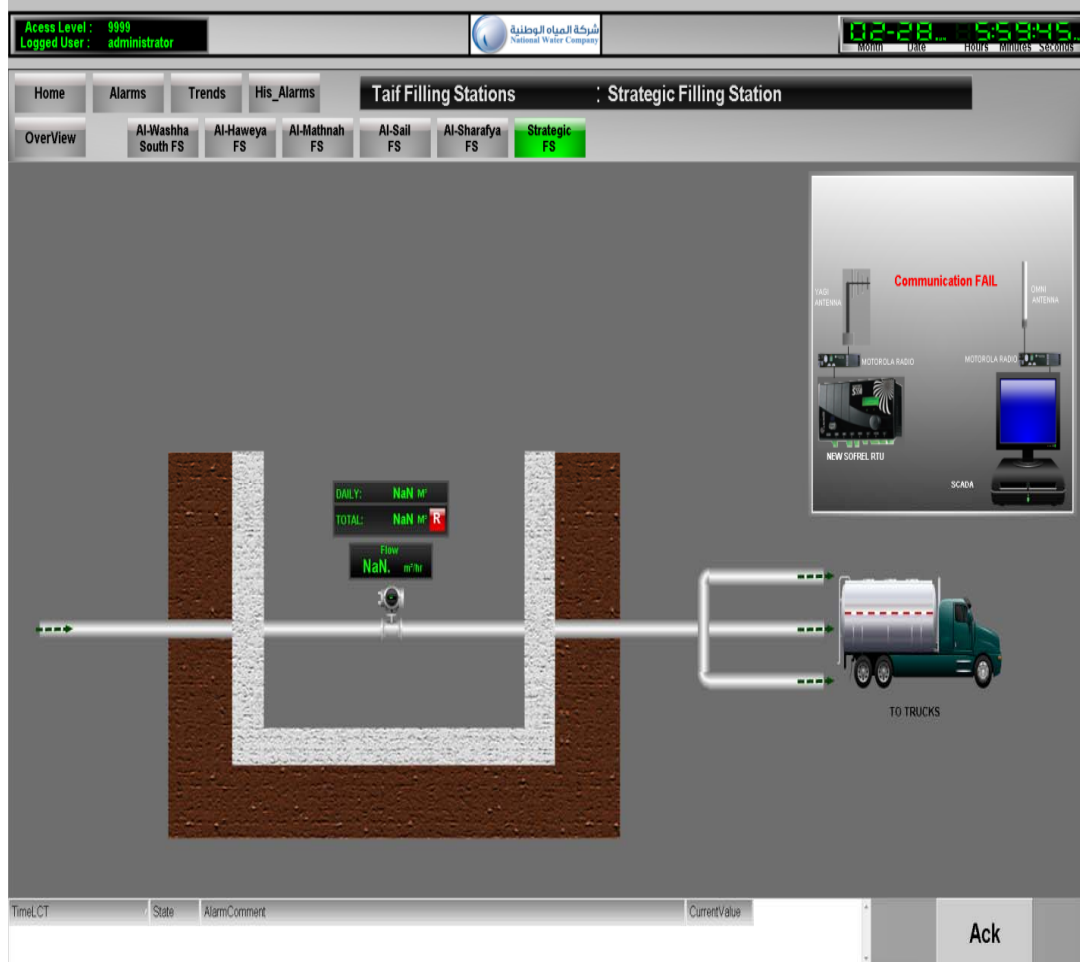
- 1 no's of Flow meters.

Here user can monitor the analog instruments such as flow meter. Which showing flow rate, Daily flow value and totalizer valve. Also you can check the RTU status.



▪ Strategic Filling Station

By clicking Strategic Filling Station from Map section, user will get Strategic Filling Station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

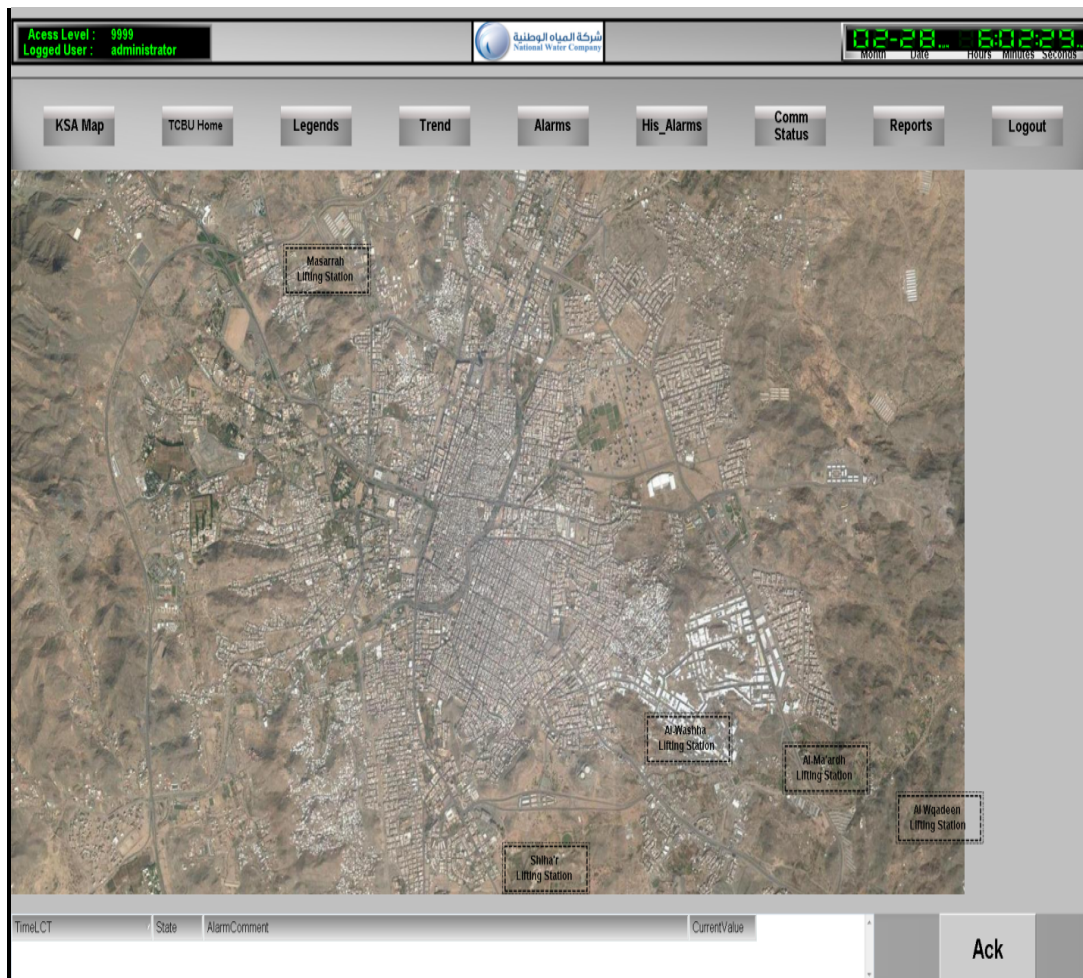
- 1 no's of Flow meters.

Here user can monitor the analog instruments such as flow meter. Which showing flow rate, Daily flow value and totalizer value. Also you can check the RTU status.

5) Lifting Stations

After the clicking the Filling Stations section button user will get the map. Any site can be selected by clicking on it. Green rectangle box indicated that the communication status is good.



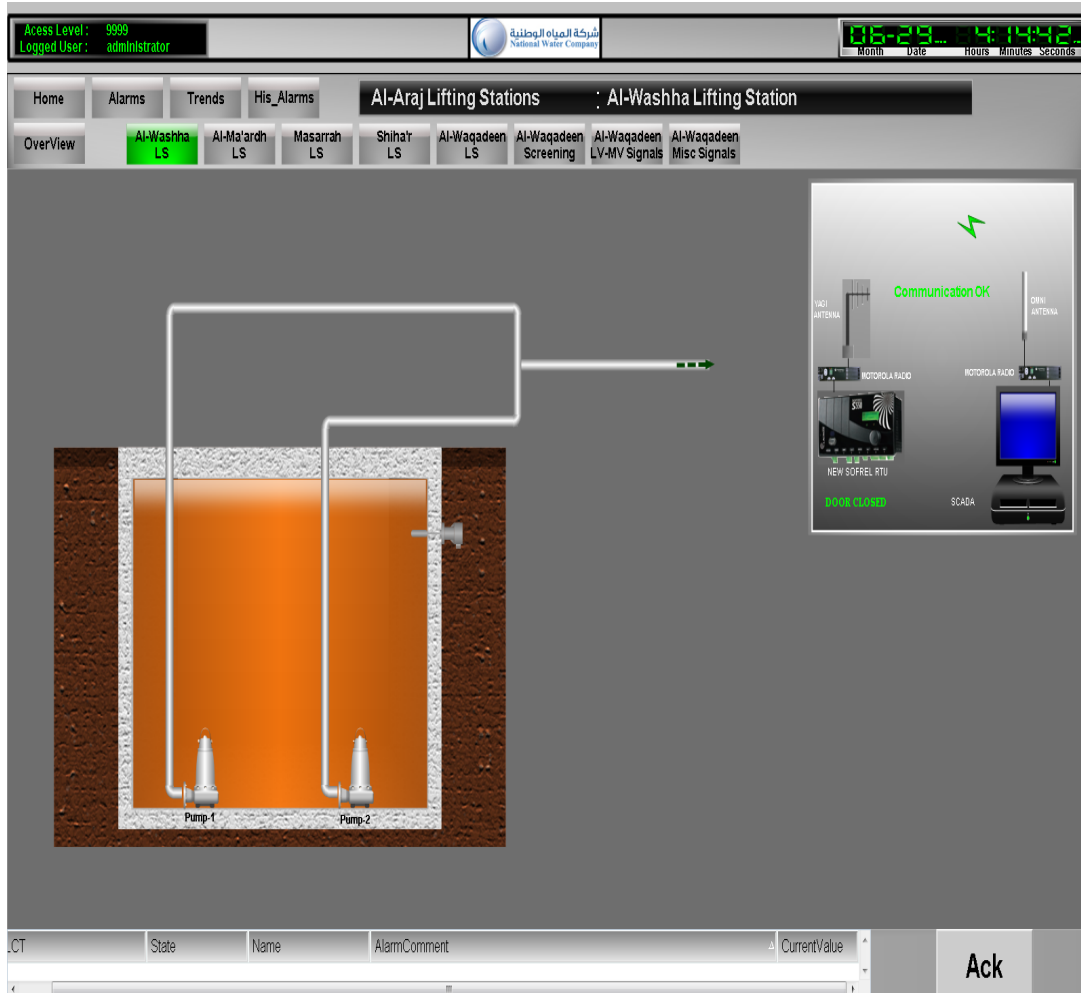


Any Site can be monitored by clicking on the site on the map.



■ Al Washha Lifting Station

By clicking Al washha lifting Station from Map section, user will get Al Washha lifting Station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

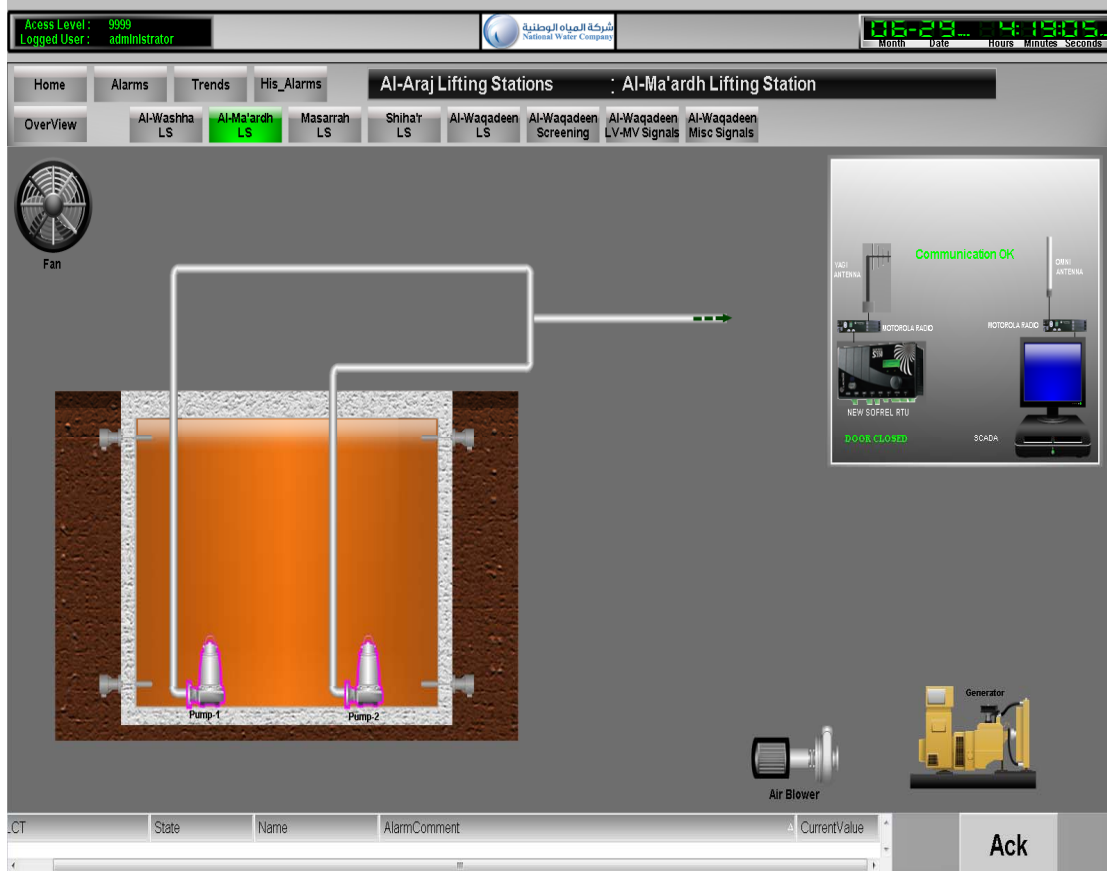
- 2 no's of Submersible Pumps.
- 4 no's of Level Switches.

Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump.



■ Al Ma'ardh Lifting Station

By clicking Al Ma'ardh lifting Station from Map section, user will get Al Ma'ardh lifting Station section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 2 no's of Submersible Pumps.
- 4 no's of Level Switches.
- 1 no's of Fan.
- 1 no's of Air Blower.
- 1 no's of Generator.

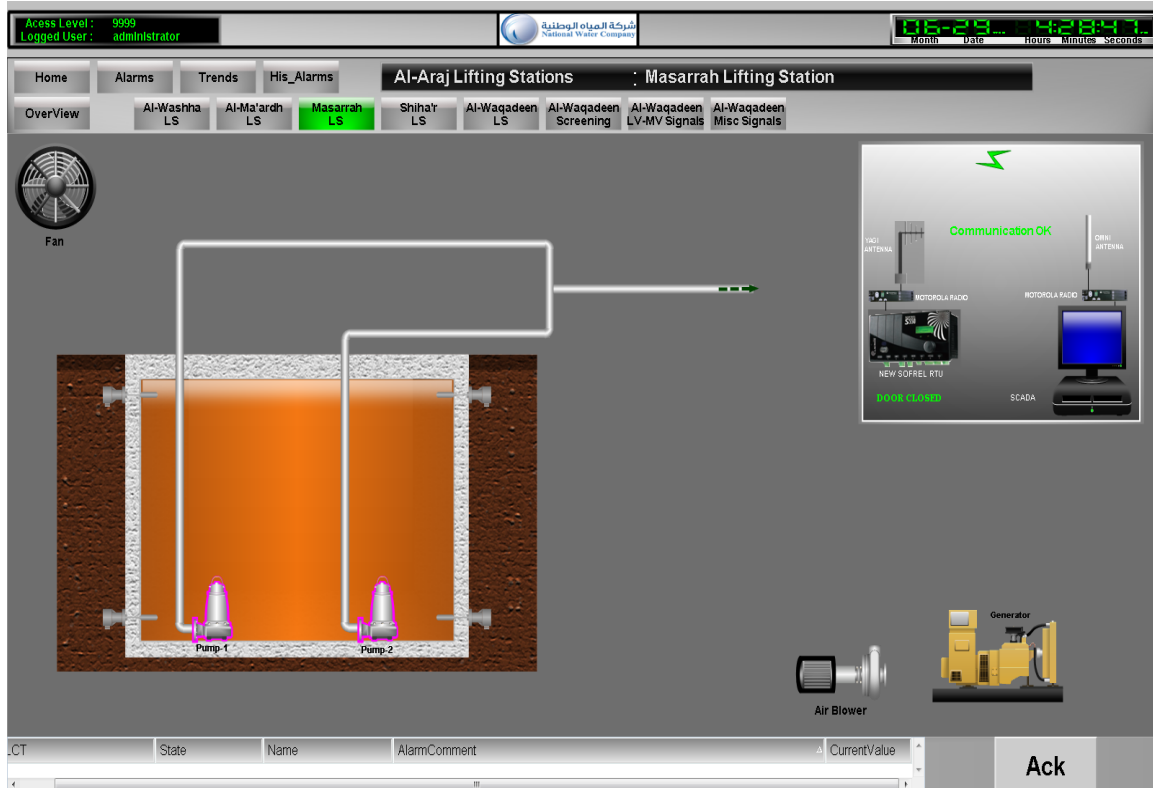
Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump.





■ Al Masarrah Lifting Station

By clicking Al Masarrah lifting Station from Map section, user will get Al Masarrah lifting Station section. Here user only for monitoring and control the all instrument values.



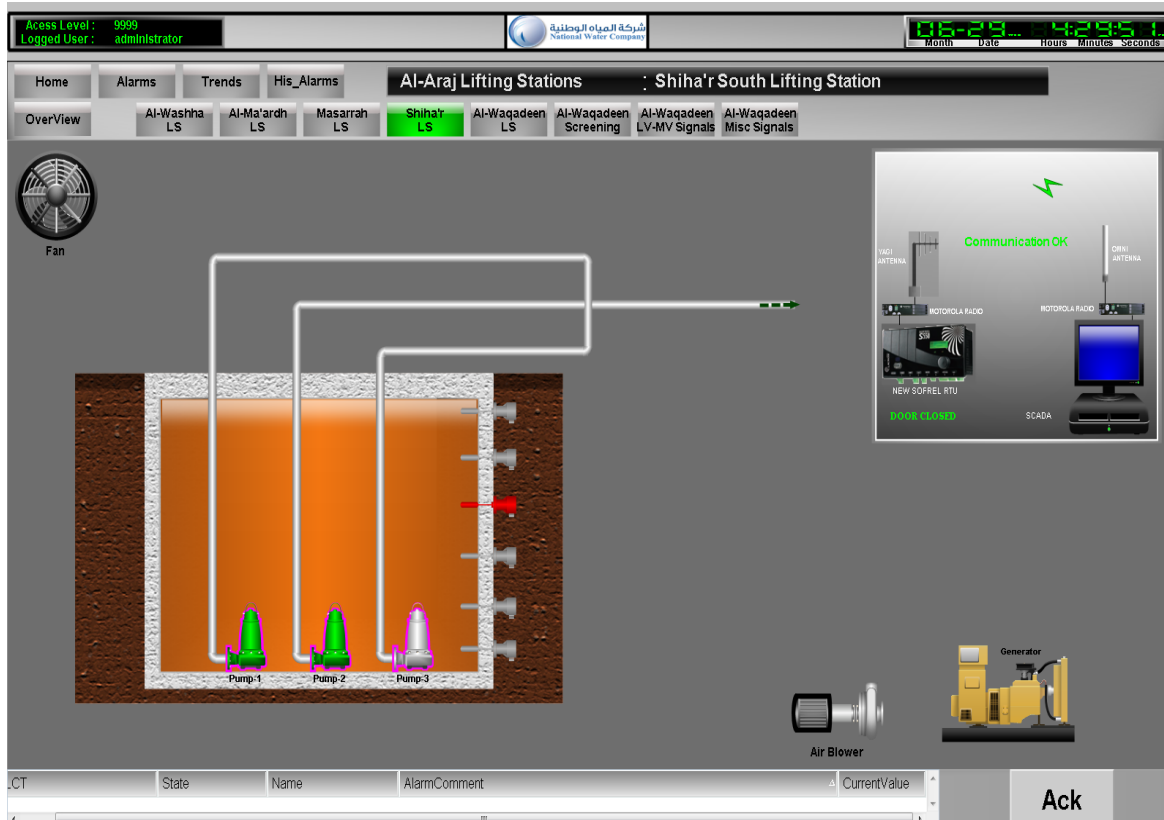
This section includes the following:

- 2 no's of Submersible Pumps.
- 4 no's of Level Switches.
- 1 no's of Fan.
- 1 no's of Air Blower.
- 1 no's of Generator.

Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump.

■ Al Shiha'r Lifting Station

By clicking Al Shiha'r lifting Station from Map section, user will get Al Shiha'r lifting Station section. Here user only for monitoring and control the all instrument values.



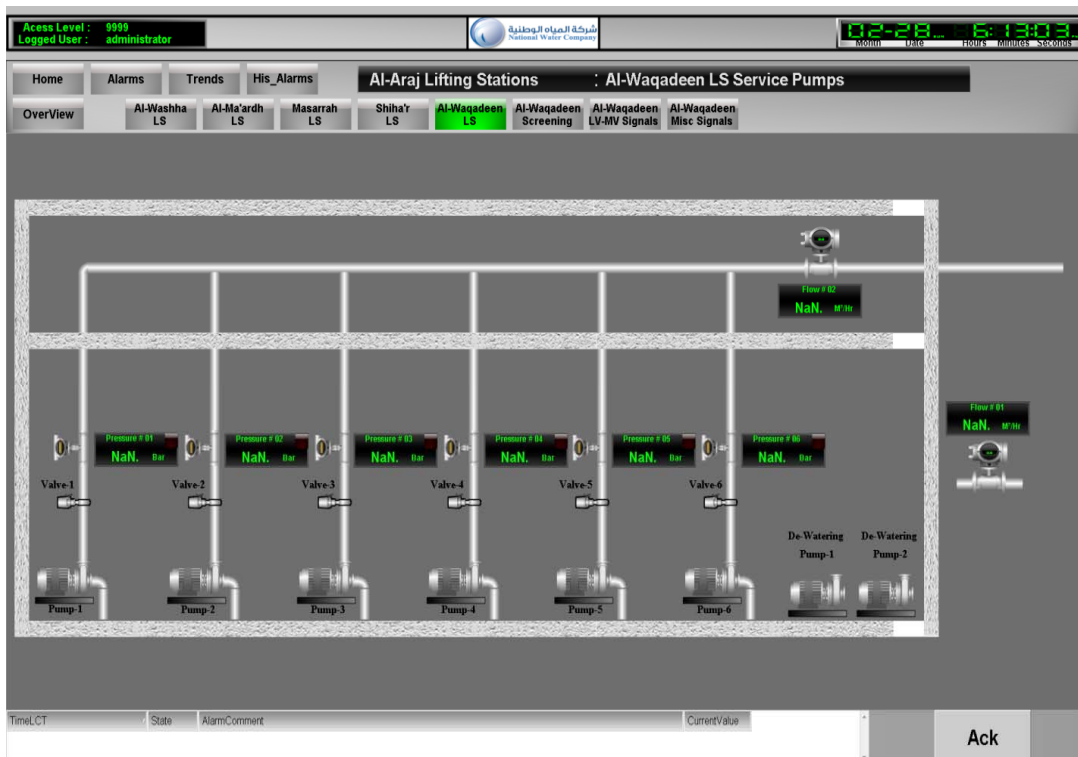
This section includes the following:

- 3 no's of Submersible Pumps.
- 5 no's of Level Switches.
- 1 no's of Fan.
- 1 no's of Air Blower .
- 1 no's of Generator.

Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. From pump popup user can start and stop pump by using start, stop buttons. Led indicate that the status of all signal related pump.

■ Al Waqadeen Lifting Station

By clicking Al Waqadeen lifting Station from Map section, user will get Al Waqadeen lifting Station section. Here user only for monitoring the all instrument values.



This section includes the following:

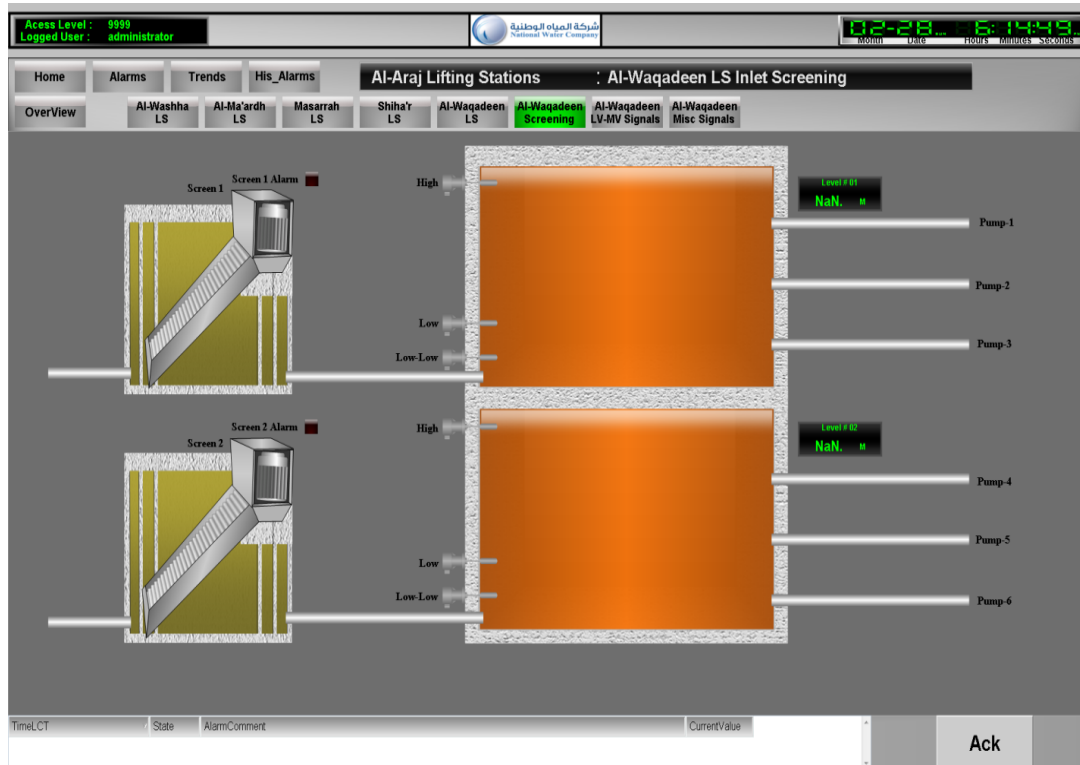
- 8 no's of Pumps.
- 8 no's of Flow meters.
- 6 no's of Valves.

Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. User can control the transformer by using block, open, and reset button from transformer popup.



■ Al Waqadeen screening Lifting Station

By clicking Al Waqadeen screening lifting Station from Map section, user will get Al Waqadeen screening lifting Station section. Here user only for monitoring and control the all instrument values.



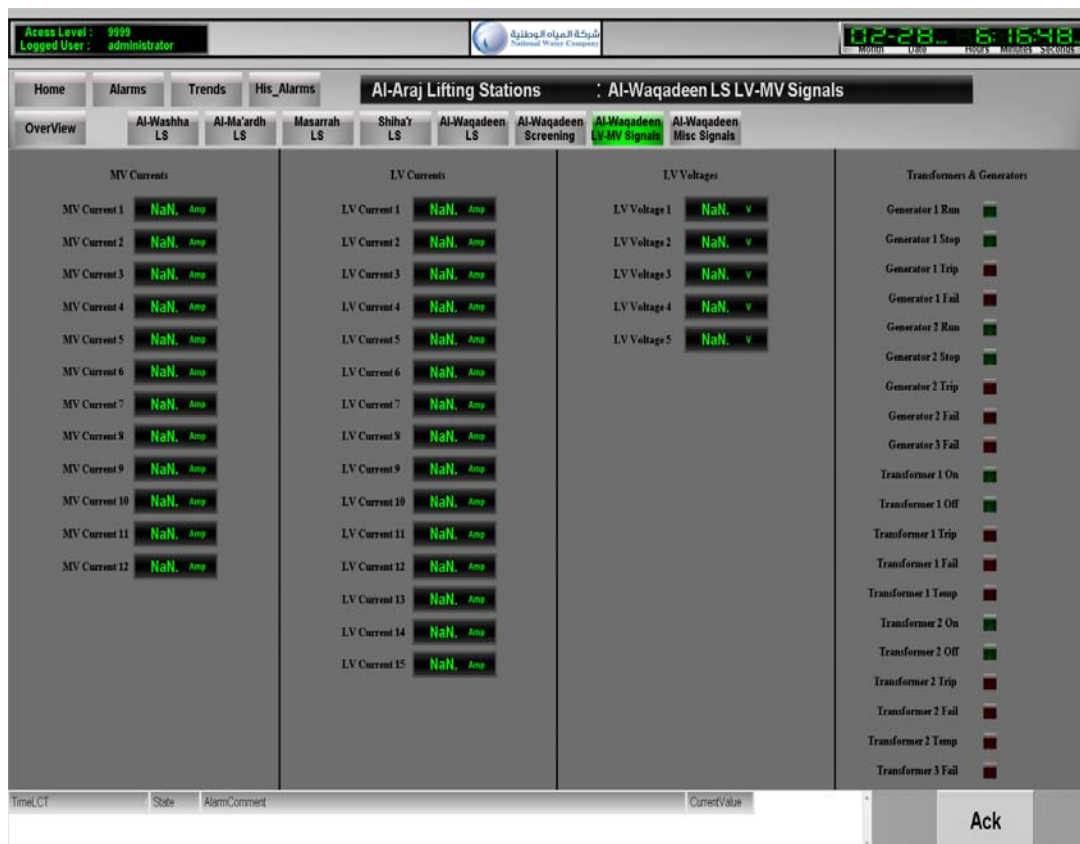
This section includes the following:

- 2 no's of Screens.
- 6 no's of Level switches.

Here user can monitor the all analog instruments such as Pumps, flow meter. User can also control the pump by using manual command. Manual commands given from its popup. popup is already explained in the popup section. For example user want to show the status of pump and give the manual command form its popup then user want to click the on the pump symbol. Once he click the on the symbol he will get popup window. User can see the status of pump and give manual command by using manual button which is present on popup window. User can control the transformer by using block, open, and reset button from transformer popup.

■ Al Waqadeen LS LV-MV signals

By clicking Al Waqadeen LS LV-MV signal from Map section, user will get Al Waqadeen LS LV-MV signals section. Here user only for monitoring all feedback signals.



This section includes the following:

- 12 no's of MV Current.
- 15 no's of LV Current.
- 6 no's of LV Voltage.
- Transformers and Generators signals

■ Al Waqadeen LS Misc signals

By clicking Al Waqadeen LS Misc signal from Map section, user will get Al Waqadeen LS Misc signals_section. Here user only for monitoring and control the all instrument values.

Access Level : 9999

Logged User : administrator


 شركة المياه الوطنية
 Nisam Water Company

02-28... 6:19:00
 Month Date Hours Minutes Seconds

Home

Alarms

Trends

His_Alarms

Al-Araj Lifting Stations

Al-Waqadeen LS Miscellenious Signals

Overview

Al-Washha LS

Al-Ma'ardh LS

Masarrah LS

Shiha'r LS

Al-Waqadeen LS

Al-Waqadeen Screening

Al-Waqadeen LV-MV Signals

Al-Waqadeen Misc Signals

Miscellaneous Signals

Air Condition 1 Fail	Protection Relay 1 Fault	LV 1 On	MV 1 On
Air Condition 2 Fail	Protection Relay 2 Fault	LV 1 Off	MV 1 Off
Battery 1 High	Protection Relay 3 Fault	LV 1 Trip	MV 1 Trip
Battery 1 Low	Protection Relay 4 Fault	LV 2 On	MV 2 On
Charge Fail	Protection Relay 5 Fault	LV 2 Off	MV 2 Off
Discharge High	Protection Relay 6 Fault	LV 2 Trip	MV 2 Trip
Dewatering Pump 1 Start	Protection Relay 7 Fault	LV 3 On	MV 3 On
Dewatering Pump 2 Start	Protection Relay 8 Fault	LV 3 Off	MV 3 Off
Dewatering Pump 1 & 2 Stop	Protection Relay 9 Fault	LV 3 Trip	MV 3 Trip
Earth Switch 1	Protection Relay 10 Fault	LV 4 On	MV 4 On
Earth Switch 2	Protection Relay 11 Fault	LV 4 Off	MV 4 Off
Earth Switch 3	Protection Rly 1 Fault	LV 4 Trip	MV 4 Trip
Earth Switch 4	Protection Rly 2 Fault	LV 5 On	MV 5 On
Earth Switch 5	Protection Rly 3 Fault	LV 5 Off	MV 5 Off
Earth Switch 6	Protection Rly 4 Fault	LV 5 Trip	MV 5 Trip
Fire Alarm	Protection Rly 5 Fault	LV 6 On	MV 6 On
PLC Fail	Protection Rly 6 Fault	LV 6 Off	MV 6 Off
UPS Run	Protection Rly 7 Fault	LV 6 Trip	MV 6 Trip
UPS Fail	Protection Rly 8 Fault		MV 7 On
Water Hummer	Protection Rly 9 Fault		MV 7 Off
	Protection Rly 10 Fault		MV 7 Trip

TimeLCT

State

AlarmComment

CurrentValue

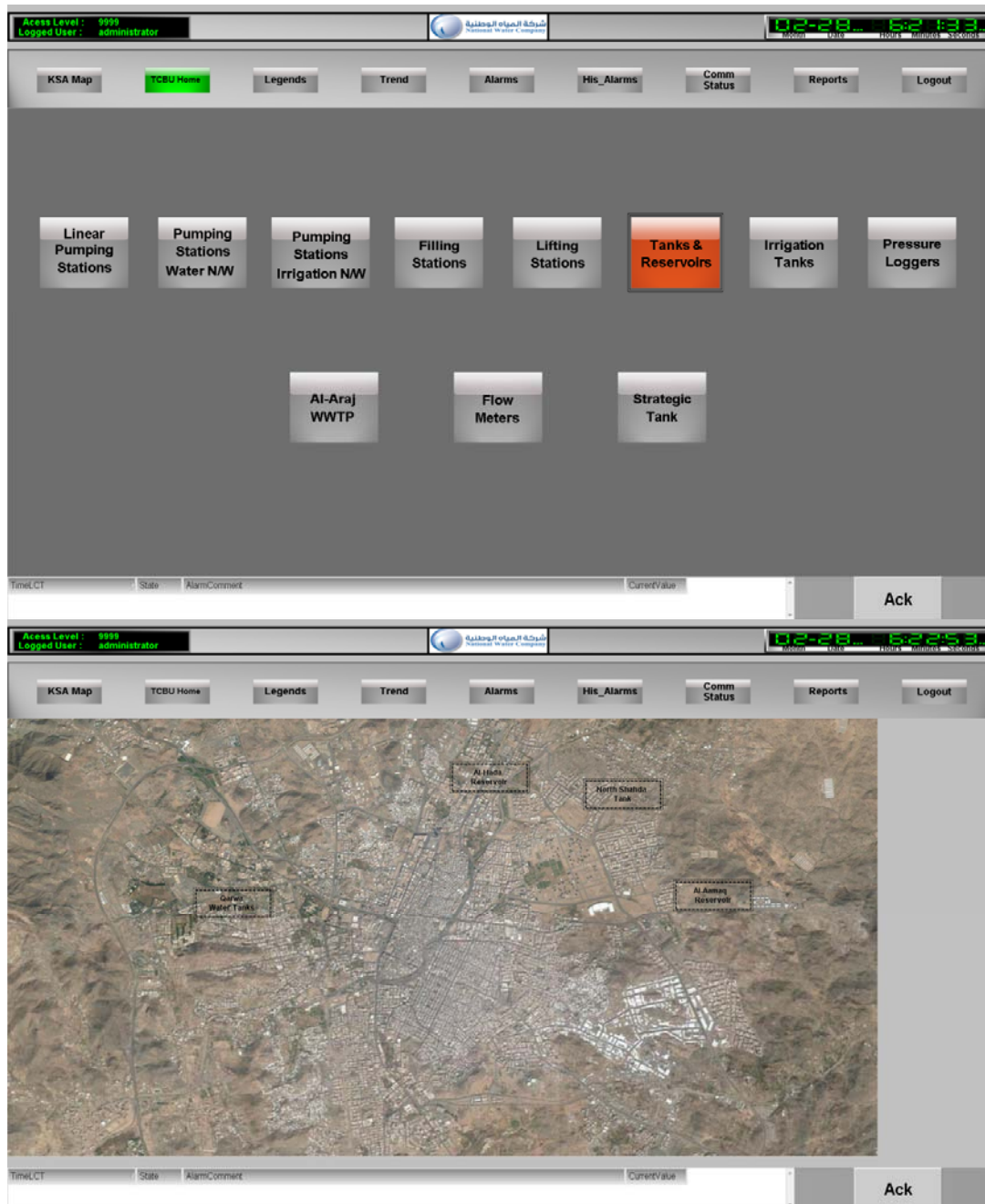
Ack

This section includes the following:

- Miscellaneous signals

6) Tanks and Reservoirs Stations

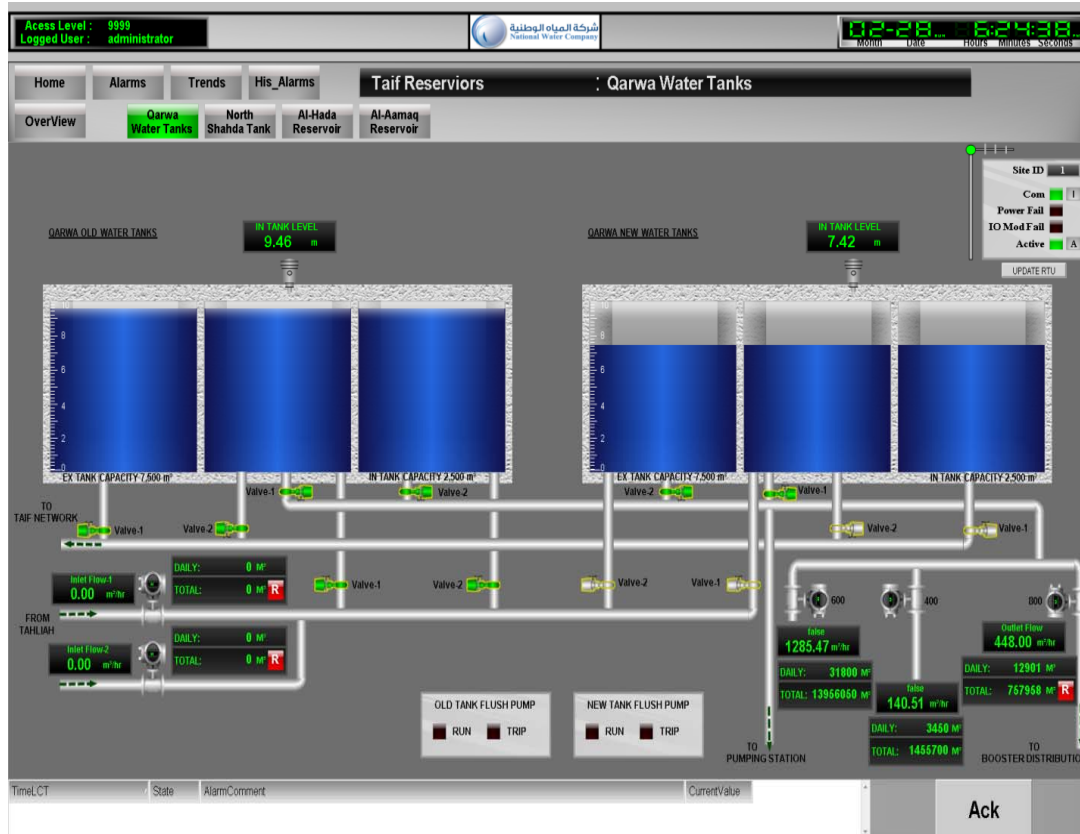
After the clicking the Tanks and reservoirs Stations section button user will get the map. Any site can be selected by clicking on it. Green rectangle box indicated that the communication status is good.



Any tank Section can be monitored by clicking on the respective site location.

■ Qarwa Water Tanks

By clicking Qarwa Water Tanks from Map section, user will get Qarwa Water Tanks section. Here user only for monitoring and control the all instrument values.



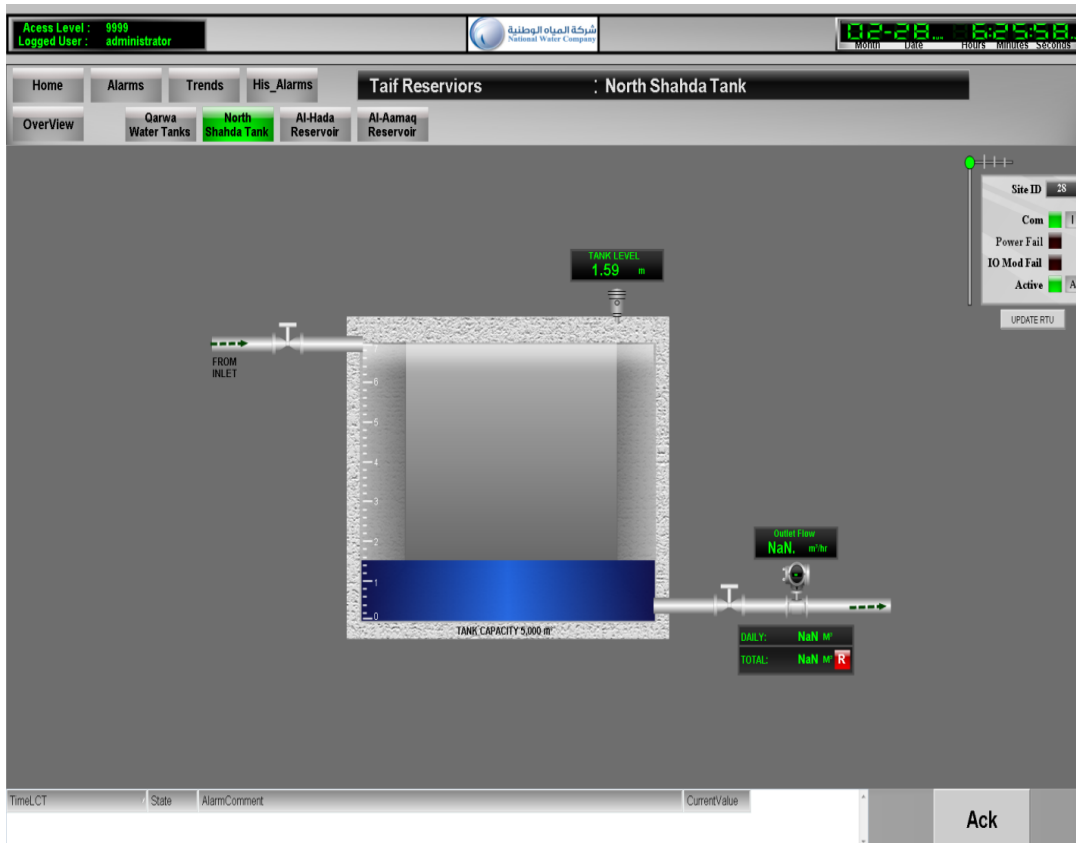
This section includes the following:

- 2 no's of Level transmitters.
- 5 no's of Flow meters.
- 12 no's of Valves.

Here user can monitor the analog instruments such as flow meter, valves and tank level . Which showing flow rate, Daily flow value and totalizer valve. Also you can check the RTU status.

■ North Shahda Water Tanks

By clicking North Shahda Water Tanks from Map section, user will get North Shahda Water Tanks section. Here user only for monitoring and control the all instrument values.



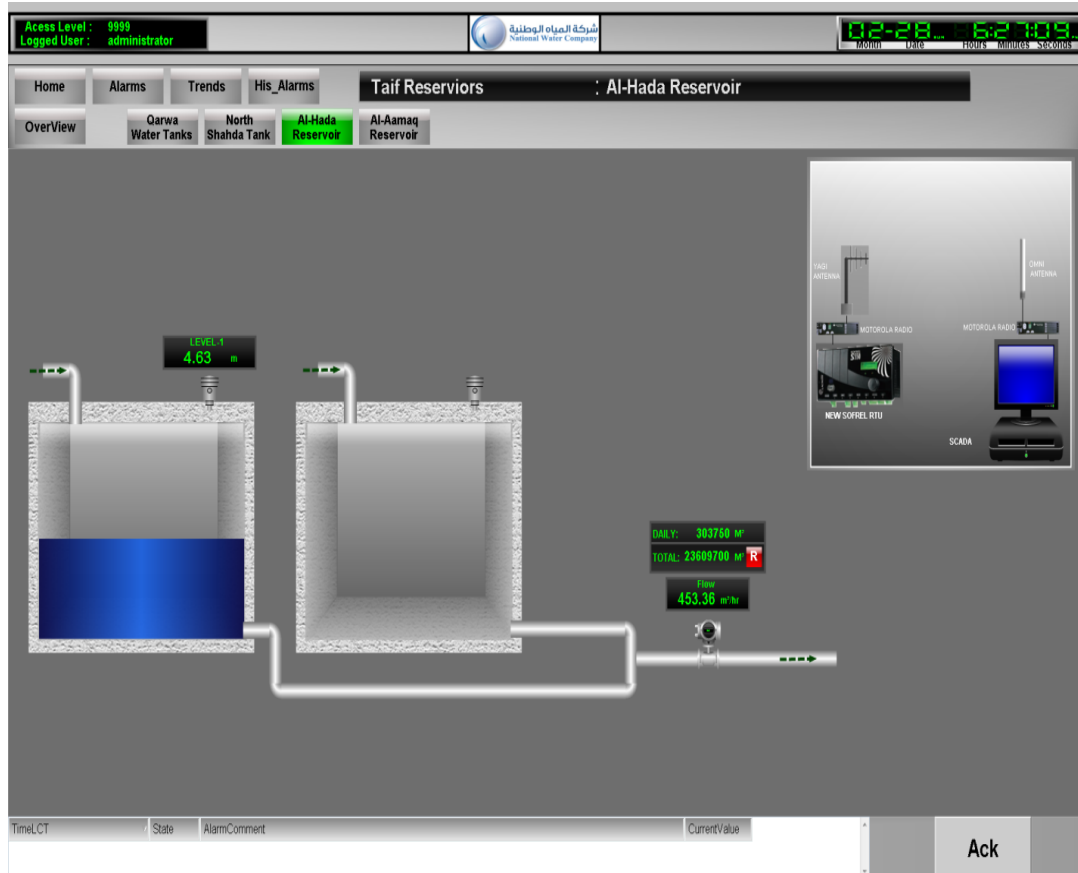
This section includes the following:

- 1 no's of Level transmitter.
- 1 no's of Flow meter.

Here user can monitor the analog instruments such as flow meter. Which showing flow rate, Daily flow value and totalizer valve. Also you can check the RTU status.

■ Al Hada Reservoir

By clicking Al Hada Reservoir from Map section, user will get Al Hada Reservoir section. Here user only for monitoring and control the all instrument values.



This section includes the following:

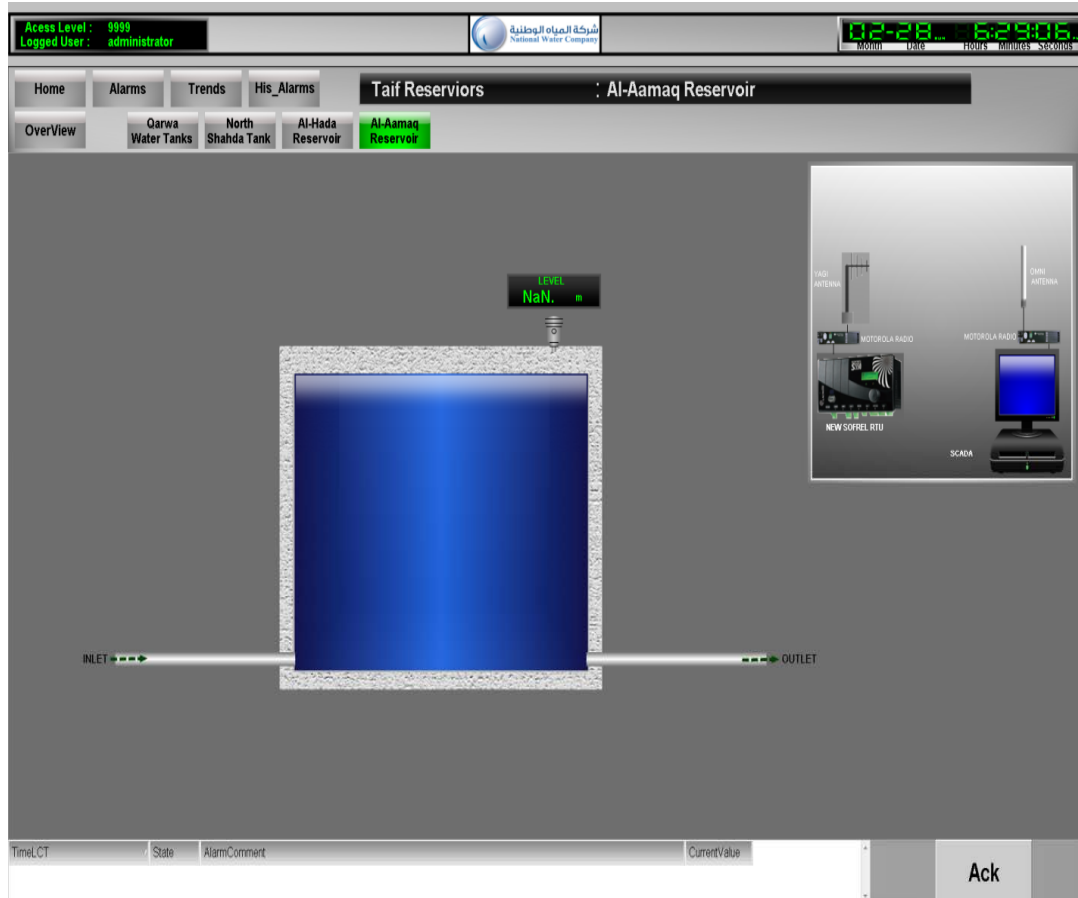
- 1 no's of Level transmitter.
- 1 no's of Flow meter.

Here user can monitor the analog instruments such as flow meter, valves and tank level . Which showing flow rate, Daily flow value and totalizer valve. Also you can check the RTU status



■ Al Amaq Reservoir

By clicking Al Amaq Reservoir from Map section, user will get Al Amaq Reservoir section. Here user only for monitoring and control the all instrument values.



This section includes the following:

- 1 no's of Level transmitter.

Here user can monitor the analog instruments such as flow meter. Which showing flow rate, Daily flow value and totalizer valve. Also you can check the RTU status



7) Irrigation Tanks

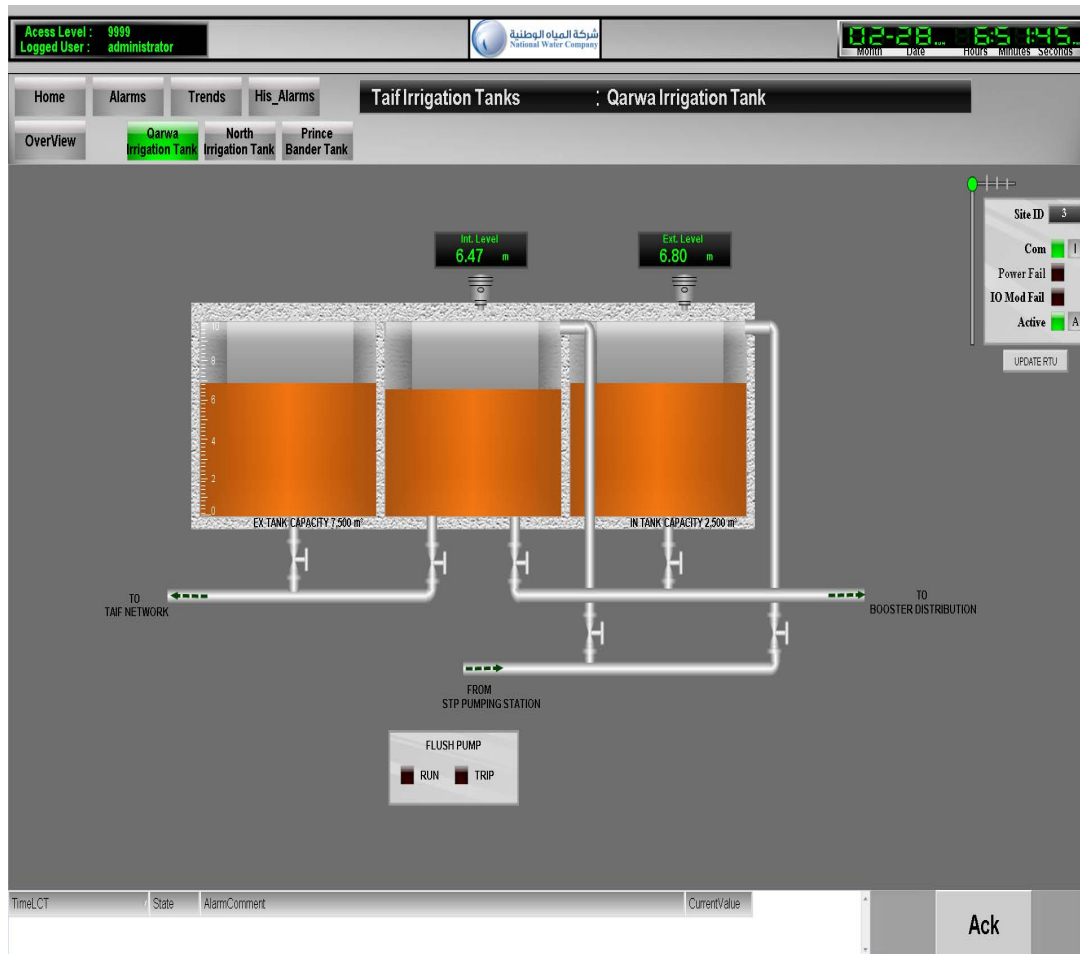
After the clicking the Irrigation Tanks section button user will get the map. Any site can be selected by clicking on it. Green rectangle box indicated that the communication status is good.





■ Qarwa Irrigation Tank

By clicking the Qarwa tank from header of irrigation tank, user will get qarwa tank of irrigation tank. Here user only for monitoring level and communication status. Below screens indicated the qarwa irrigation.



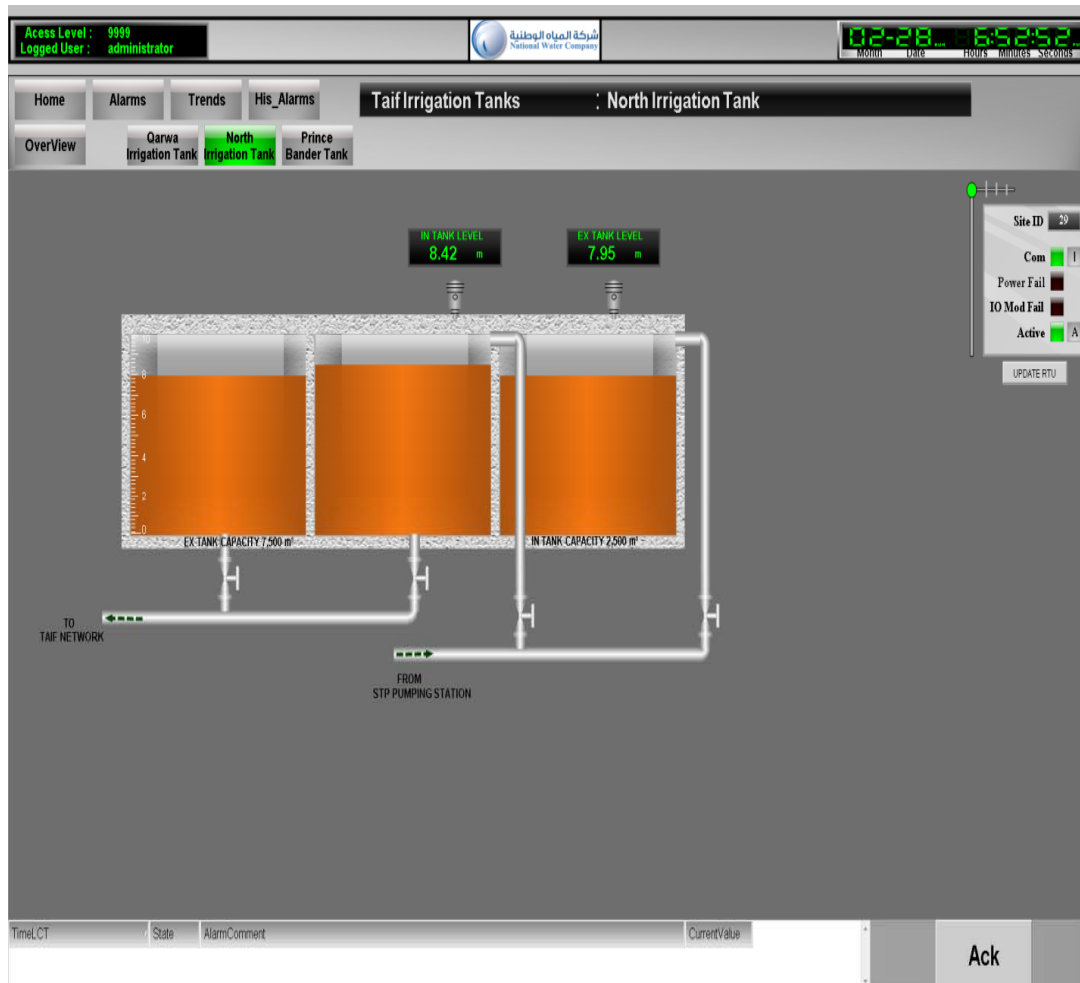
This section includes the following:

- 2 no's of Level transmitter.

Here user can monitor the analog instruments such as tank level. Also you can check the RTU status

■ North Irrigation Tank

By clicking the north tank from header of irrigation tank, user will get north tank of irrigation tank. Here user only for monitoring level and communication status. Below screens indicated the north irrigation tank.



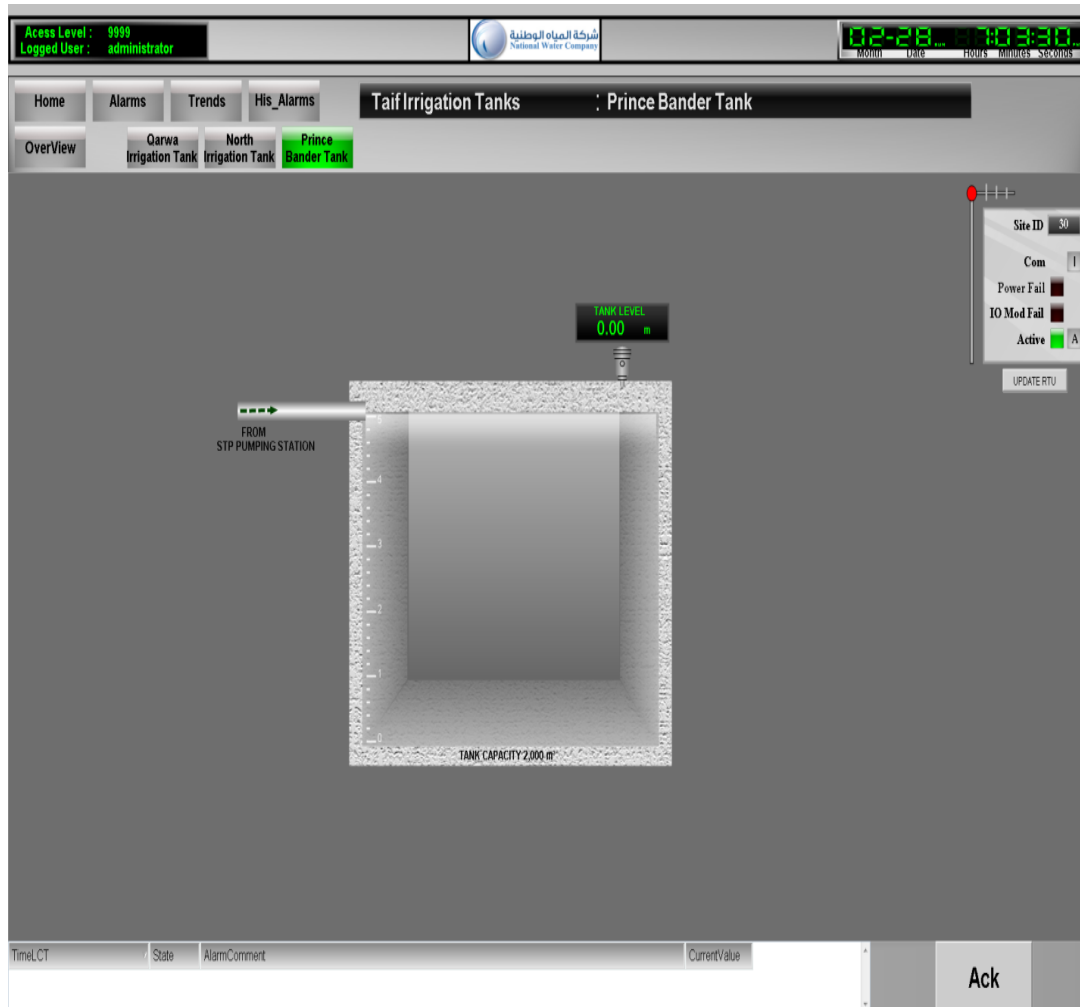
This section includes the following:

- 2 no's of Level transmitter.

Here user can monitor the analog instruments such as tank level in meter. Which shows same as tank actual height. Also you can check the RTU status



■ Prince Bander Tank



This section includes the following:

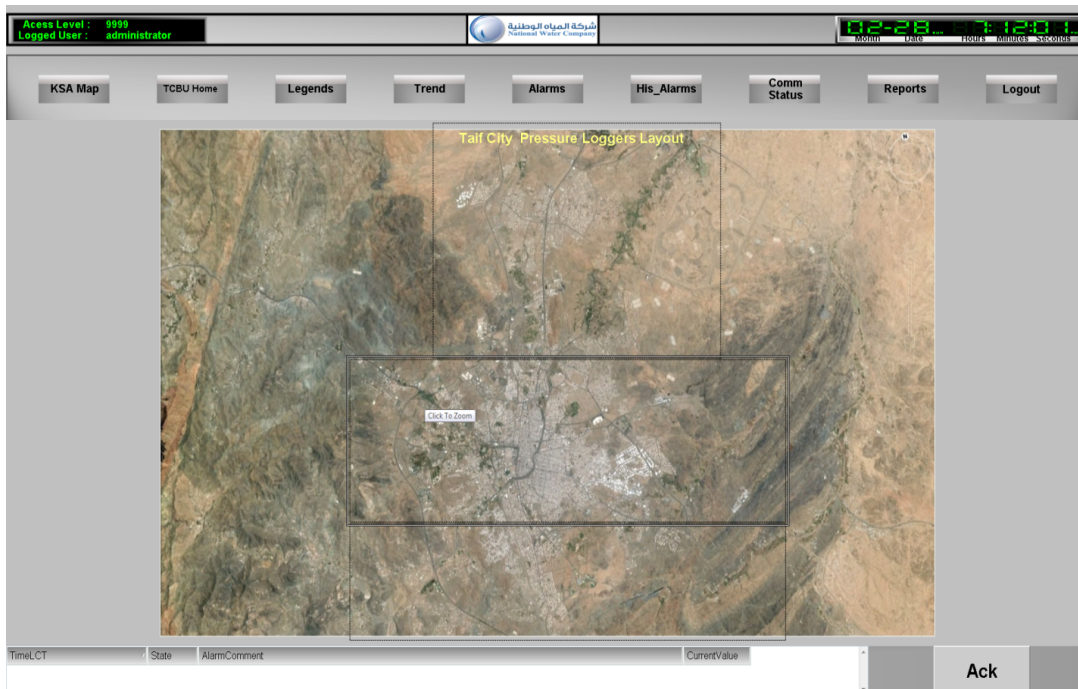
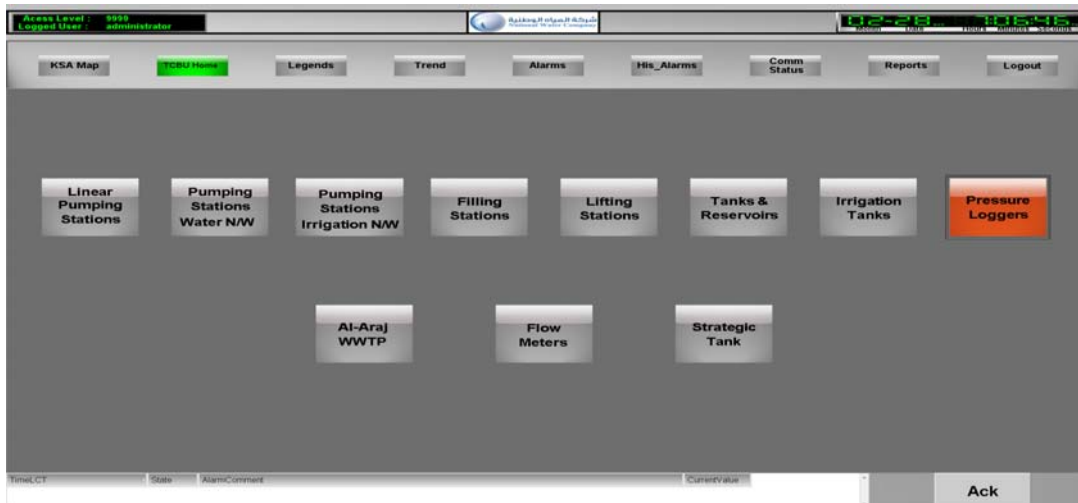
- 1 no's of Level transmitter.

Here user can monitor the analog instruments such as tank level in meter. Which shows same as tank actual height. Also you can check the RTU status



8) Pressure Loggers

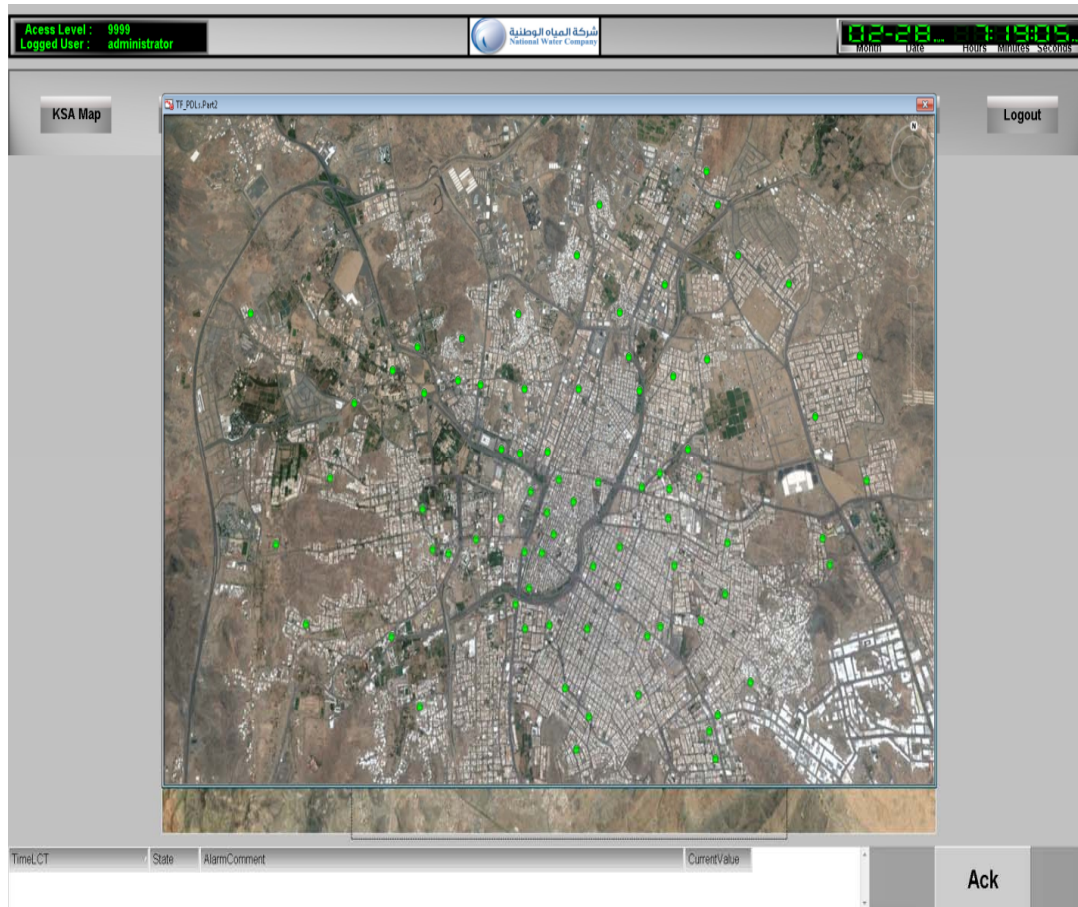
After the clicking the Pressure Loggers section button user will get the map. Any site can be selected by clicking on it.



Sites can be monitored by clicking on the site locations .Each site location has its own set of pressure loggers.

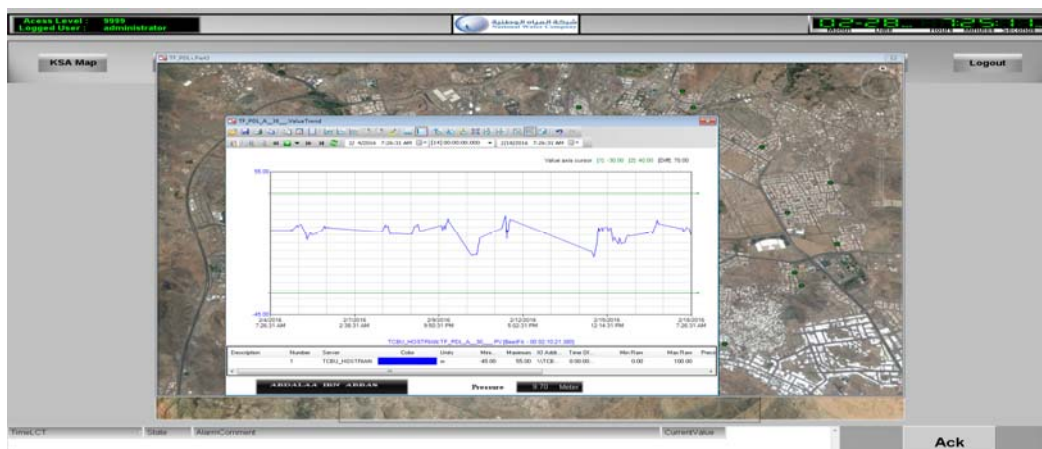


- Site location showing green dots as pressure loggers.



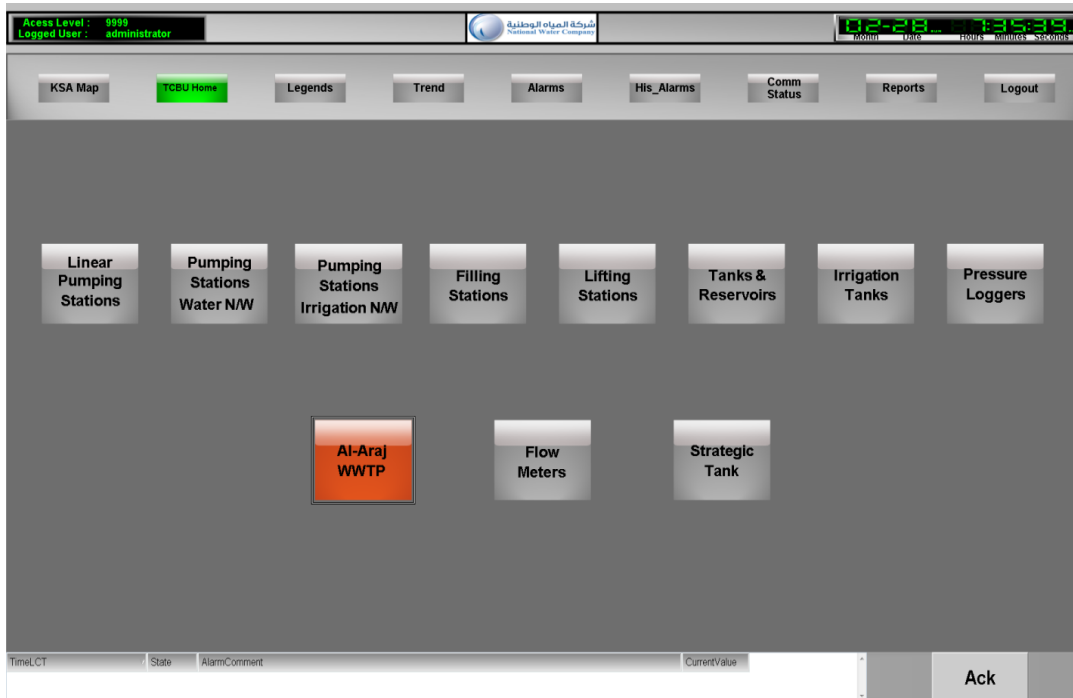
Pressure logger's trends can be monitored and seen by clicking on any of the green dots which denote pressure loggers.

A data logger is an electronic device that records data over time or in relation to location either with a built in instrument or sensor or via external instruments and sensors. Increasingly, but not entirely, they are based on a digital processor (or computer). They generally are small, battery powered, portable, and equipped with a microprocessor, internal memory for data storage, and sensors.



9) Al- Araj ExistingWWTP

After clicking the Al-Araj WWTP section button user will get the map. Al-Araj Existing or New can be selected from the site . In this section we will see Al-Araj existing section.



The existing section can be selected clicking on the existing site location.

▪ Al araj WWTP-exist general screen.

After the clicking existing button user will get existing section of al araj header.by default general overview screen will display. Here user only for monitoring and control the all device. Below screens indicated the general overview of al araj existing section.



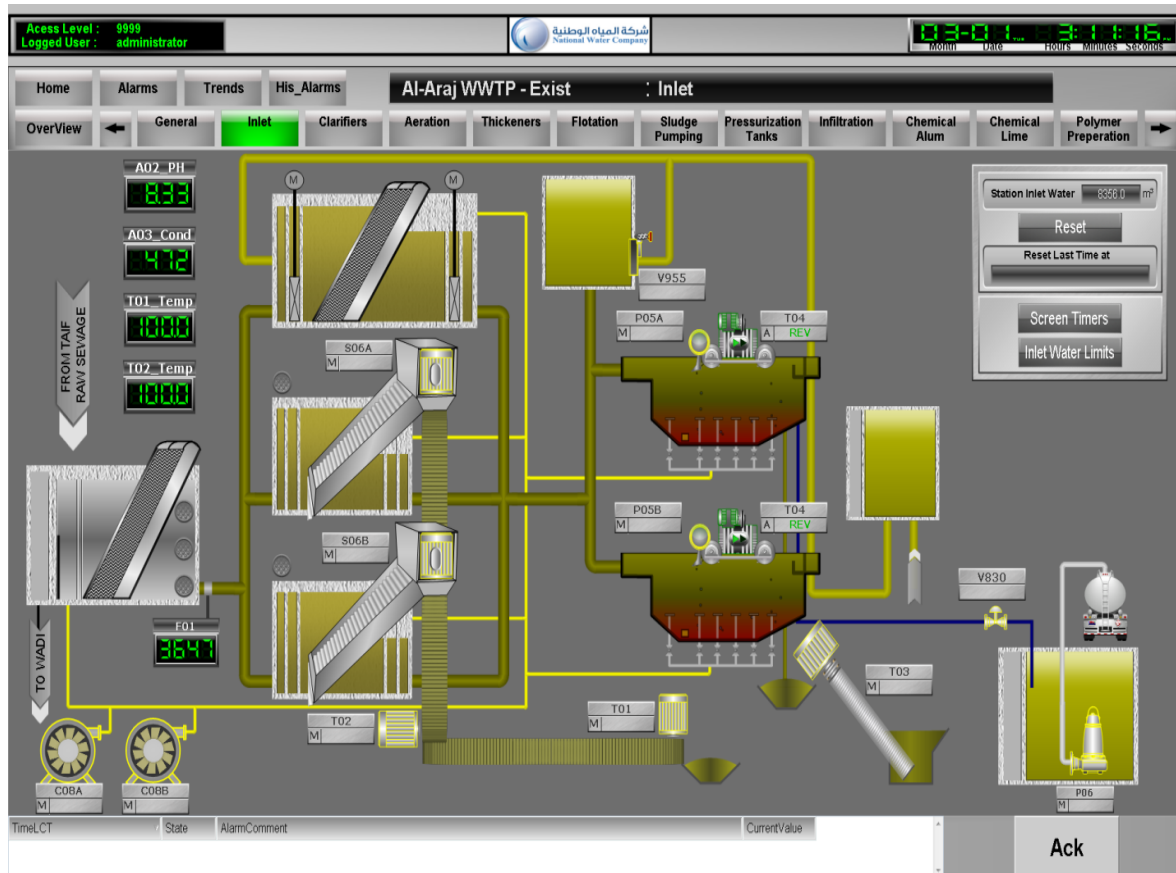
This section includes the following:

- 6 no's of pumps.
- 4 no's of Clarifier Tanks.
- 22 no's of Filters.
- 6 no's of Floation Tanks.



■ Al araj WWTP-exist inlet

By clicking the Inlet button from header of al araj, user will get inlet section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, valve & etc. Below screens indicated the inlet section.



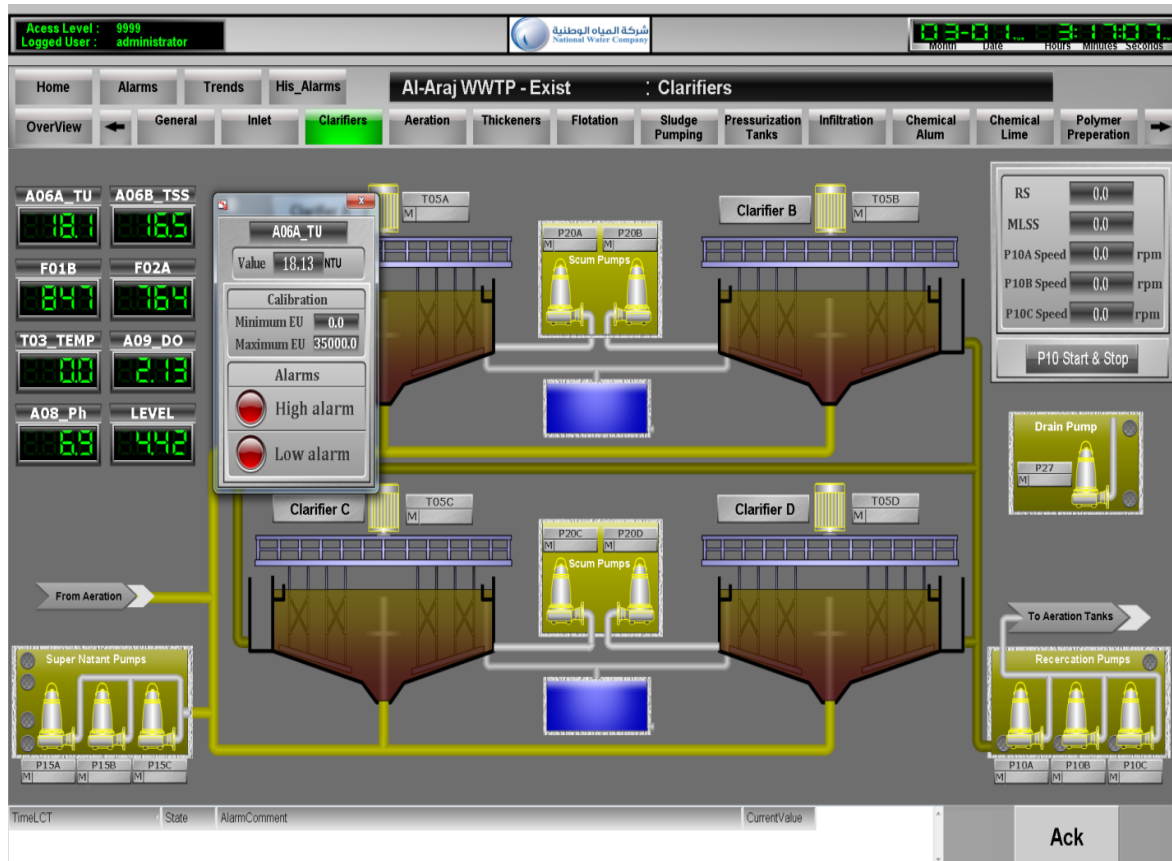
This section includes the following:

- 3 no's of screens.
- 1 no's of submersible pump.
- 1 no's of valve.
- 2 no's of aerators.



▪ Al araj WWTP-exist clarifiers screen.

By clicking the Clarifier button from header of al araj, user will get clarifier section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, clarifiers & etc. Below screens indicated the clarifiers section.



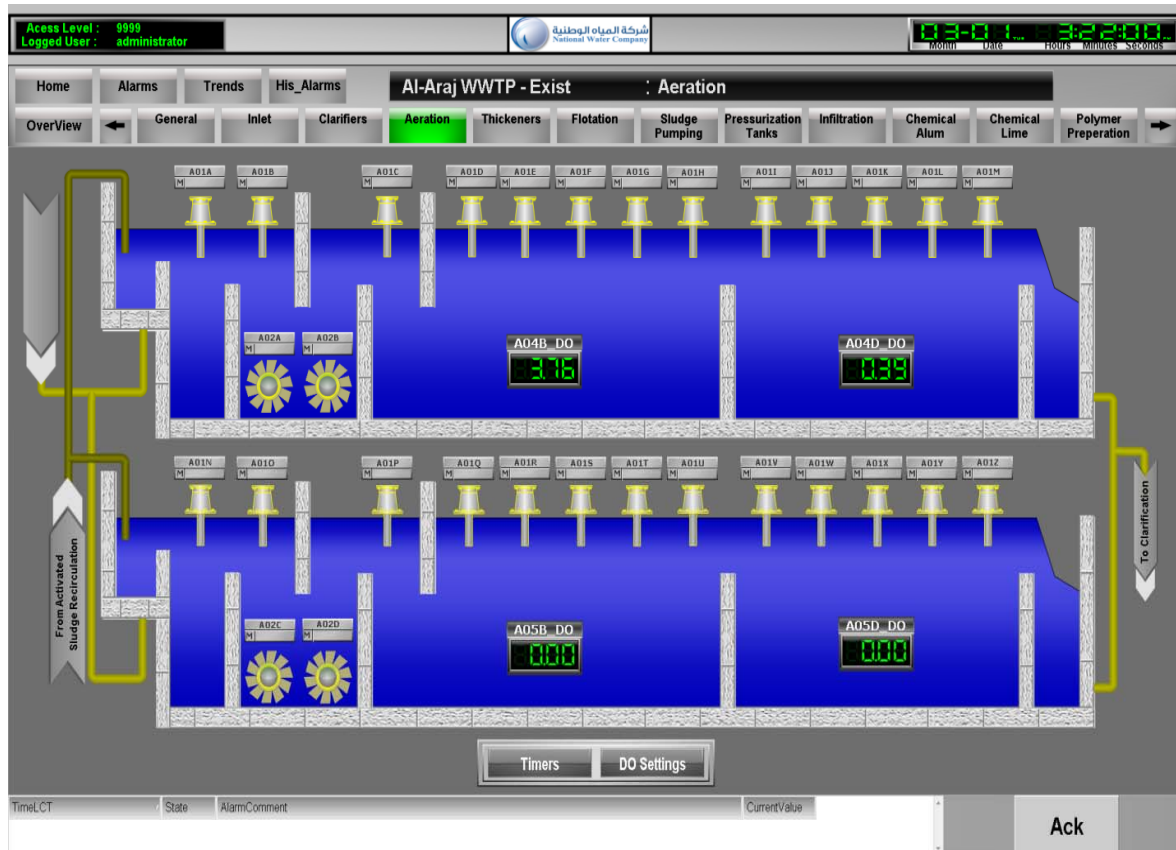
This section includes the following:

- 3 no's of Super Natant Pumps.
- 4 no's of Clarifiers.
- 4 no's of Scum Pumps.
- 3 no's of Recirculation Pumps.
- 1 no's of Drain Pump.



■ Al araj WWTP-exist Aeration Screen .

By clicking the Aeration button from header of al araj, user will get aeration section of existing al araj wwtp. Here user only for monitoring and control all device. Below screens indicated the aeration section.



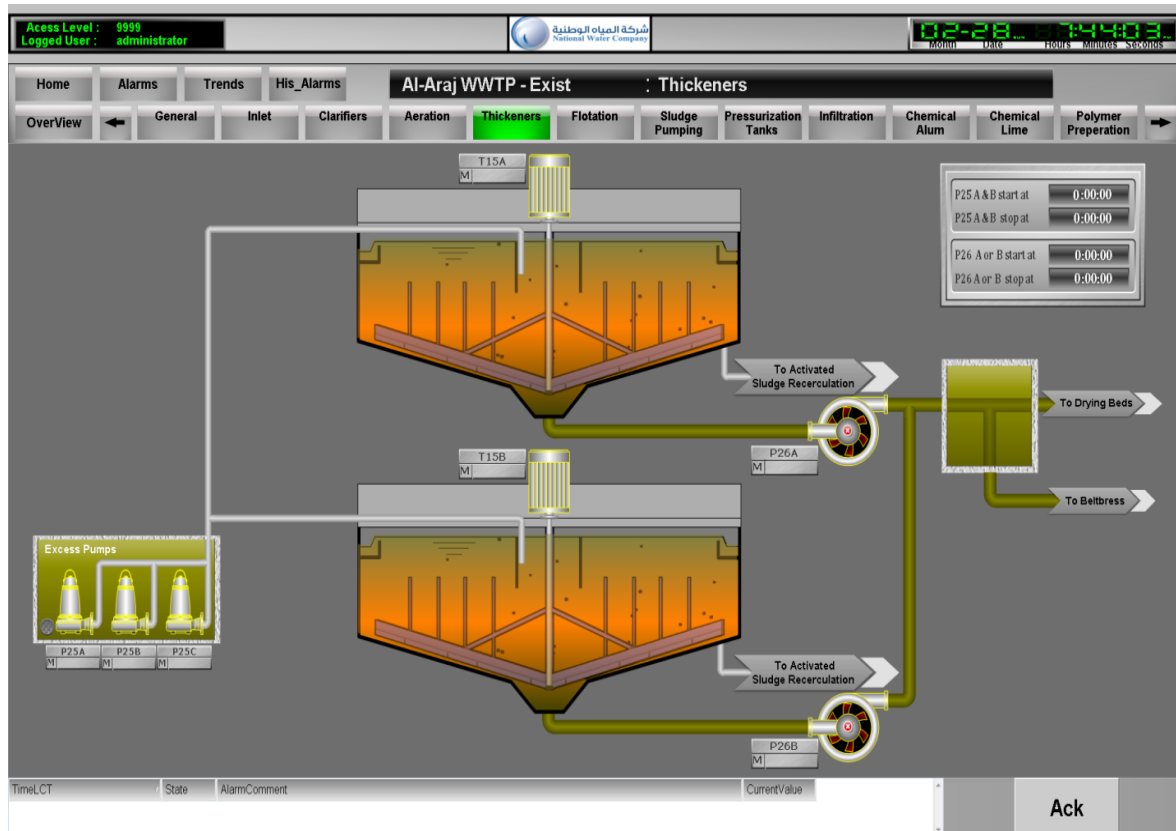
This section includes the following:

- 26 no's of Aerators.



▪ Al araj WWTP-exist Thickeners screen.

By clicking the thickner button from header of al araj, user will get thickner section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, thickner & etc. Below screens indicated the thickeners section.



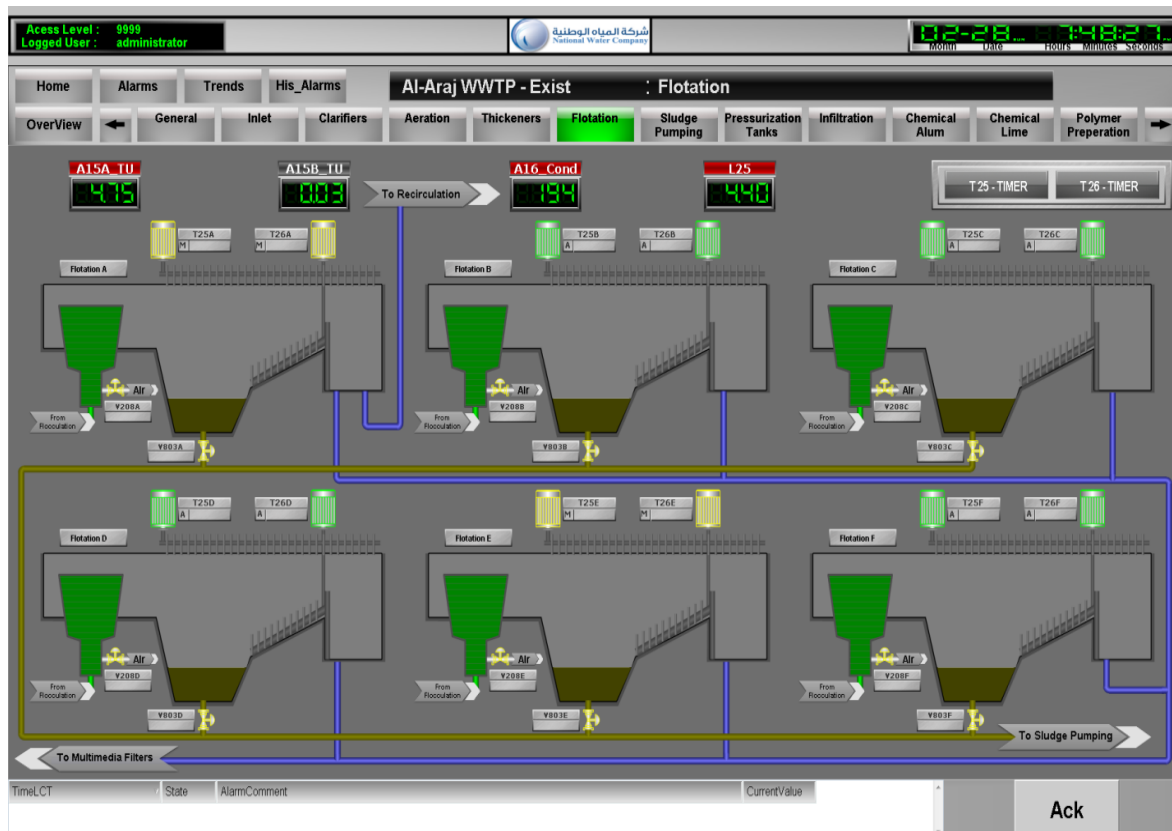
This section includes the following:

- 3 no's of Excess Pumps.
- 2 no's of Thickeners.
- 2 no's of Recirculation Pumps.



▪ Al araj WWTP-exist flotation screen.

By clicking the Flotation button from header of al araj, user will get flotation section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, tank, belts & etc. Below screens indicated the flotation section.



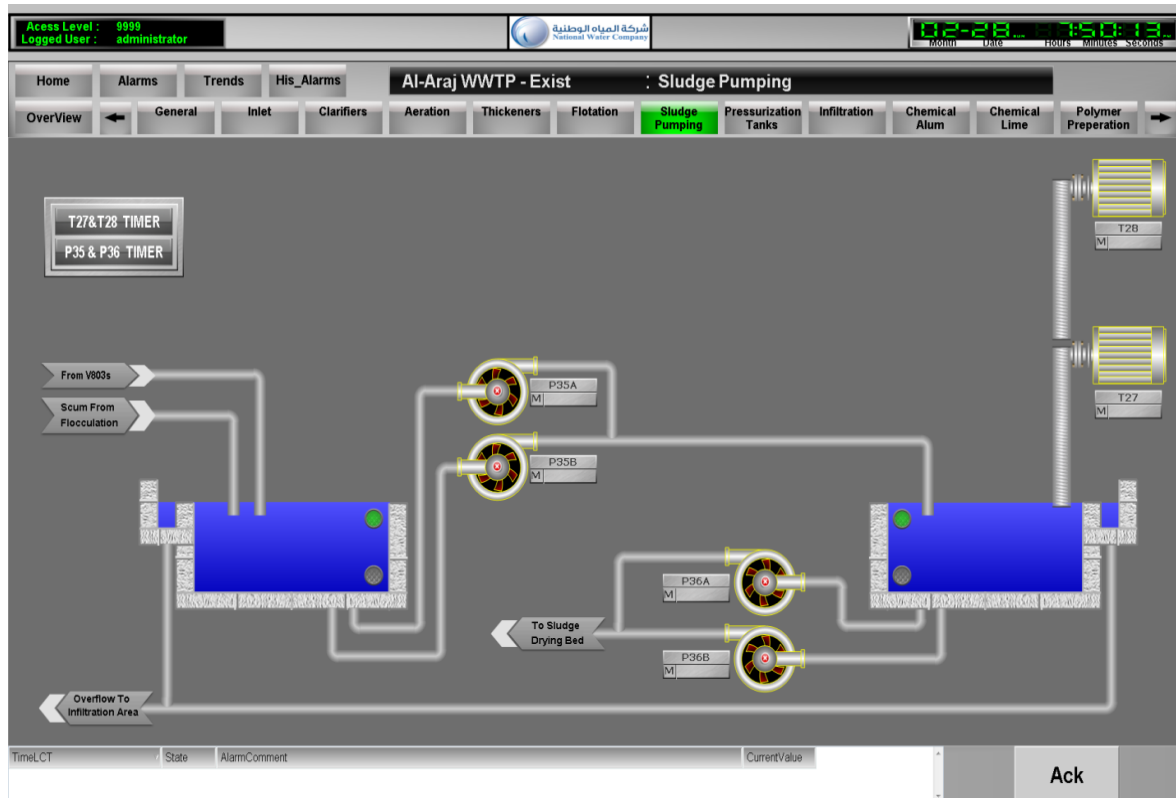
This section includes the following:

- 6 no's of Flootation tanks.
- 8 no's of conveyor belts.



▪ Al araj WWTP-exist sludge pumping screen.

By clicking the Sludge button from header of al araj, user will get sludge section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, level & etc. Below screens indicated the sludge pumping section.



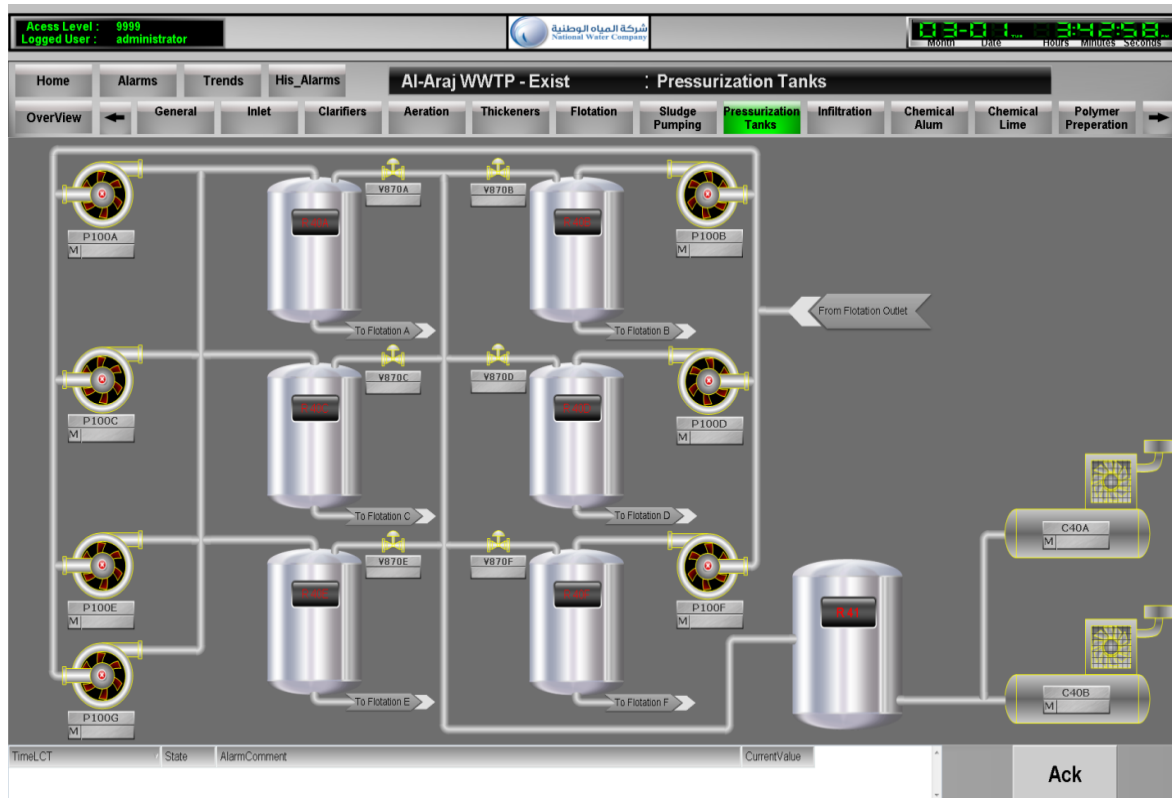
This section includes the following:

- 4 no's of Sludge Pumps.
- 2 no's of pumps.
- 2 no's of tanks with 4 no's of level switches.



■ Al araj WWTP-exist pressurization tank screen.

By clicking the pressurization tank button from header of al araj, user will get pressurization tank section of existing al araj wwtp. Here user only for monitoring and control all device such as pump & tank. Below screens indicated the pressurization tank section.

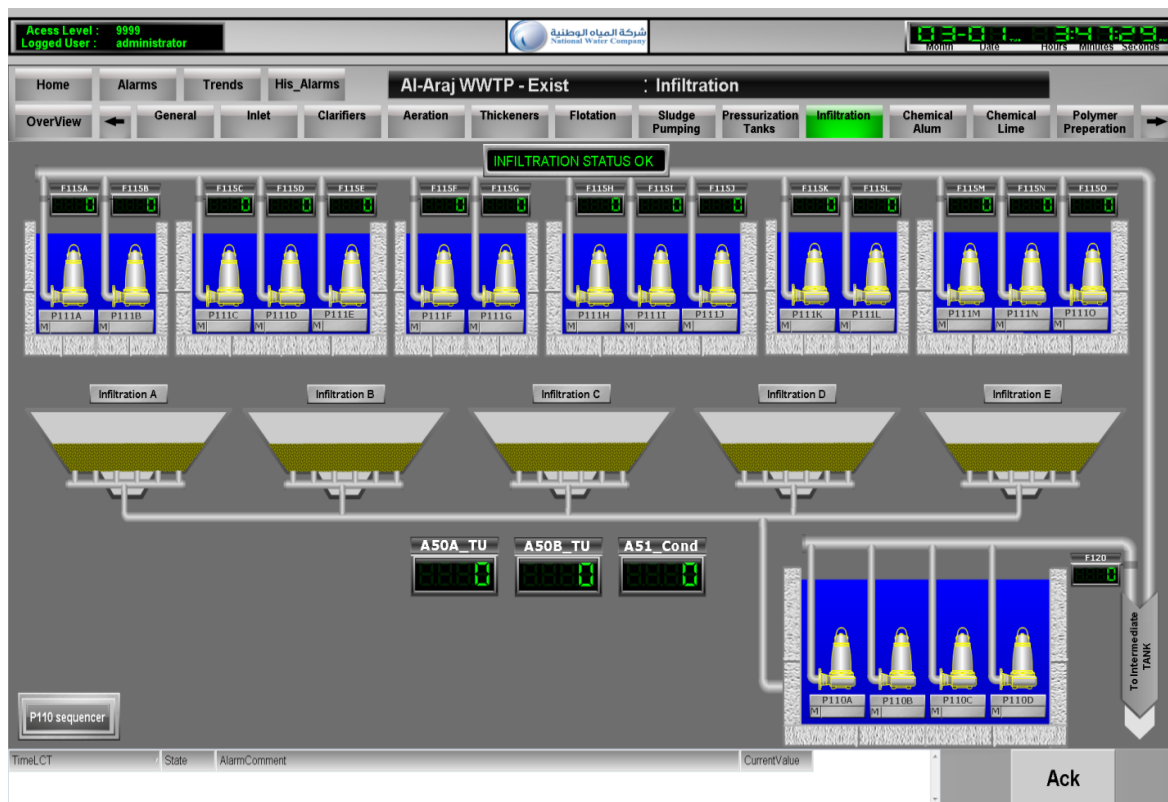


This section includes the following:

- 7 no's of Pressurization Pumps.
- 7 no's of Pressurization tanks.

■ Al araj WWTP-exist infiltration screen.

By clicking the infiltration button from header of al araj, user will get infiltration section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, tanks & etc. Below screens indicated the infiltration section.

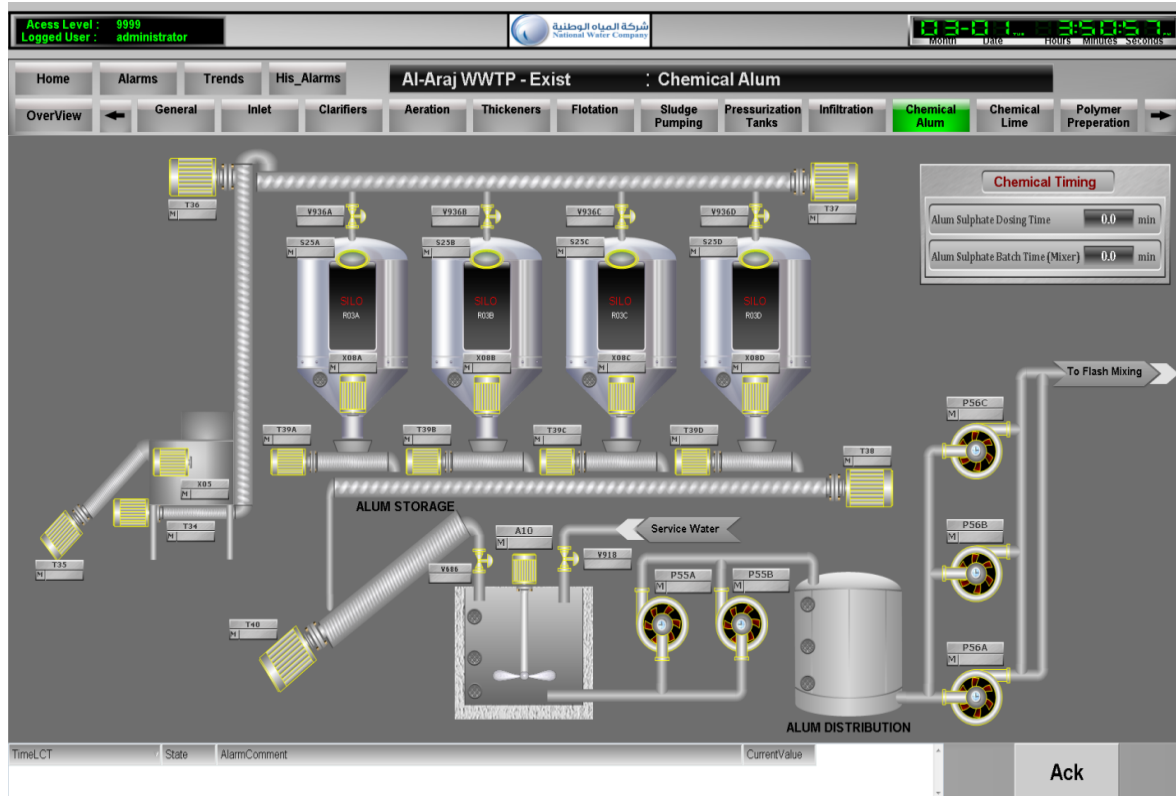


This section includes the following:

- 5 no's of Infiltration Tanks.
- 15 no's of infiltration pumps.
- 4 no's of pumps.

■ Al araj WWTP-exist chemical alum Screen.

By clicking the chemical button from header of al araj, user will get chemical section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, mixer & etc. Below screens indicated the chemical section.

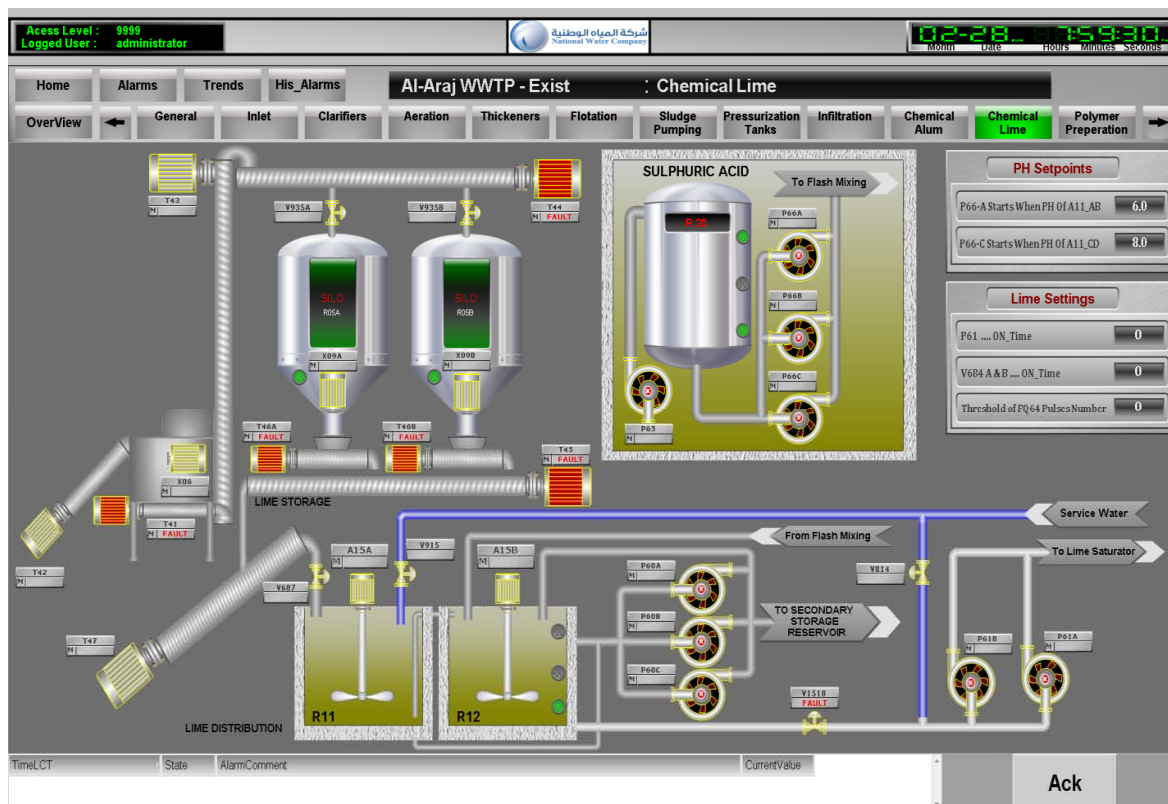


This section includes the following:

- 4 no's of Sludge Tanks with 4 mixers
- 2 no's of screens.
- 5 no's of pumps.

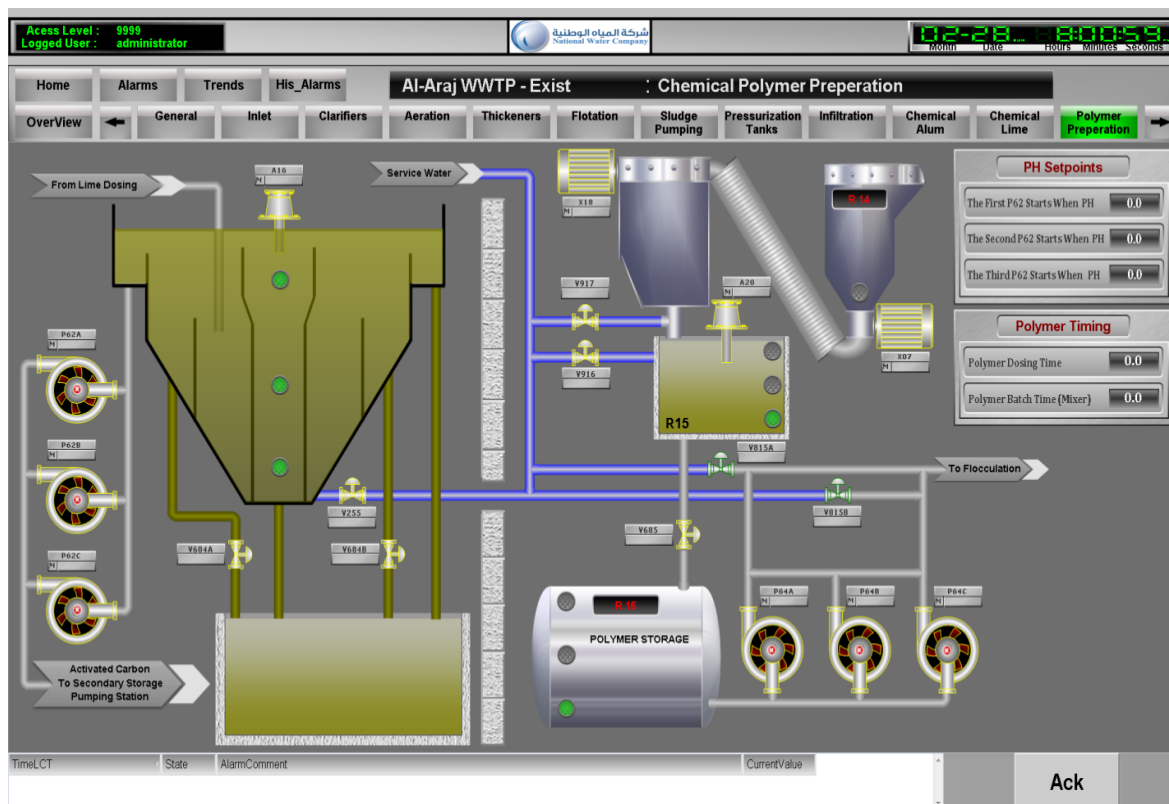
▪ Al araj WWTP-exist chemical lime Screen .

By clicking the lime button from header of al araj, user will get lime section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, mixer, valve & etc. Below screens indicated the lime section.



■ Al araj WWTP-exist chemical polymer preparation Screen.

By clicking the polymer button from header of al araj, user will get polymer section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, mixer, valve & etc. Below screens indicated the polymer section.

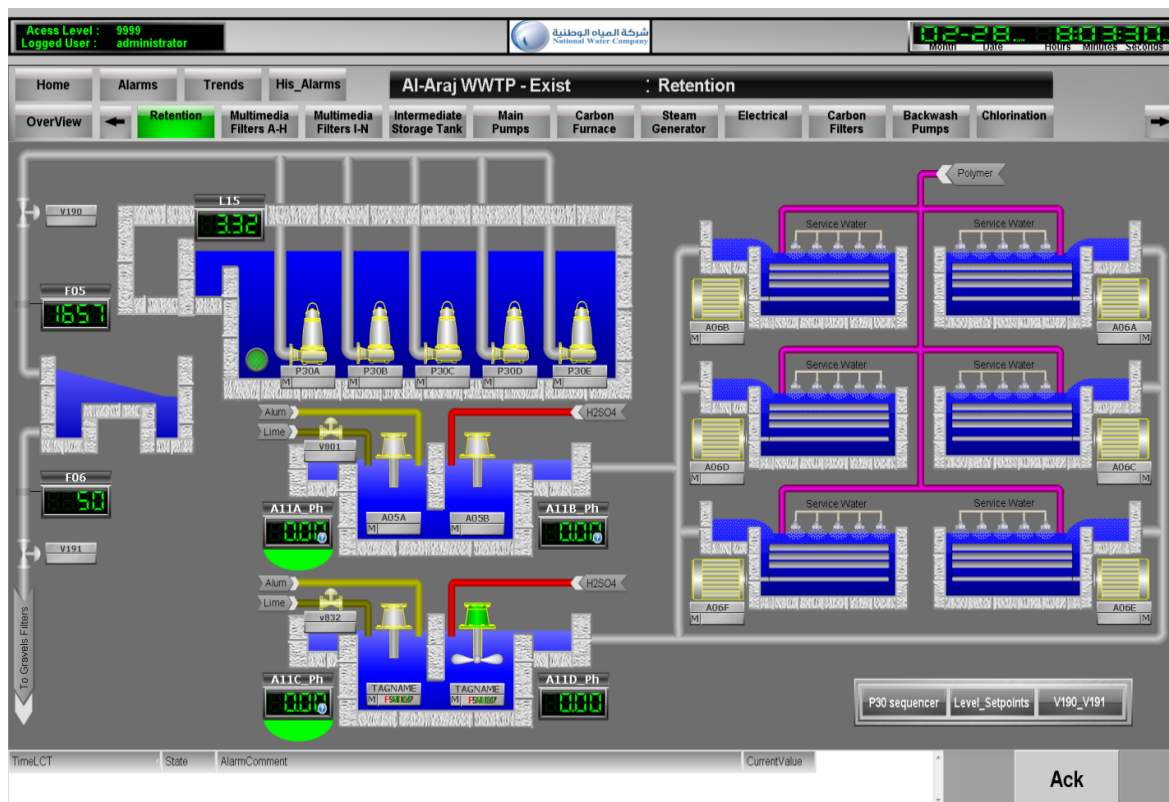


This section includes the following:

- 2 no's of Sludge Tanks with 2 mixers
- 2 no's of aerators.
- 6 no's of valves.

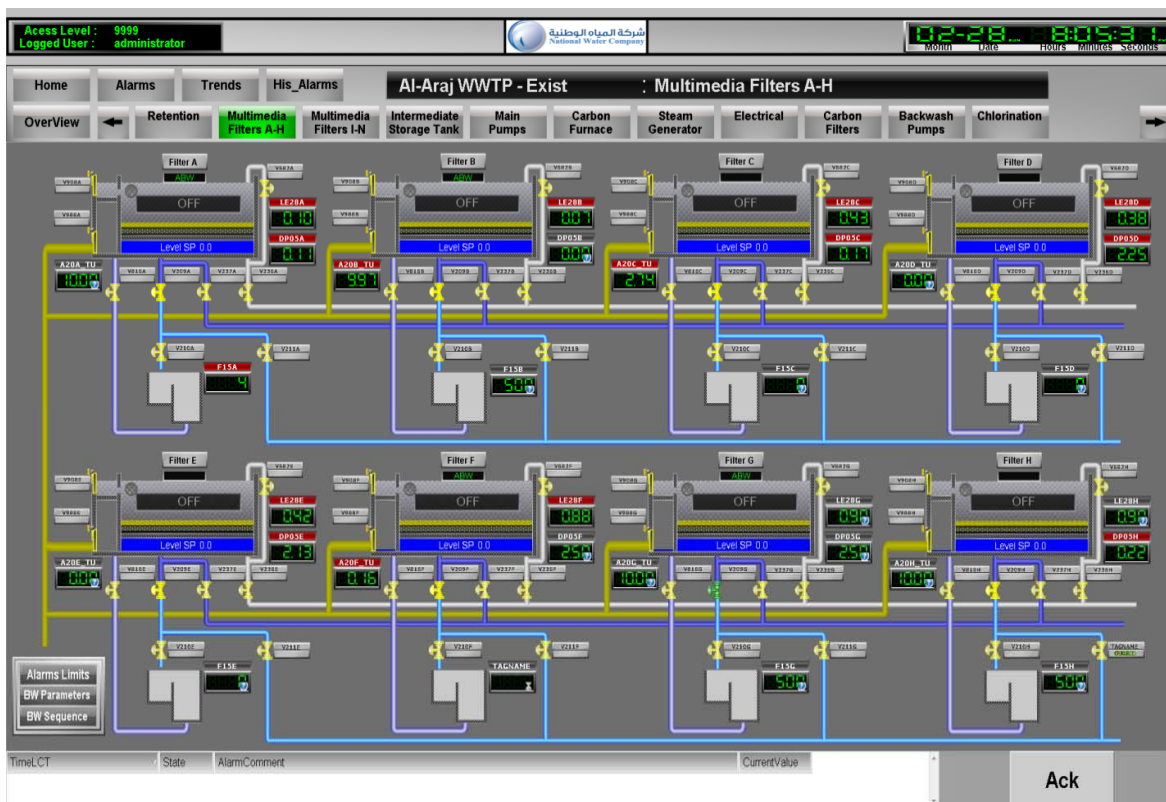
■ Al araj WWTP-exist retenion Screen.

By clicking the retation button from header of al araj, user will get retation section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, valve & etc. Below screens indicated the retation section.



■ Al araj WWTP-exist multimedia filters A-H Screen.

By clicking the filter a-h button from header of al araj, user will get filter section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, valve & etc. Below screens indicated the Filter A-H section.



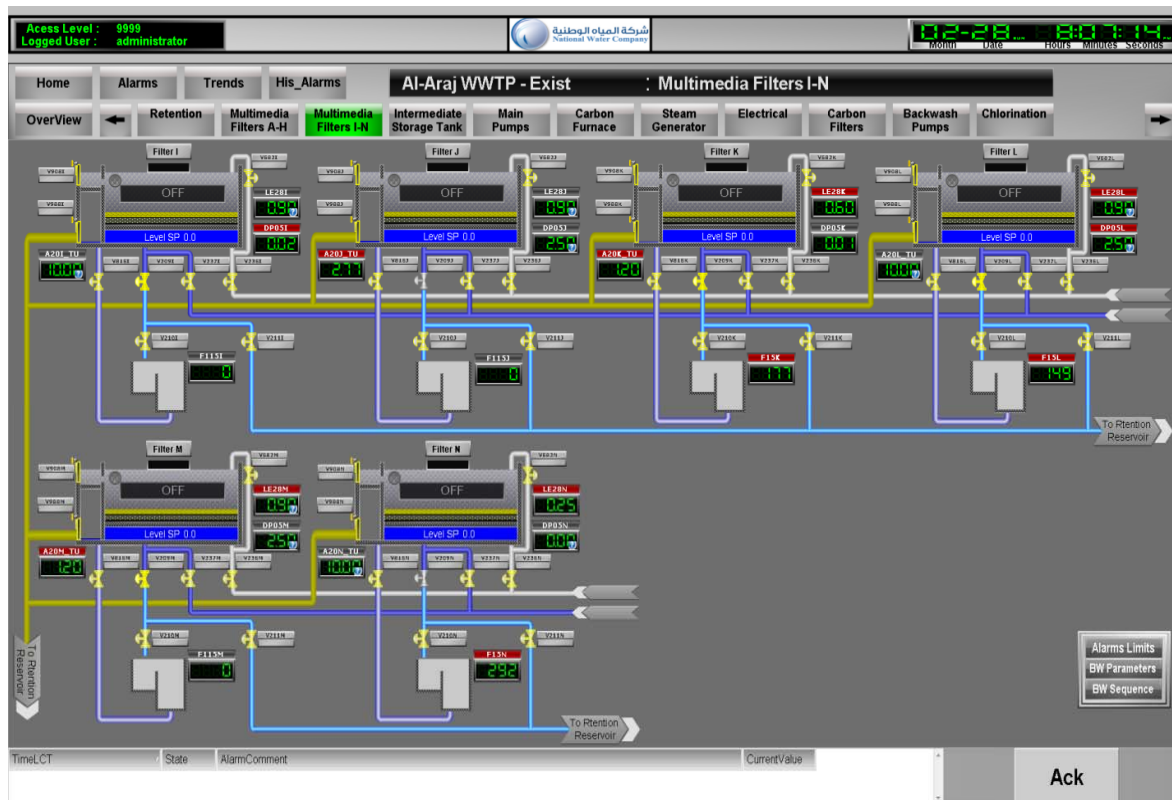
This section includes the following:

- 5 no's of Submersible pumps
- 2 no's of valves.
- 4 no's of aerators.
- 6 no's of pumps.



▪ Al araj WWTP-exist multimedia filters I-N Screen.

By clicking the filter I-N button from header of al araj, user will get filter section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, filter, valve & etc. Below screens indicated the Filter I-N section.

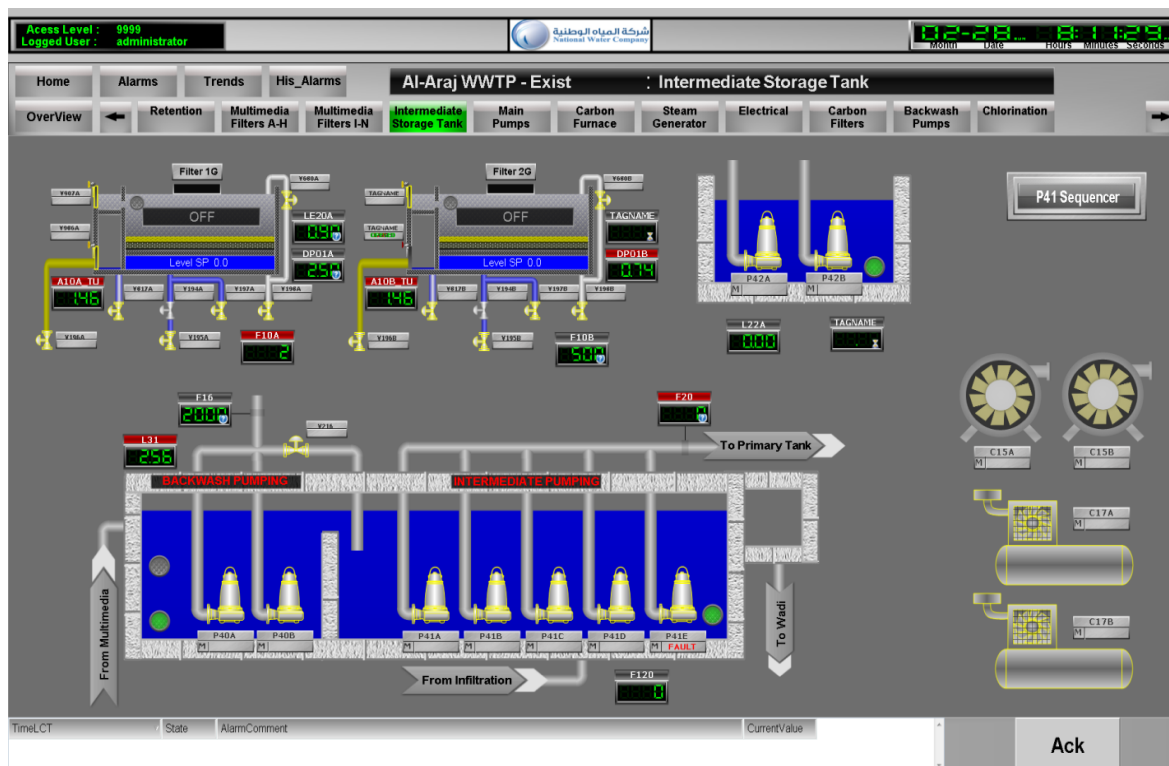


This section includes the following:

- 42 no's of valves.
- 6 no's of Filters.

▪ Al araj WWTP-exist Intermediate storage tank screen .

By clicking the intermediate storage button from header of al araj, user will get intermediate storage tank section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, valve & etc. Below screens indicated the intermediate storage tank section.



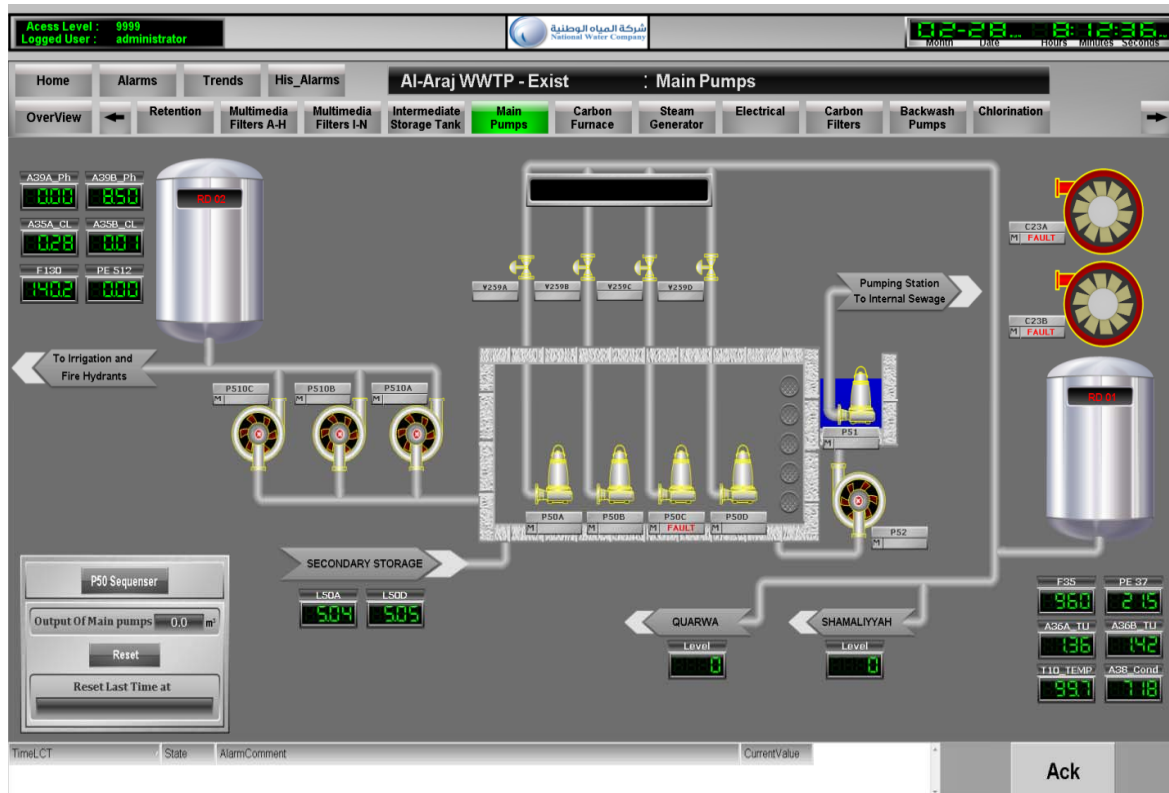
This section includes the following:

- 15 no's of valves.
- 2 no's of Filters.
- 3 no's of Level switches.
- 9 no's of Pumps.



■ Al araj WWTP-exist main pump Screen.

By clicking the main pump button from header of al araj, user will get main pumping section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, level & etc. Below screens indicated the main pumping section.



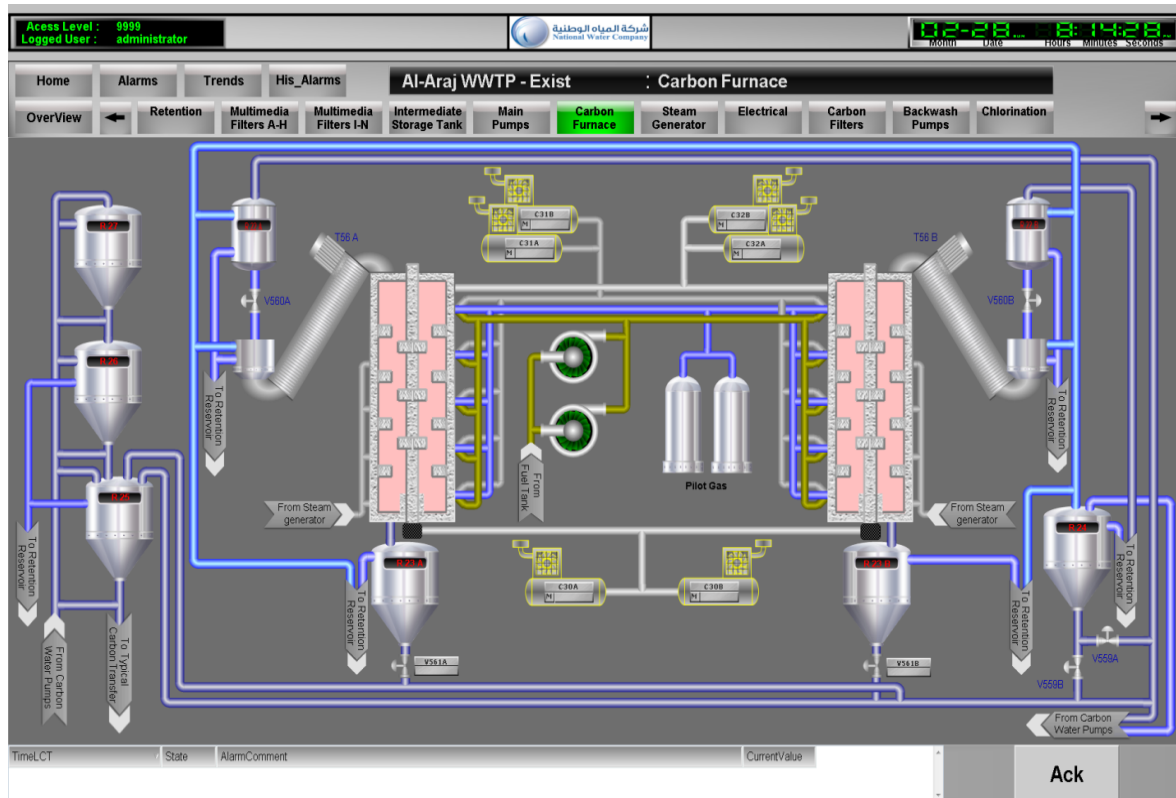
This section includes the following:

- 4 no's of valves.
- 4 no's of Submersible Pumps.
- 5 no's of Level switches.
- 3 no's of Pumps.



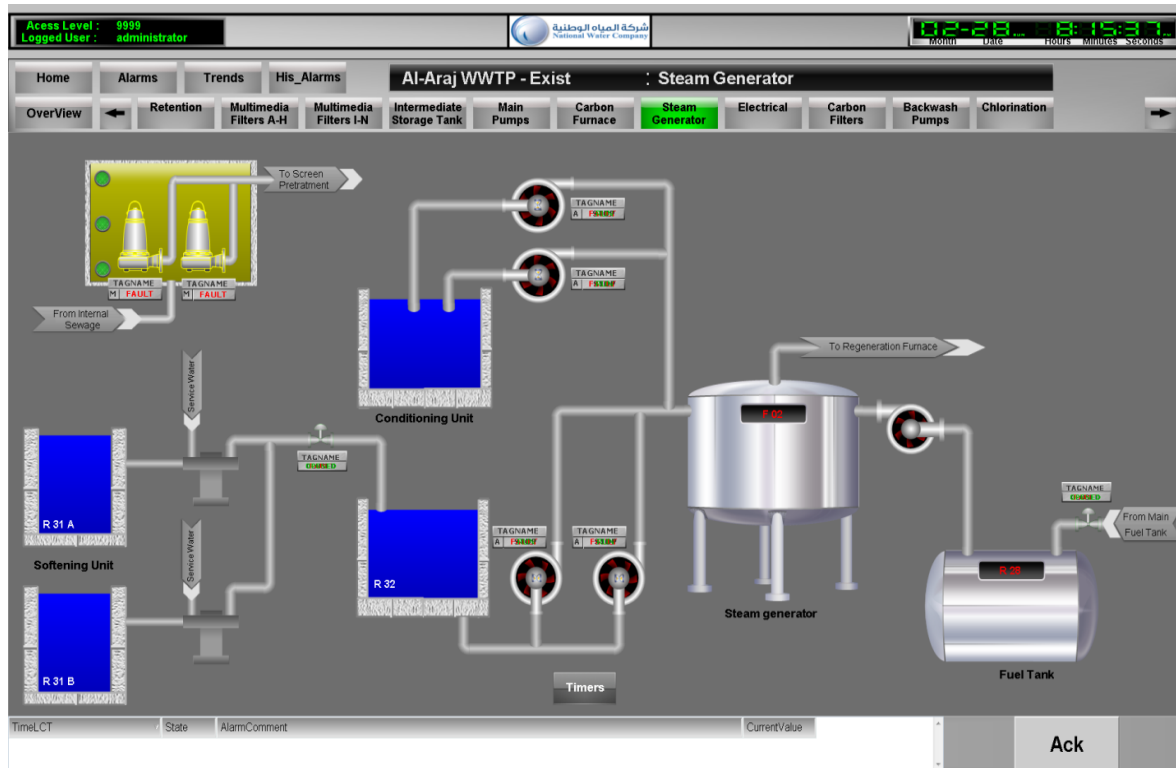
■ Al araj WWTP-exist carbon furnace Screen.

By clicking the carbon furnace button from header of al araj, user will get carbon furnace section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, valve & etc. Below screens indicated the carbon furnace section.



- Al araj WWTP-exist steam generator Screen.

By clicking the steam generator button from header of al araj, user will get steam generator section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, level & etc. Below screens indicated the steam generator section.



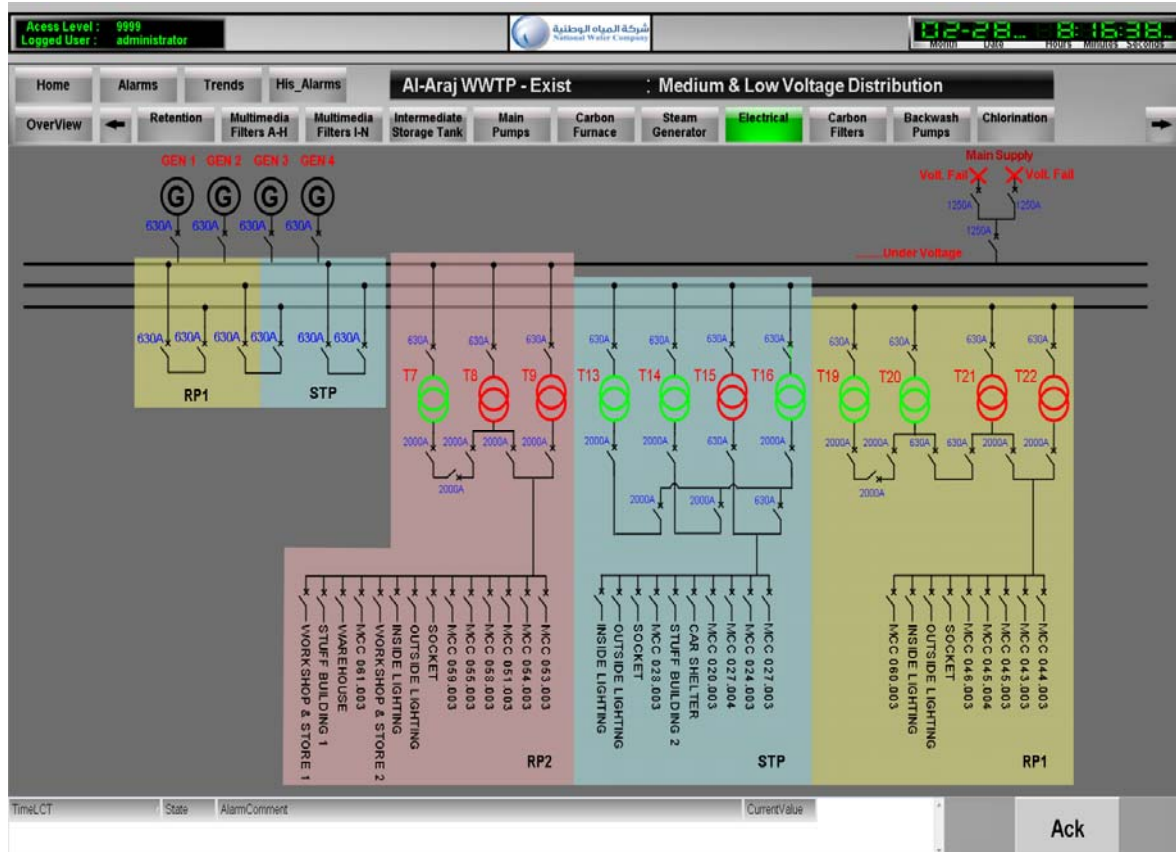
This section includes the following:

- 5 no's of Pumps.
- 2 no's of Submersible Pumps.
- 3 no's of Level switches.



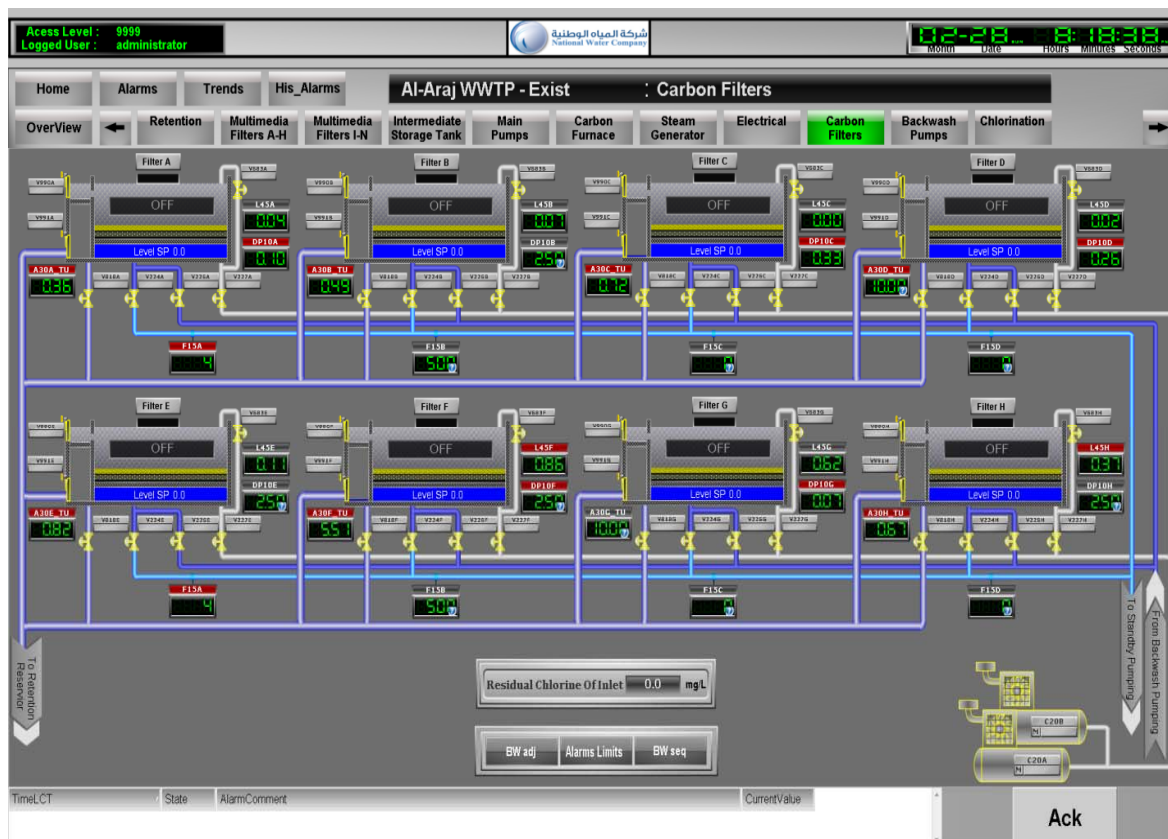
- Al araj WWTP-exist medium low voltage distribution screen.

By clicking the electrical button from header of al araj, user will get electrical section of existing al araj wwtp. Here user only for monitoring and control all device. Below screens indicated the elctrical section.



■ Al araj WWTP-exist carbon filter screen.

By clicking the carbon filter button from header of al araj, user will get carbon filter section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, Filters, valve & etc. Below screens indicated the carbon Filter section.



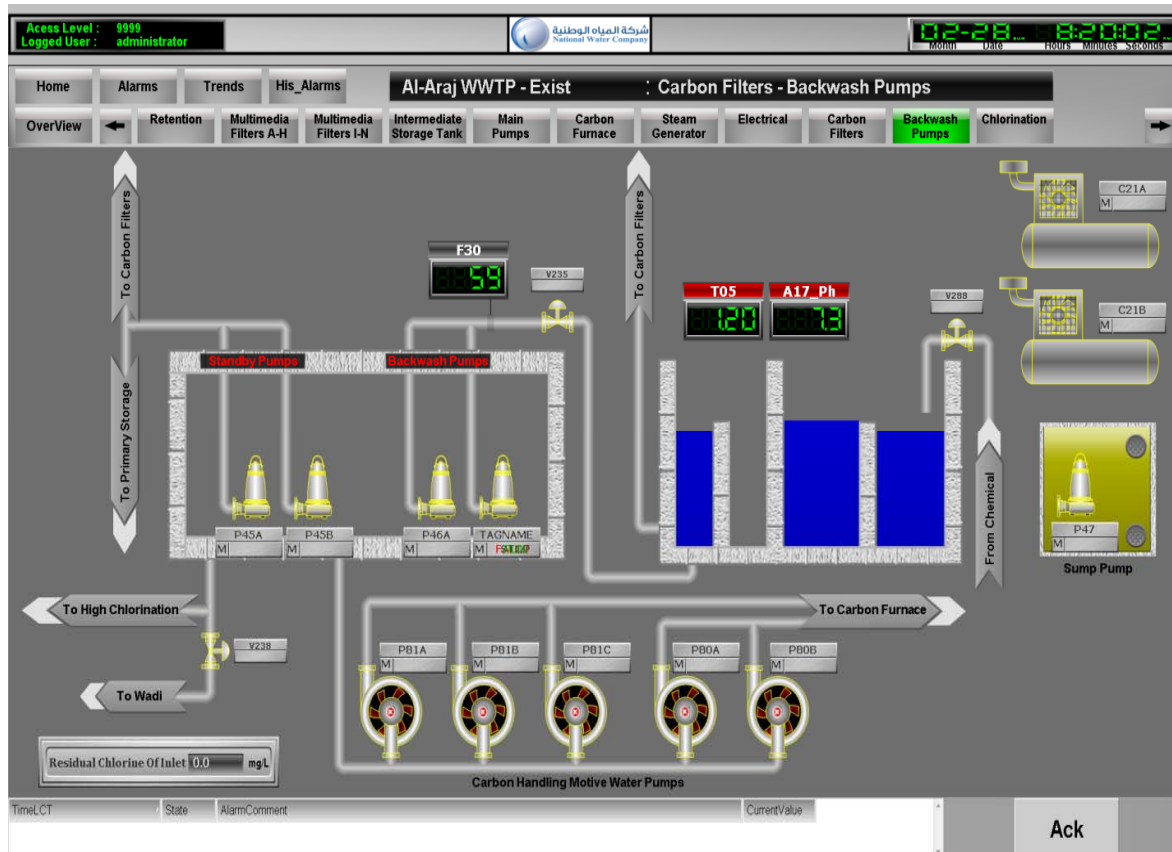
This section includes the following:

- 8 no's of Filters.
- 40 no's of Valves.



▪ Al araj WWTP-exist backwash pumps screen.

By clicking the backwash pump button from header of al araj, user will get backwash pumping section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, valve & etc. Below screens indicated the Filter A-H section.



This section includes the following:

- 5 no's of Pumps.
- 4 no's of Submersible Pumps.
- 1 no's of Sump Pump.
- 2 no's of valves.



■ Al araj WWTP-exist chlorination screen.

By clicking the chlorination button from header of al araj, user will get chlorination section of existing al araj wwtp. Here user only for monitoring and control all device such as motor, pump, valve & etc. Below screens indicated the chlorination section.



This section includes the following:

- 5 no's of Pumps.

10) Al- Araj New WWTP

After the clicking the Al-Araj WWTP section button user will get the map. Al-Araj Existing or New can be selected from the site . In this section we will see Al-Araj new section.

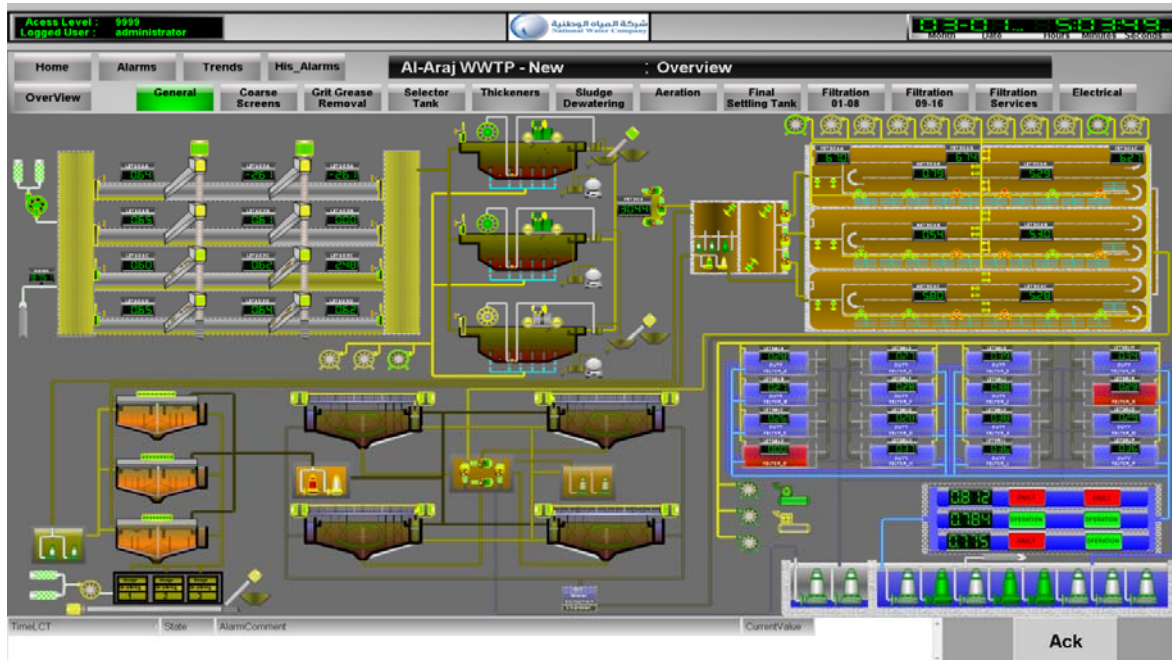


The New section can be selected clicking on the New site location.



▪ New Al araj WWRP General screen .

After the clicking New button user will get new section of al araj header.by default general overview screen will display. Here user only for monitoring and control the all device. Below screens indicated the general overview of al araj new section.



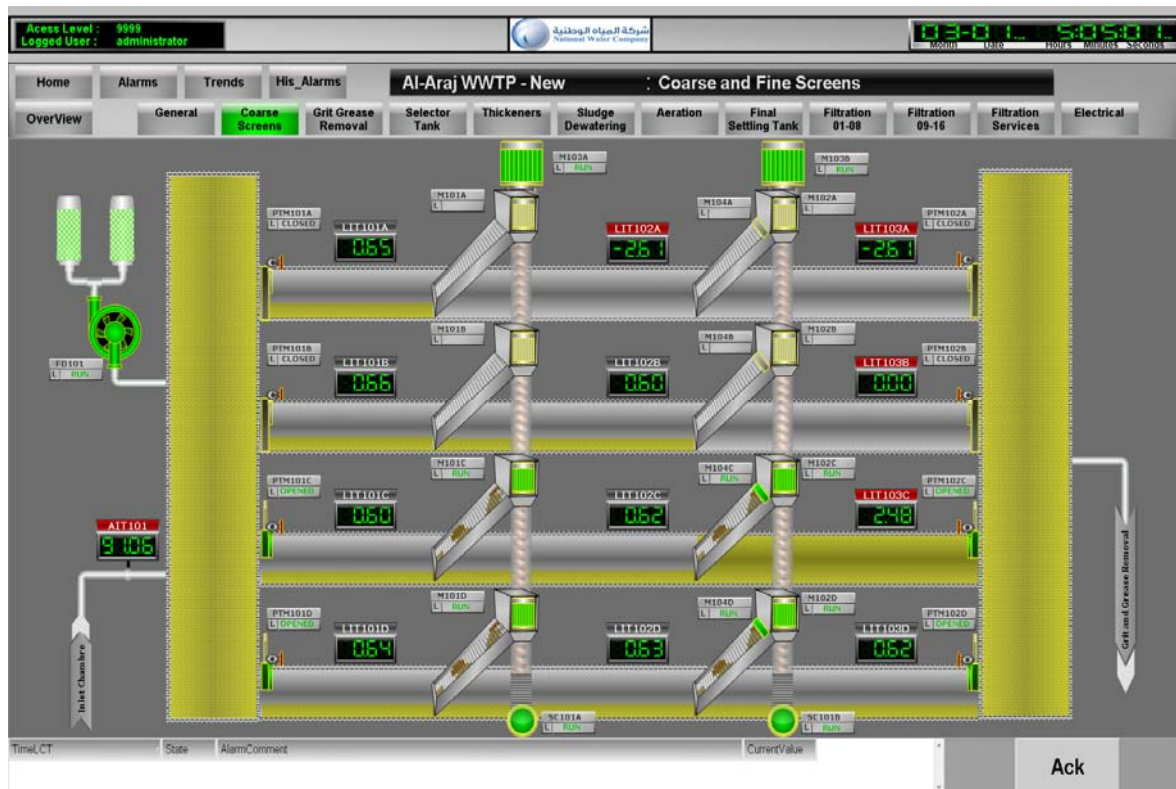
This section displays the overview of the entire Al Araj new WWRP section. All the individual sections are shown in the following pages. The sections consists of :

- Coarse Screens
- Grit Grease removal
- Selector Tank
- Thickeners
- Sludge Dewatering.
- Aeration.
- Final settling tank.
- Filtration 01-08.
- Filtration 09-16.
- Filtration services.



▪ New Alaraj WWRP Coarse screens page .

By clicking the Coarse button from header of al araj, user will get coarse screen section of new al araj wwtp. Here user only for monitoring and control all device such as pump, screens & etc. Below screens indicated the Coarse section.

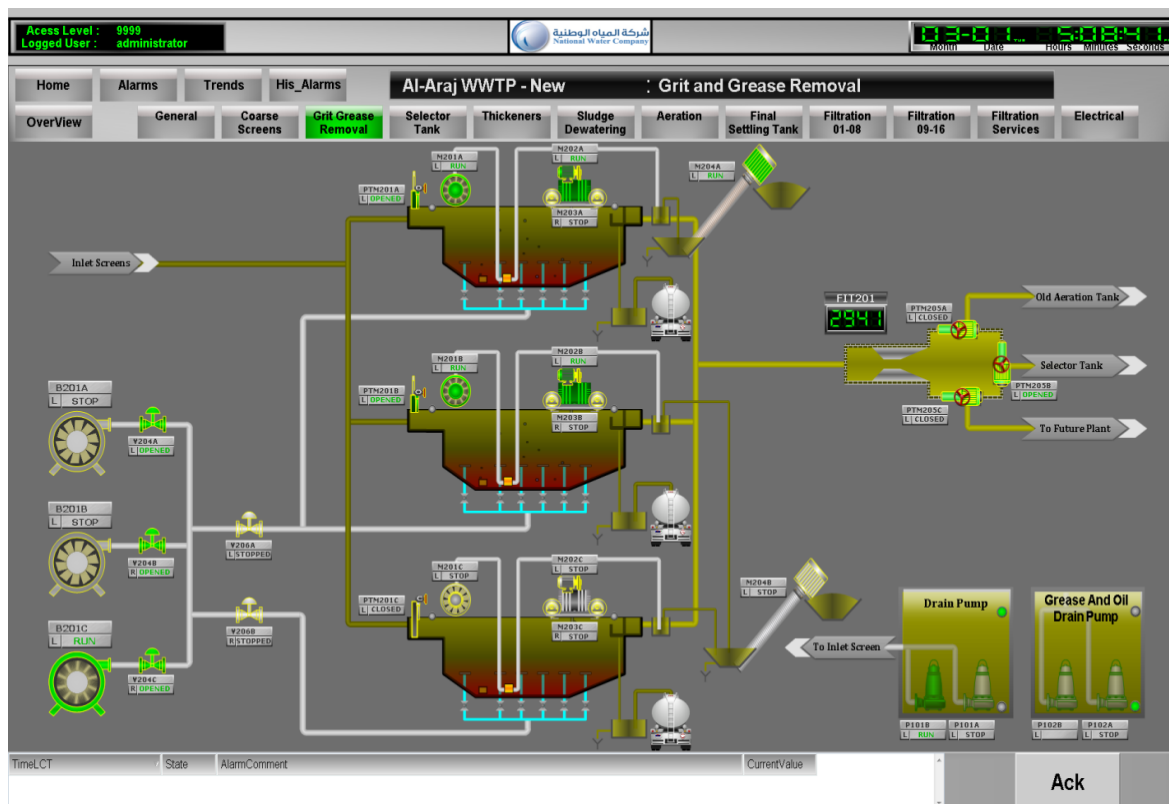


This section includes the following:

- 6 no's of coarse screens.
- 1 no's of pump.

▪ New Alaraj WWRP grit and grease removal screen.

By clicking the Grit & Grease removal button from header of al araj, user will grite & grease removal screen section of new al araj wwtp. Here user only for monitoring and control all device such as pump, valves & etc. Below screens indicated the grite&grease section.



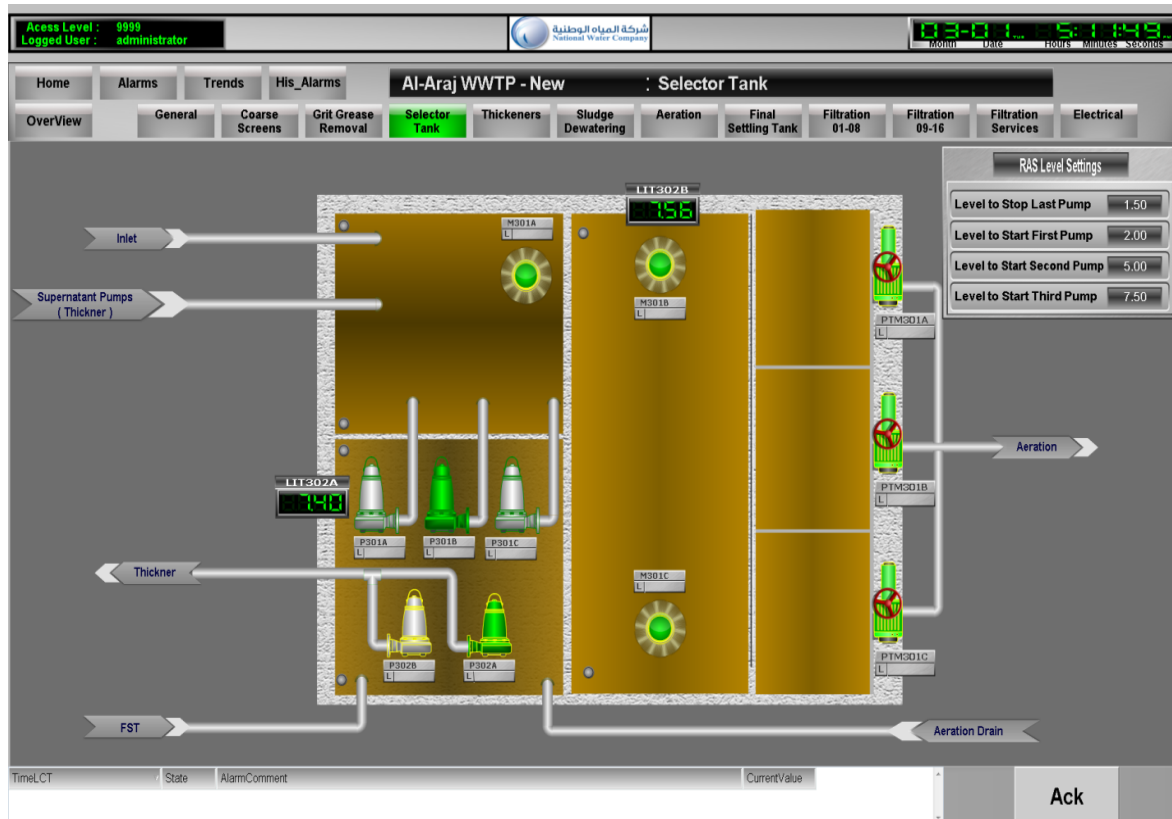
This section includes the following:

- 3 no's of inlet pumps.
- 5 no's of Valves.
- 6 no's of grit removal pumps.
- 2 no's of drain pumps.
- 2 no's of grease and oil drain pumps.
- 2 no's of conveyor belts.



▪ New Alaraj WWRP selector tank screen.

By clicking the selector tank button from header of al araj, user will get selecto tank section of new al araj wwtp. Here users only for monitoring and control all devices such as pump valves & etc. Below screens indicated the selector tank section.



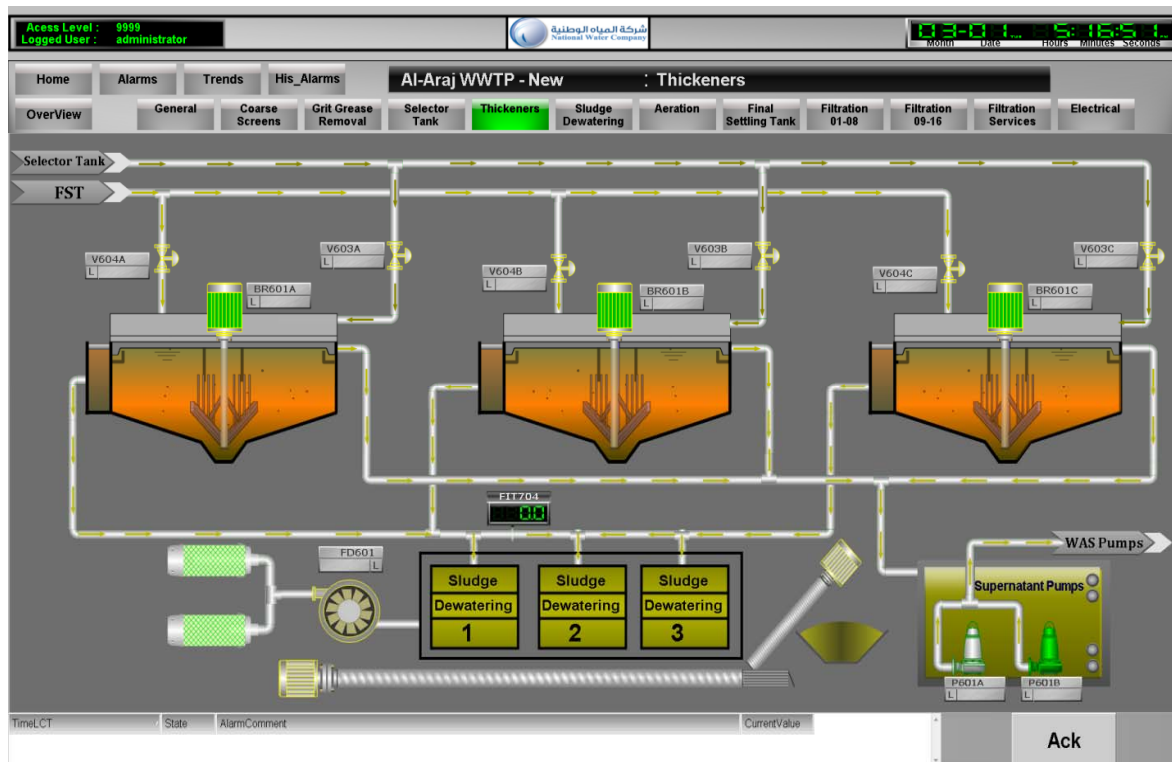
This section includes the following:

- 3 no's of mixers.
- 5 no's of Submersible pumps.
- 3 no's of Outlet valves.



▪ New Alaraj WWRP thickeners screen.

By clicking the thickener button from header of al araj, user will get thickener screen section of new al araj wwtp. Here user only for monitoring and control all device such as pump, belts & etc. Below screens indicated the thickener section.

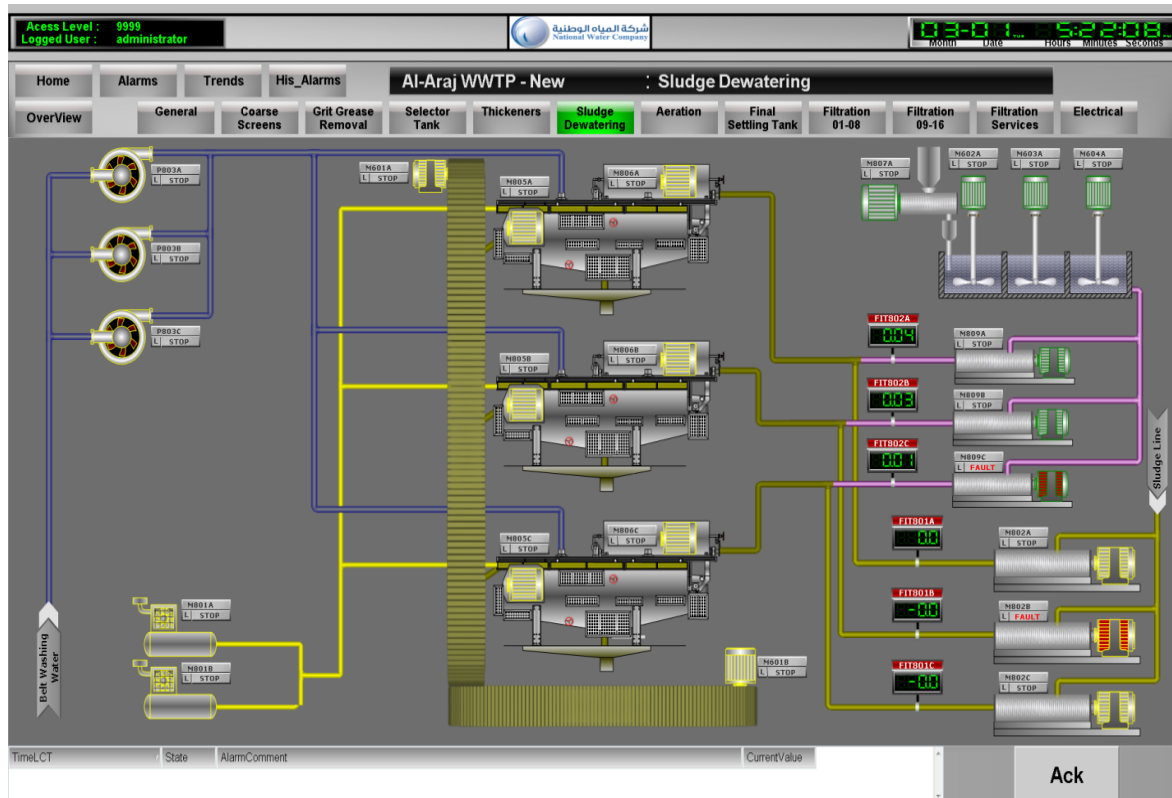


This section includes the following:

- 3 no's of thickeners.
- 1 no's of pump.
- 2 no's of super natant pumps.
- 1 no's of conveyor belts.

▪ New Alaraj WWRP sludge dewatering screen

By clicking the sludge dewatering button from header of al araj, user will get sludge dewatering section of new al araj wwtp. Here user only for monitoring and control all device such as pump, belts & etc. Below screens indicated the sludge dewatering section.



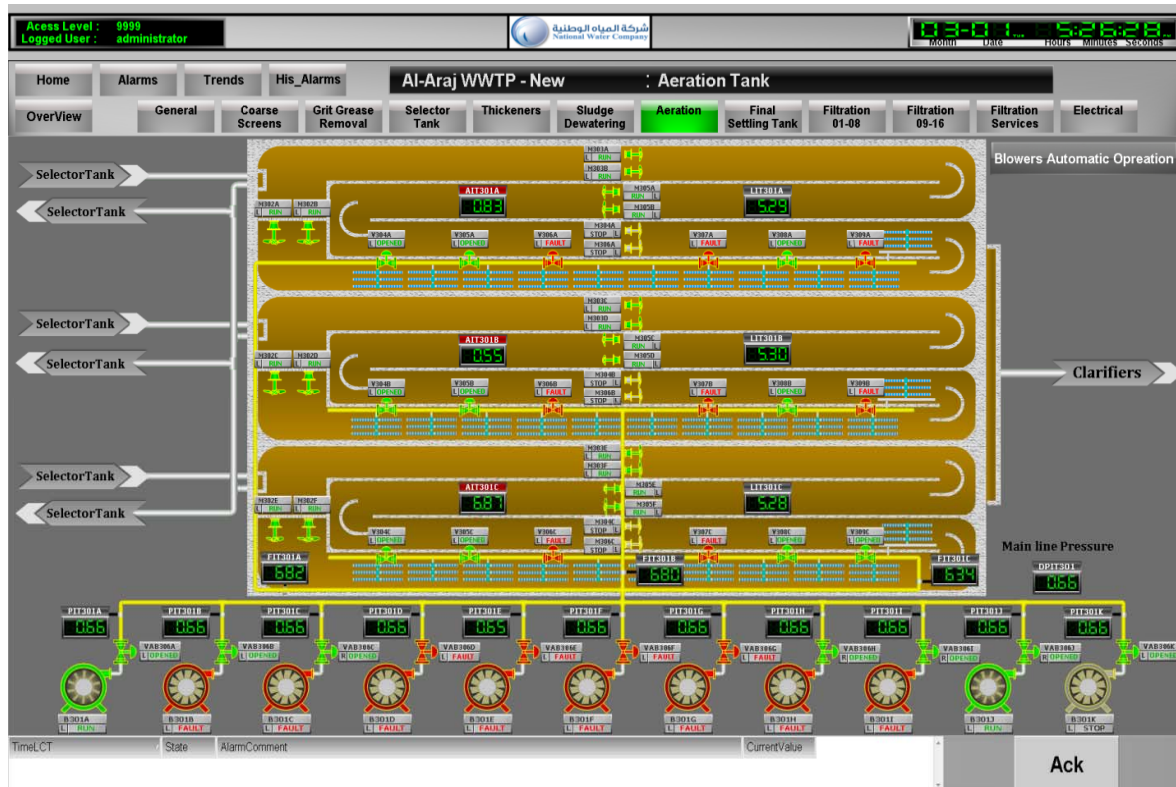
This section includes the following:

- 3 no's of inlet pumps.
- 4 no's of mixing pumps.
- 6 no's of sludge dewatering pumps.
- 3 no's of outlet pumps.
- 3 no's of Sludge outlet pumps.
- 2 no's of conveyor belts.



■ New Alaraj WWRP aeration tank screen.

By clicking the aeration button from header of al araj, user will get aeration section of new al araj wwtp. Here user only for monitoring and control all device such as pump, screens & etc. Below screens indicated the aeration section.



This section includes the following:

- 11 no's of pumps.



▪ New Alaraj WWRP final settling tank screen.

By clicking the settling button from header of al araj, user will get coarse screen section of new al araj wwtp. Here user only for monitoring and control all device such as pump, screens & etc. Below screens indicated the settling section.

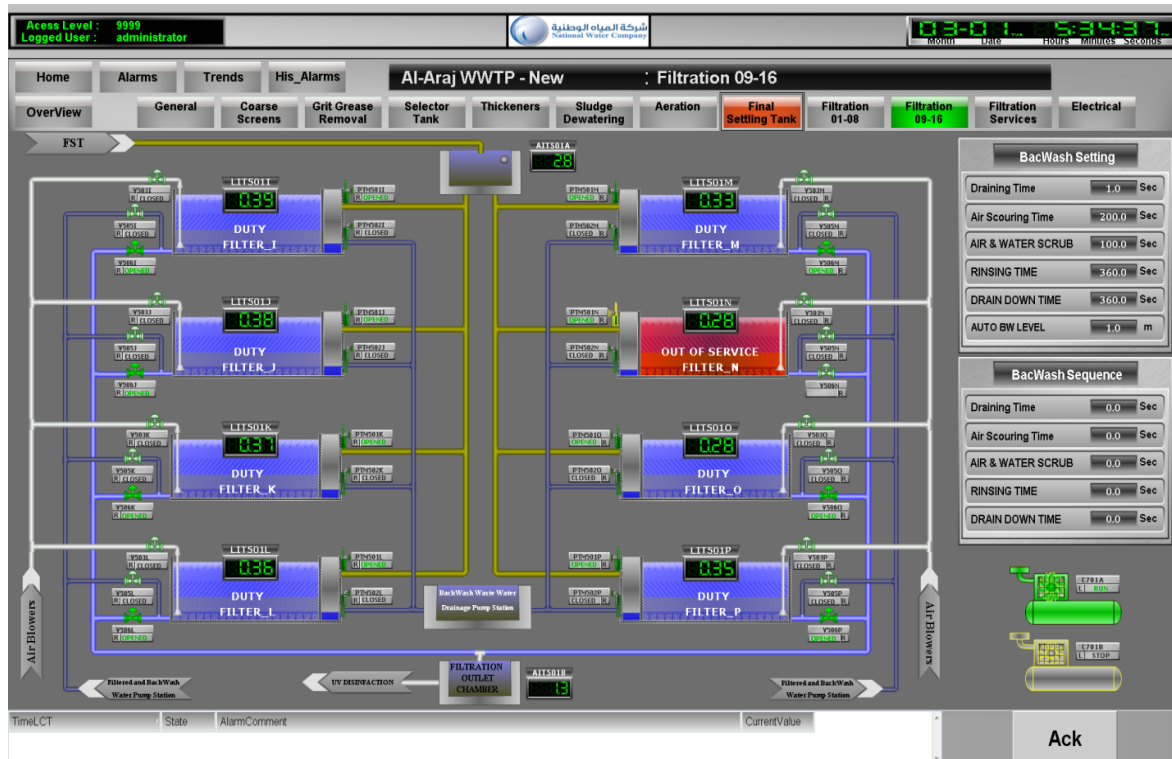


This section includes the following:

- 4 no's of Valves.
- 6 no's of settling motors.
- 2 no's of drain pumps.
- 2 no's of scum pumps.

■ New Alaraj WWRP filtration screen

By clicking the filtration button from header of al araj, user will get filtration section of new al araj wwtp. Here user only for monitoring and control all device such as valves. Below screens indicated the filtration section.

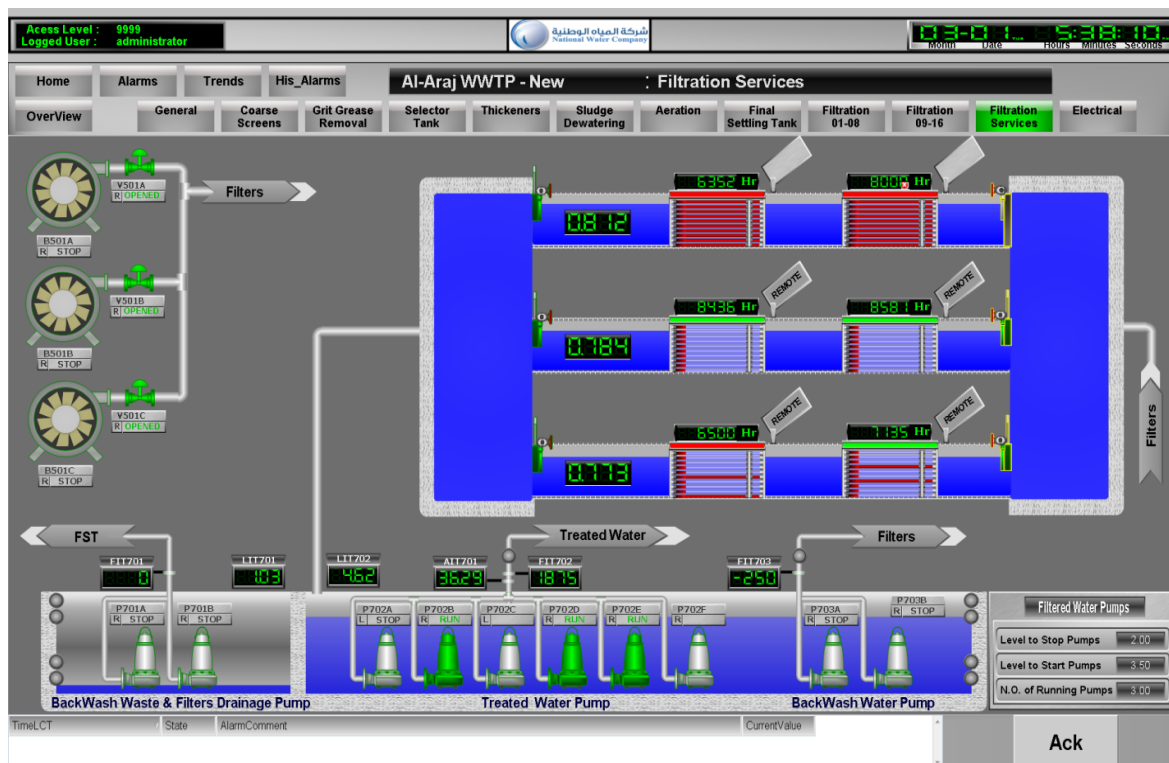


This section includes the following:

- 40 no's of Valves.

▪ New Alaraj WWRP filtration services Filtration services screen.

By clicking the Filtration service button from header of al araj, user will get filtration service screen section of new al araj wwtp. Here user only for monitoring and control all device such as pump, valves & etc. Below screens indicated the filtration section.

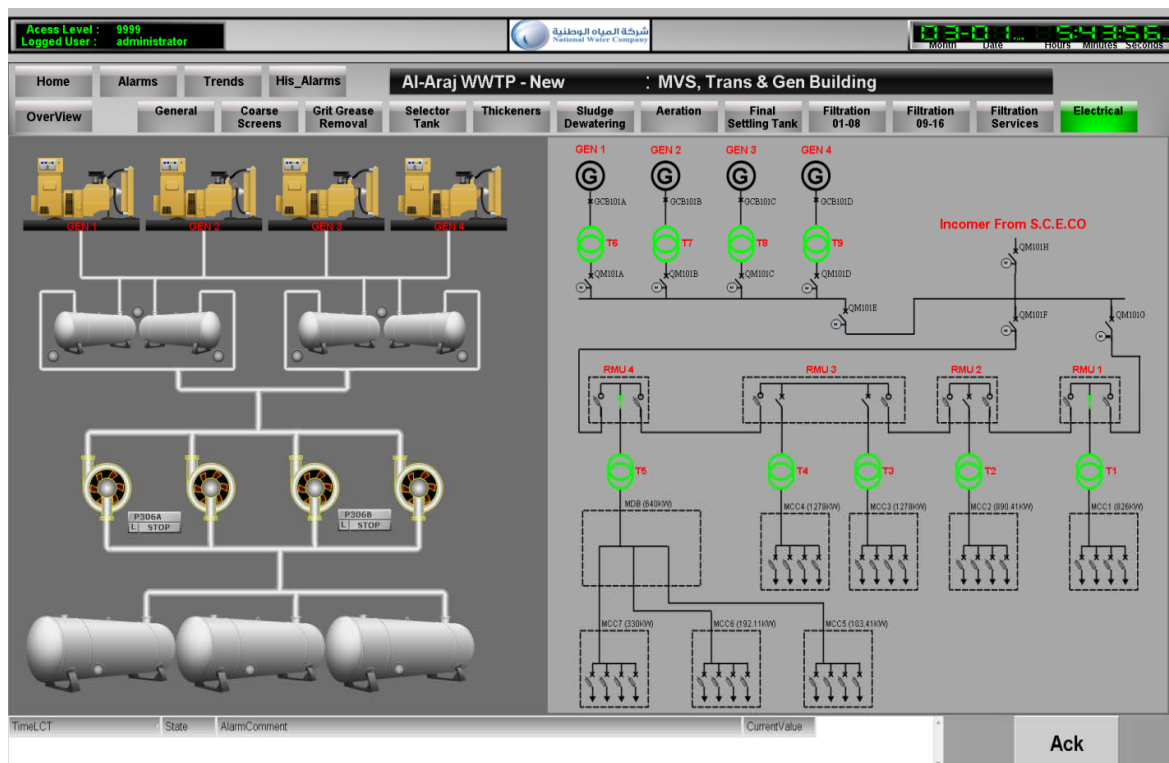


This section includes the following:

- 2 no's of backwash waste and filters drainage pumps.
- 3 no's of Valves.
- 6 no's of treated water pumps.
- 2 no's of backwash water pumps.
- 3 no's of inlet pumps.
- 6 no's of filter valves.

▪ New Alaraj WWRP electrical screen .

By clicking the electrical button from header of al araj, user will get electrical screen section of new al araj wwtp. Here user only for monitoring and control all device such as generator, pumps & etc. Below screens indicated the electrical section.



This section includes the following:

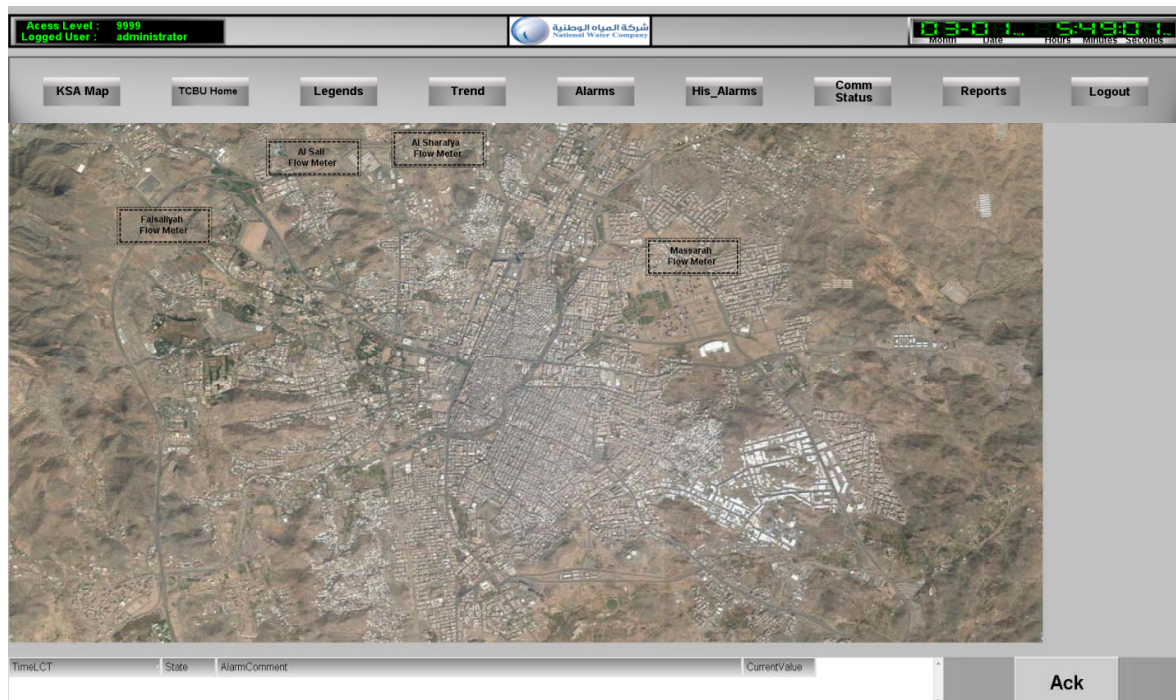
- 4 no's of generators.
- 4 no's of pumps.
- multiple breakers and incomers.

11) Flow Meters

After the clicking the Flow meters section button user will get the map. . In this section we will see Flow meter section.



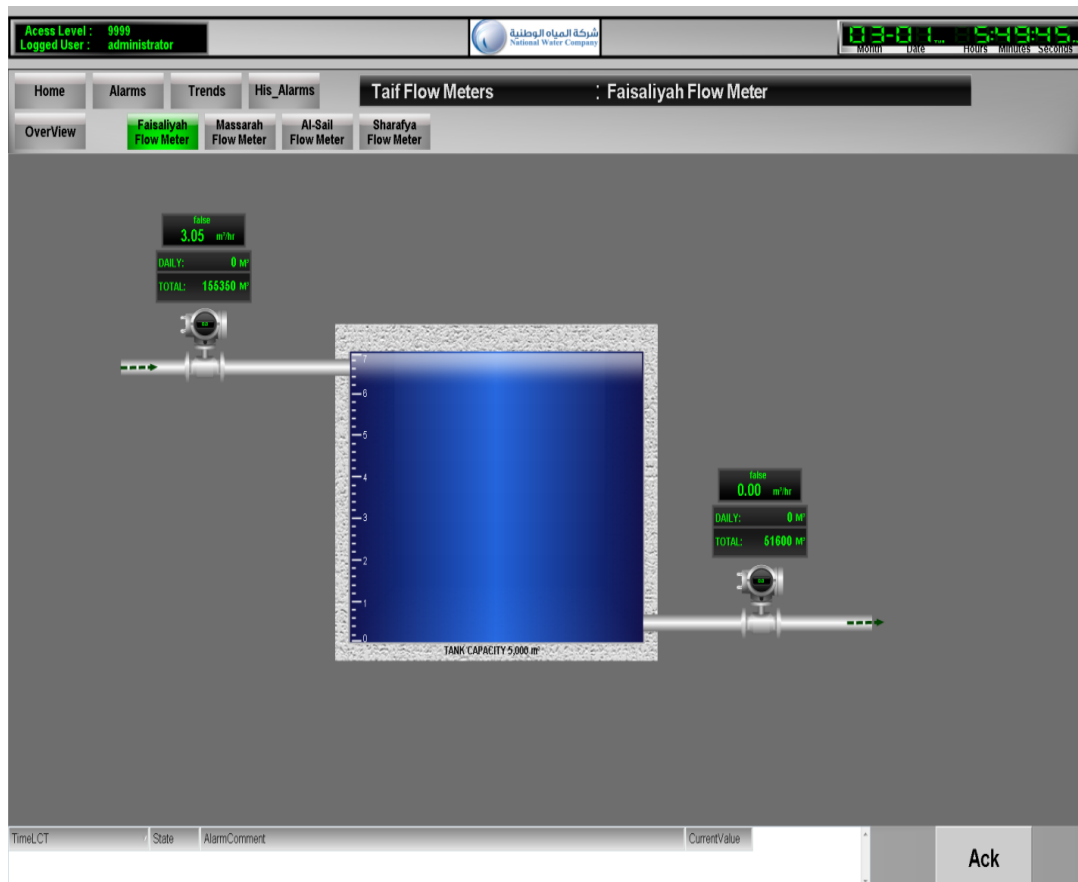
Flow meters on each site can be accessed by clicking on the respective site .





■ Faisaliyah Flow meter

After the clicking the Flow meters section button user will get the map. By clicking faisaliyah flow section user will get faisaliyah flow meter. below screen indicate the faisaliyah flow meter section.



This section includes the following:

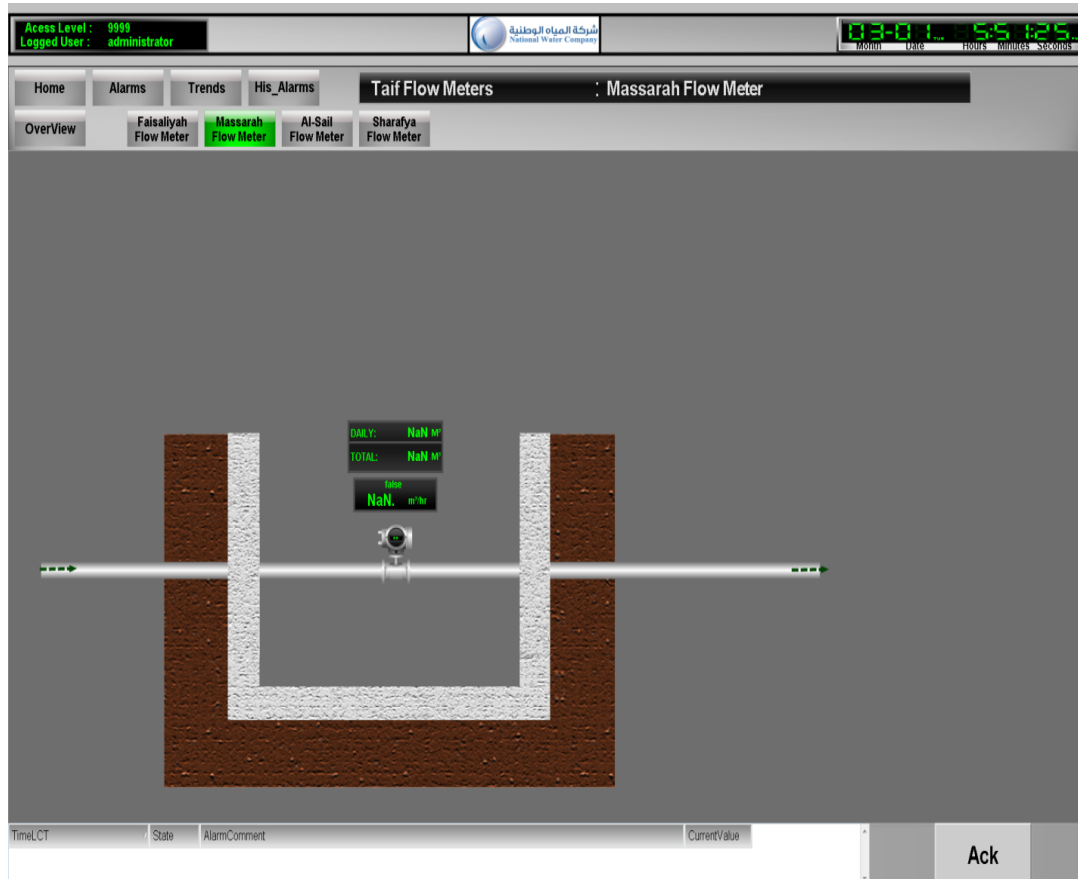
- 2 no's of Flow meters.

Here user can monitor the analog instruments such as Flow meter in meter. With totalizer and daily flow and flow rate. Also you can check the RTU status



■ Massarah Flow meter

After the clicking the Flow meters section button user will get the map. By clicking massarah flow section user will get massarah flow meter. below screen indicate the massarah flow meter section.



This section includes the following:

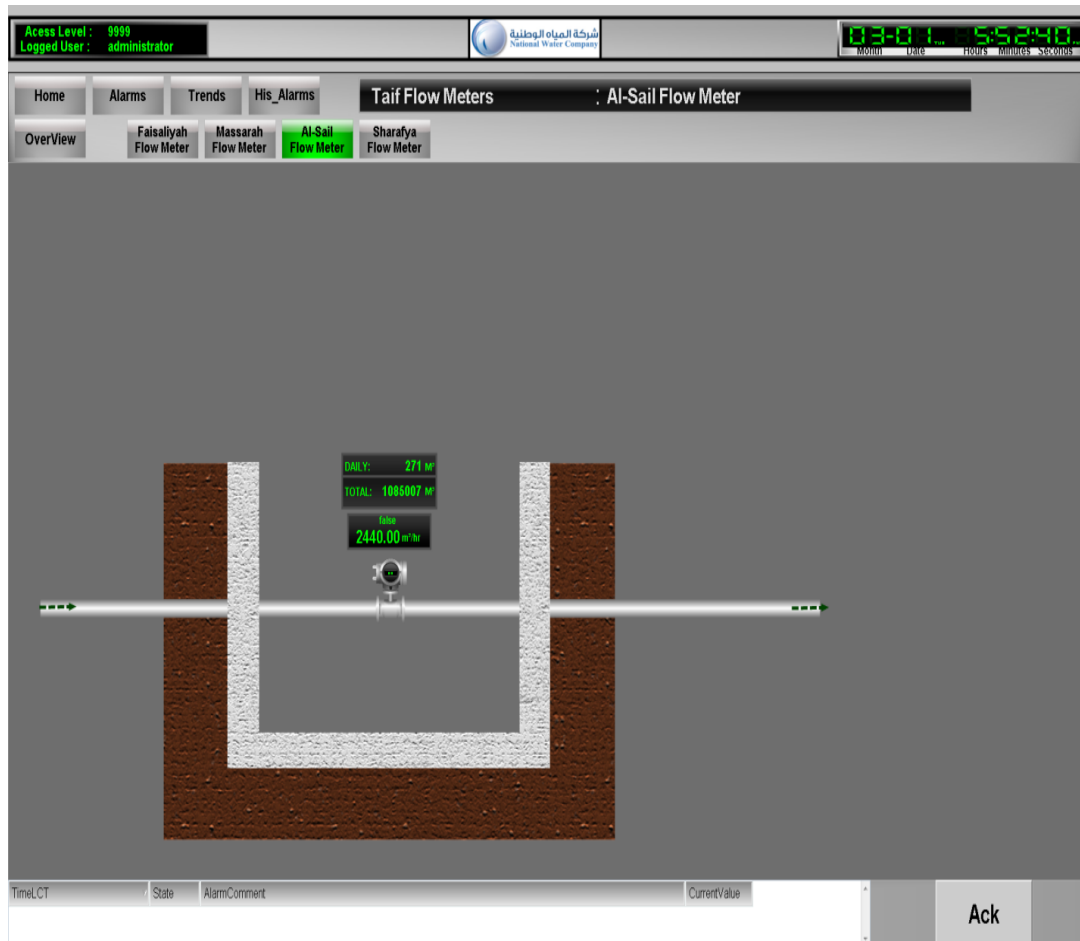
- 1 no's of Flow meters.

Here user can monitor the analog instruments such as Flow meter in meter. With totalizer and daily flow and flow rate. Also you can check the RTU status



▪ Al-Sail Flow meter

After the clicking the Flow meters section button user will get the map. By clicking al sail flow section user will get al sail flow meter. below screen indicate the al sail flow meter section.



This section includes the following:

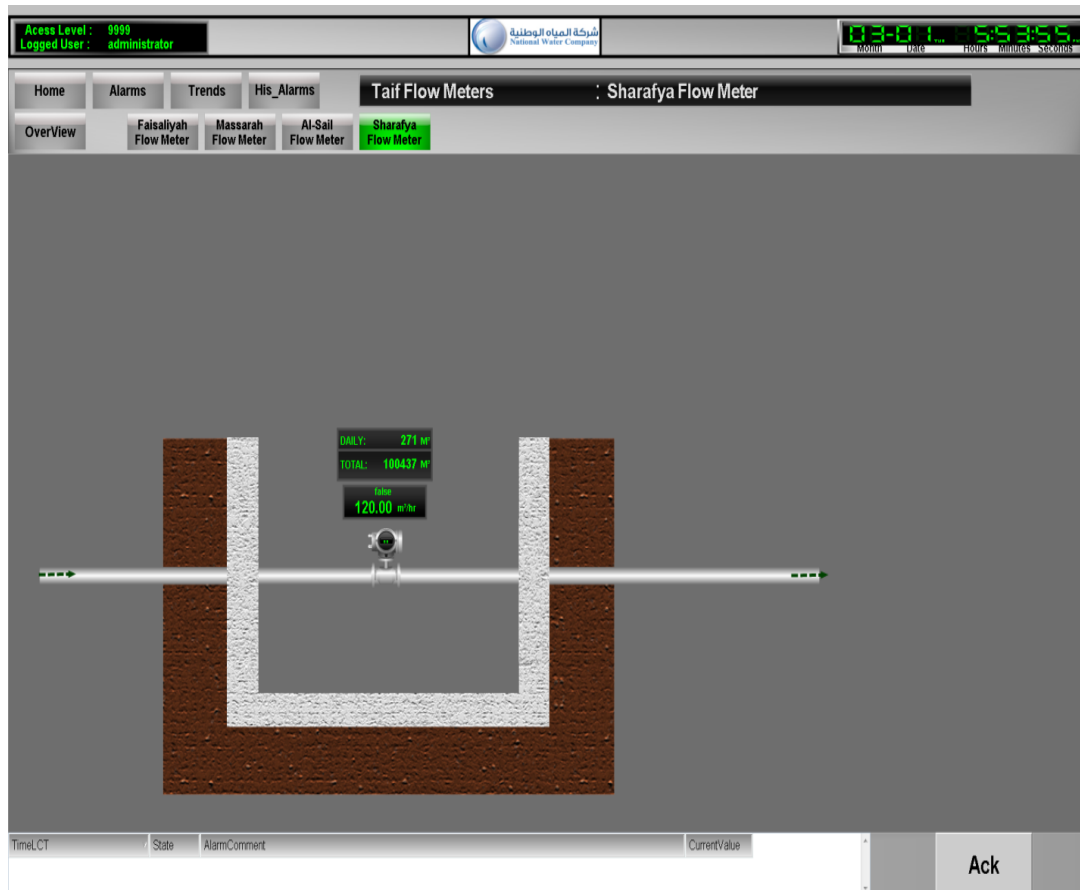
- 1 no's of Flow meters.

Here user can monitor the analog instruments such as Flow meter in meter. With totalizer and daily flow and flow rate. Also you can check the RTU status



▪ Sharafya Flow meter

After the clicking the Flow meters section button user will get the map. By clicking sharafya flow section user will get sharafya flow meter. Below screen indicate the sharafya flow meter section.



This section includes the following:

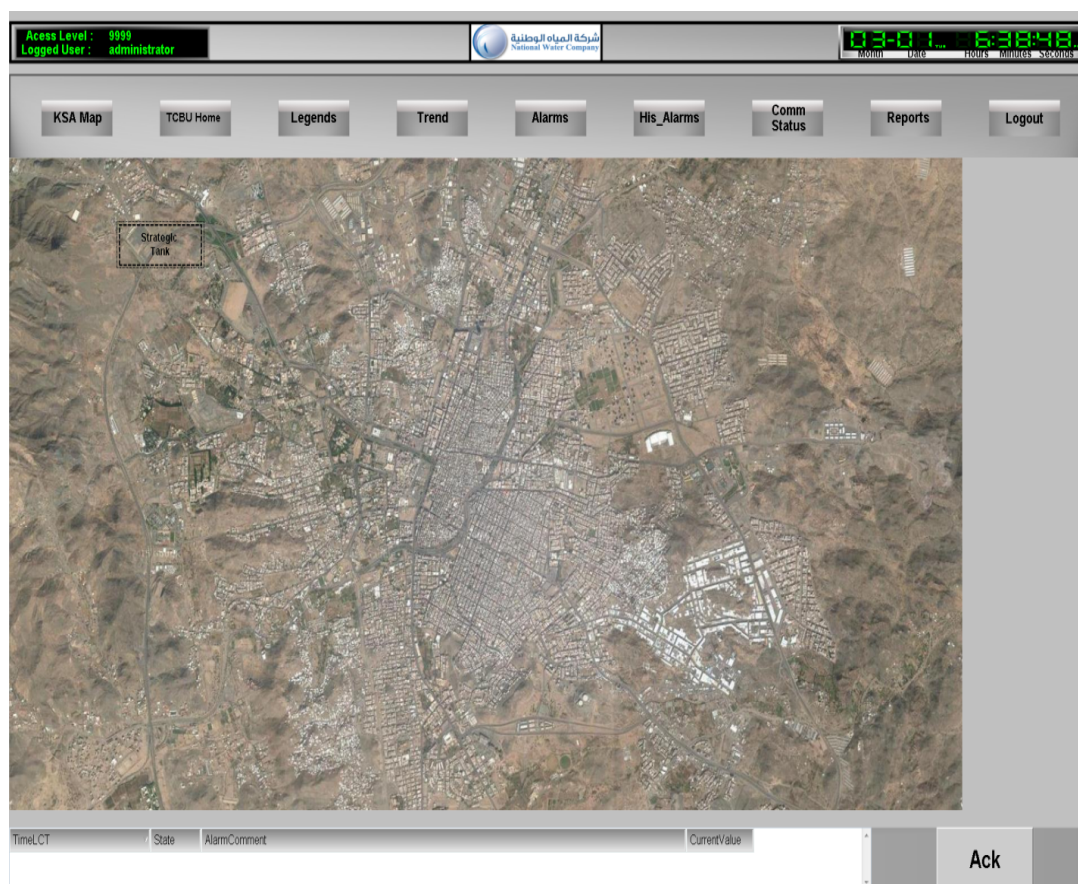
- 1 no's of Flow meters.

Here user can monitor the analog instruments such as Flow meter in meter. With totalizer and daily flow and flow rate. Also you can check the RTU status

12) Strategic Tank Section



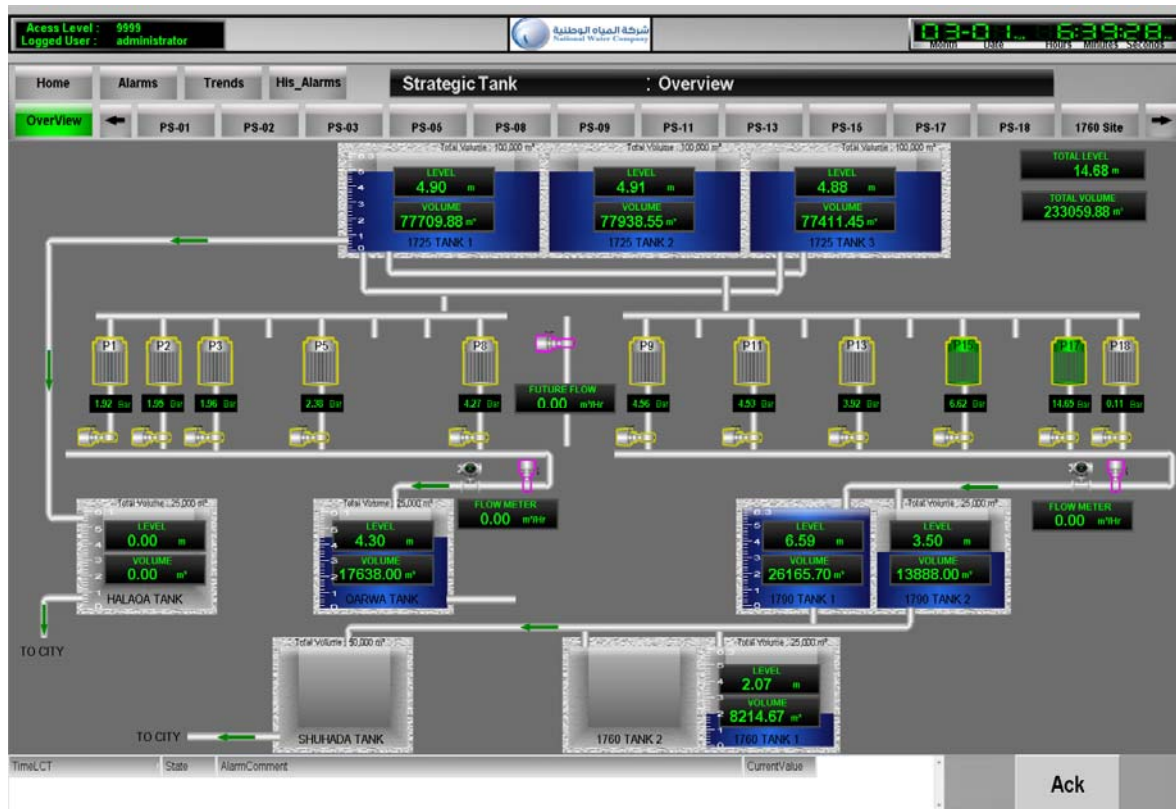
By clicking strategic tank button of overview screen users will get the map screen of strategic tank. Map screen show below.



- After clicking the strategic button of map section user will see the overview of strategic section area. From this user will monitor and control the all area instrument of strategic tank.



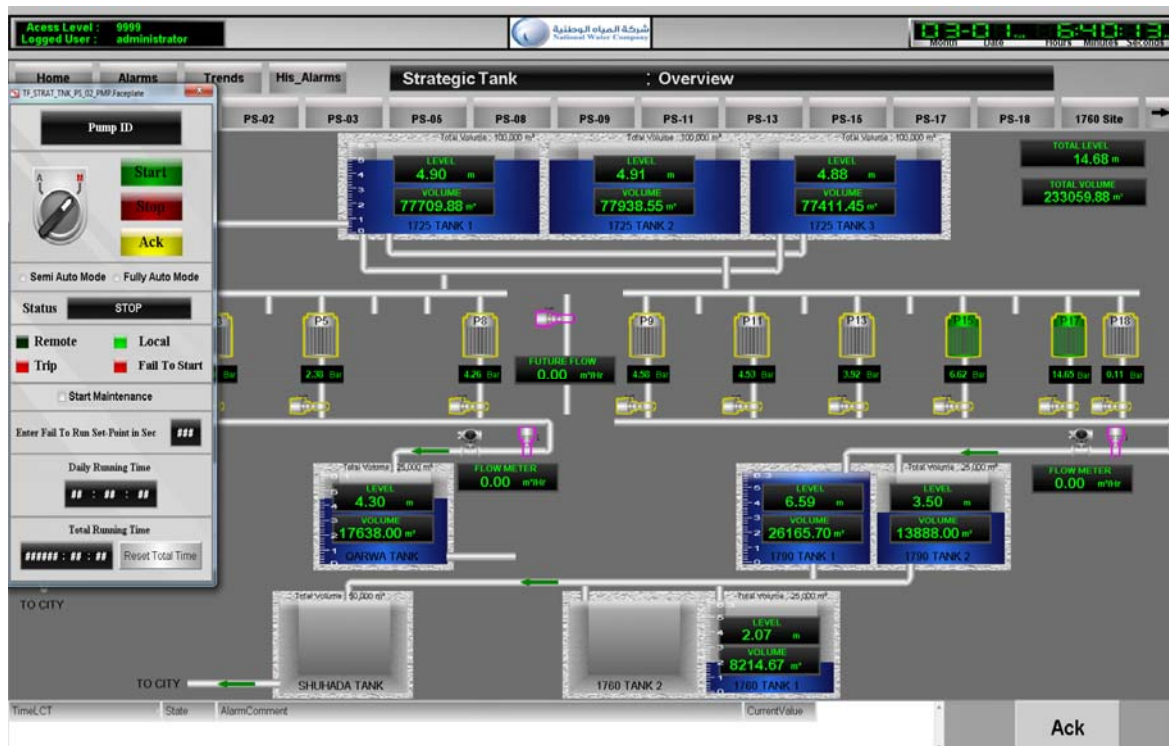
■ Strategic tank Overview Screen.



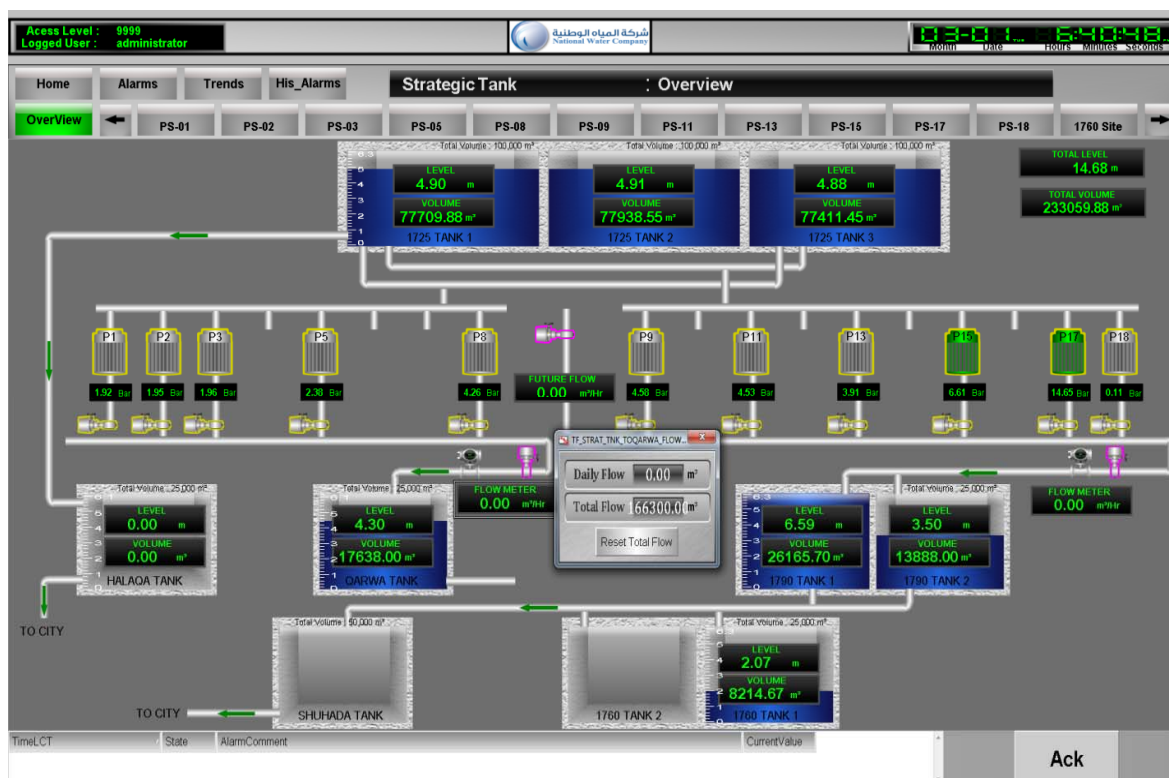
Here user will monitor the all instrument such like pumps, valves, flow & tank the overview of strategic tank .user also monitor the reading value of level value, pressure value and flow values.

User can monitor the instrument by use the respective popup. Popup function and controlling already describe the popup section. Please see the popup section. Below screen images indicate the popup with instrument.

Strategic tank overview screen with Pump Popup screen.



Strategic tank overview screen with flow readings popup.

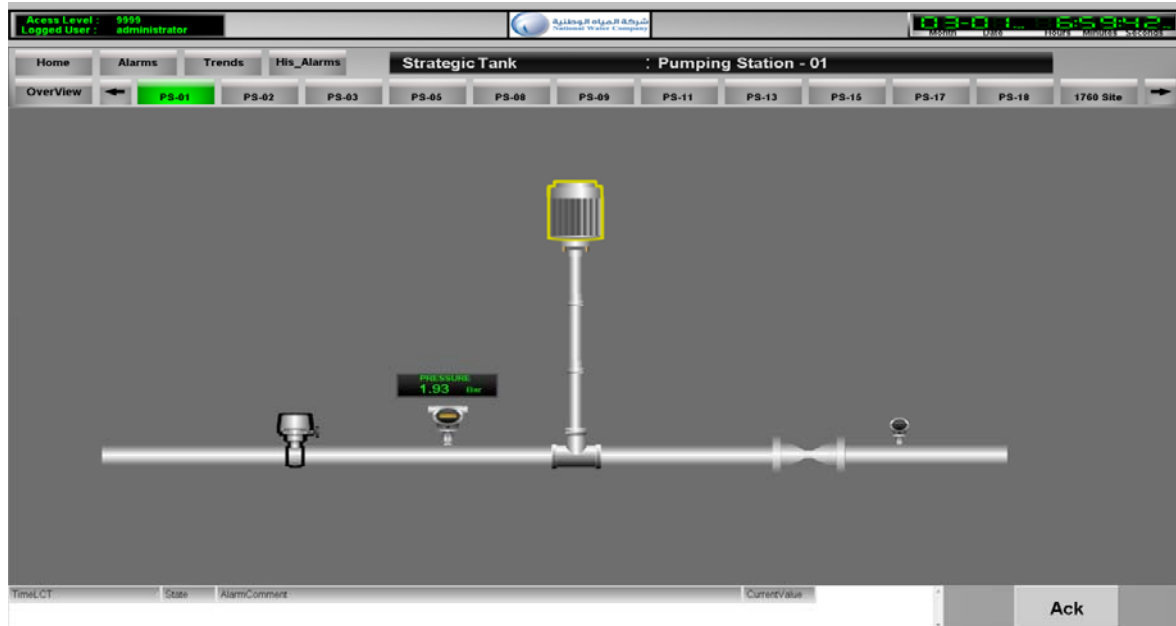




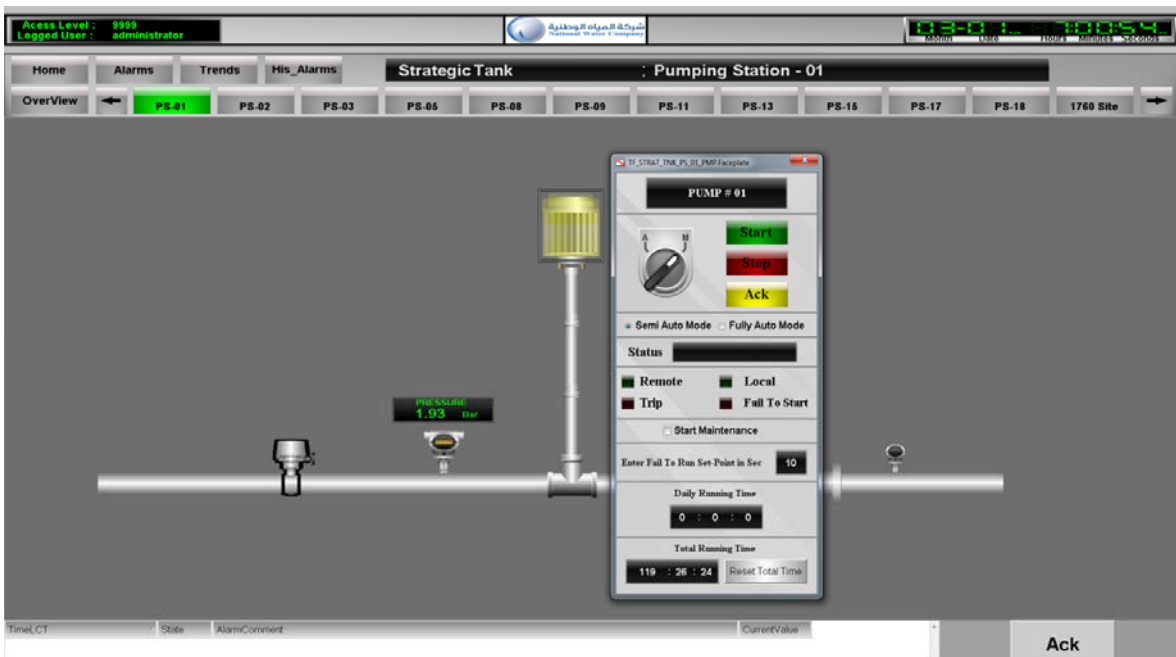
- Strategic tank Pumping Station - 01 screen.

By clicking the strategic tank station from Map section, user will get strategic tank section and its header. From this header user will navigate using header button with its respective screen section of tank. Here user only for monitoring and control the all instrument like pump, valve and pressure. For pump popup see the popup section.

Below screens indicated the strategic tank pumping station 1 and its control with feedback indication of pump popup.

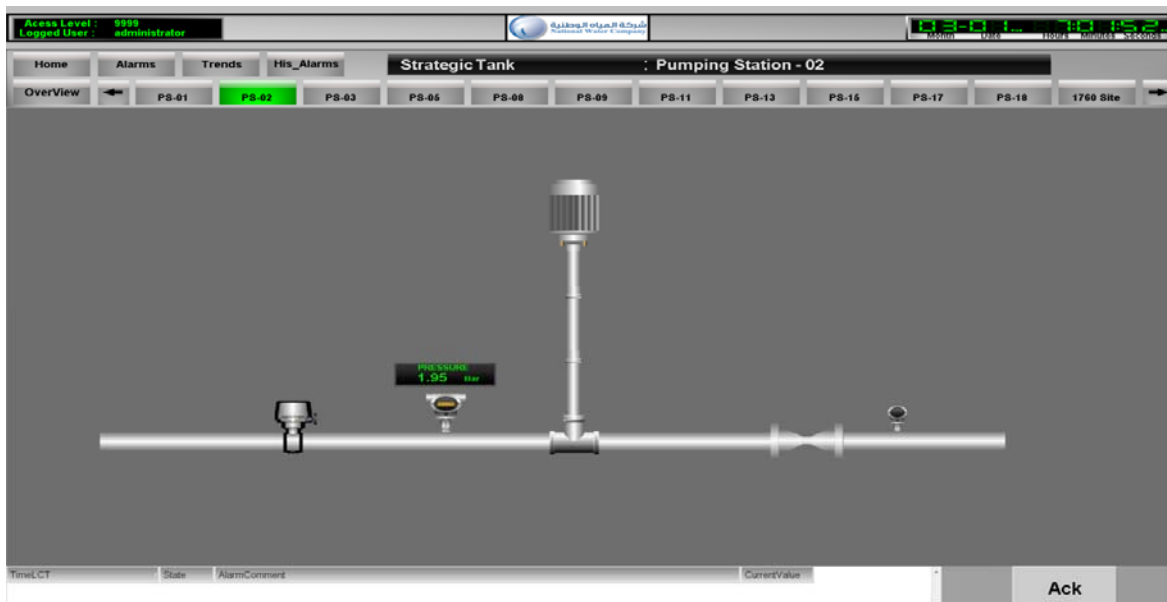


Strategic tank Pumping Station - 01 screen with Pump popup.



■ Strategic tank Pumping Station - 02 screen

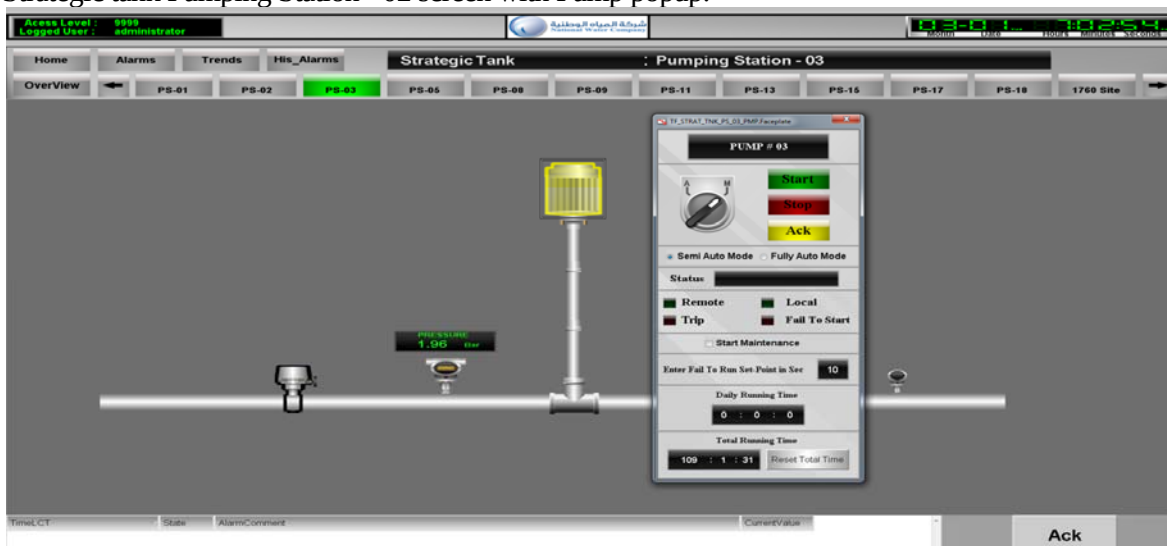
By clicking the PS-02 from header of strategic tank, user will get pumping station two of strategic tank. Here user only for monitoring and control the all instrument like pump, valve and pressure. Below screens indicated the strategic tank pumping station 2 and its control with feedback indication of pump popup.



This section includes the following:

- 1 no's of Flow switch.
- 1 no's of Pressure Transmitter.
- 1 no's of Pump.
- 1 no's of Valve.

Strategic tank Pumping Station - 02 screen with Pump popup.



■ Strategic tank Pumping Station - 05 screen



By clicking the PS-05 from header of strategic tank, user will get pumping station five of strategic tank. Here user only for monitoring and control the all instrument like pump, valve and pressure. Below screens indicated the strategic tank pumping station 5.



This section includes the following:

- 1 no's of Flow switch.
- 1 no's of Pressure Transmitter.
- 1 no's of Pump.
- 1 no's of Valve.



■ Strategic tank Pumping Station - 08 screen

By clicking the PS-08 from header of strategic tank, user will get pumping station eight of strategic tank. Here user only for monitoring and control the all instrument like pump, valve and pressure. Below screens indicated the strategic tank pumping station 8.



This section includes the following:

- 1 no's of Flow switch.
- 1 no's of Pressure Transmitter.
- 1 no's of Pump.
- 1 no's of Valve.

■ Strategic tank Pumping Station - 09 screen

By clicking the PS-09 from header of strategic tank, user will get pumping station nine of strategic tank. Here user only for monitoring and control the all instrument like pump, valve and pressure. Below screens indicated the strategic tank pumping station 9.



This section includes the following:

- 1 no's of Flow switch.
- 1 no's of Pressure Transmitter.
- 1 no's of Pump.
- 1 no's of Valve.



■ Strategic tank Pumping Station - 11 screen

By clicking the PS-11 from header of strategic tank, user will get pumping station eleven of strategic tank. Here user only for monitoring and control the all instrument like pump, valve and pressure. Below screens indicated the strategic tank pumping station 11.



This section includes the following:

- 1 no's of Flow switch.
- 1 no's of Pressure Transmitter.
- 1 no's of Pump.
- 1 no's of Valve.



■ Strategic tank Pumping Station - 13 screen

By clicking the PS-13 from header of strategic tank, user will get pumping station thirteen of strategic tank. Here user only for monitoring and control the all instrument like pump, valve and pressure. Below screens indicated the strategic tank pumping station 13.



This section includes the following:

- 1 no's of Flow switch.
- 1 no's of Pressure Transmitter.
- 1 no's of Pump.
- 1 no's of Valve.



■ Strategic tank Pumping Station - 15 screen

By clicking the PS-15 from header of strategic tank, user will get pumping station fifth teen of strategic tank. Here user only for monitoring and control the all instrument like pump, valve and pressure. Below screens indicated the strategic tank pumping station 15.



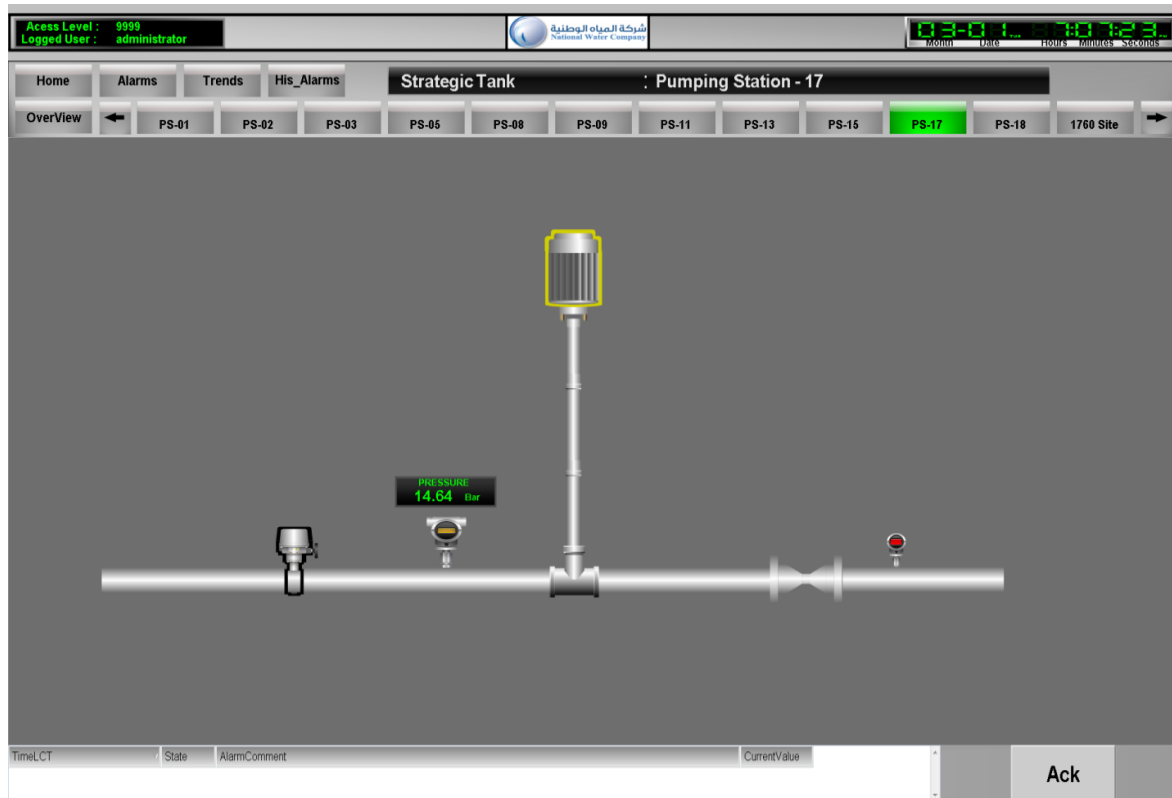
This section includes the following:

- 1 no's of Flow switch.
- 1 no's of Pressure Transmitter.
- 1 no's of Pump.
- 1 no's of Valve.



■ Strategic tank Pumping Station - 17 screen

By clicking the PS-17 from header of strategic tank, user will get pumping station seventeen of strategic tank. Here user only for monitoring and control the all instrument like pump, valve and pressure. Below screens indicated the strategic tank pumping station 17.



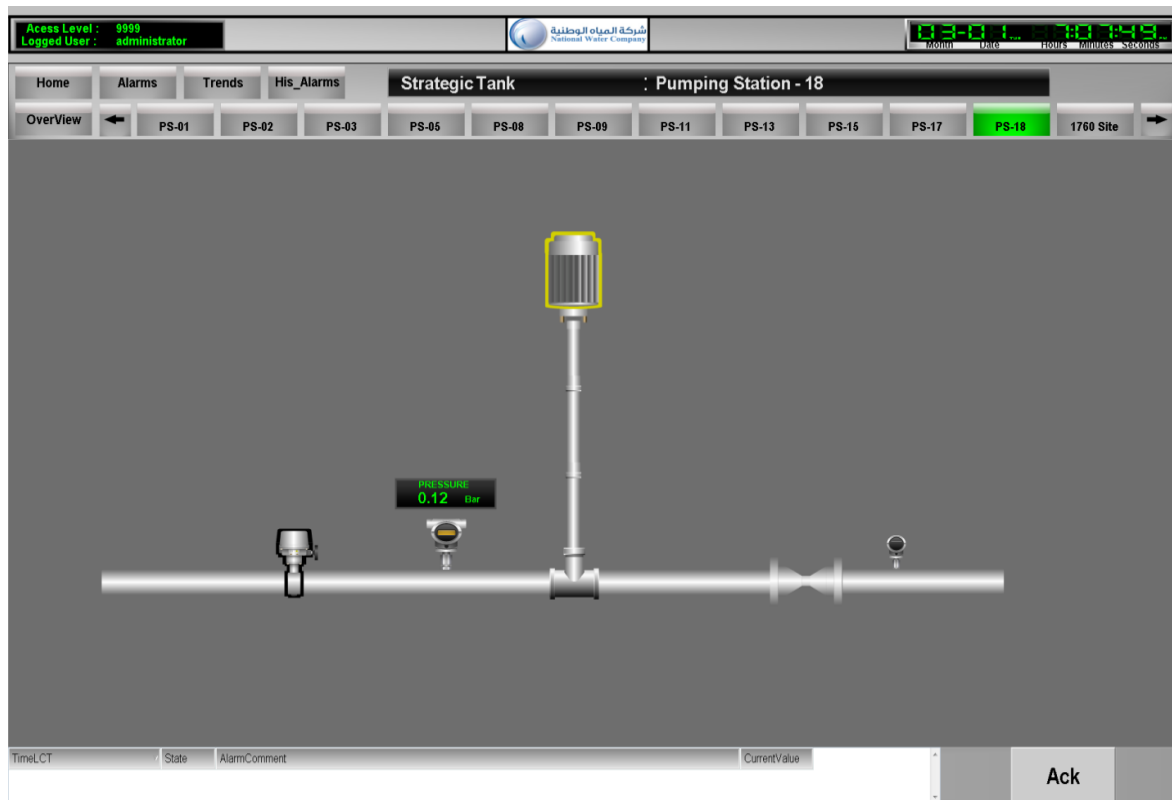
This section includes the following:

- 1 no's of Flow switch.
- 1 no's of Pressure Transmitter.
- 1 no's of Pump.
- 1 no's of Valve.



■ Strategic tank Pumping Station - 18 screen

By clicking the PS-18 from header of strategic tank, user will get pumping station eighteen of strategic tank. Here user only for monitoring and control the all instrument like pump, valve and pressure. Below screens indicated the strategic tank pumping station 18.



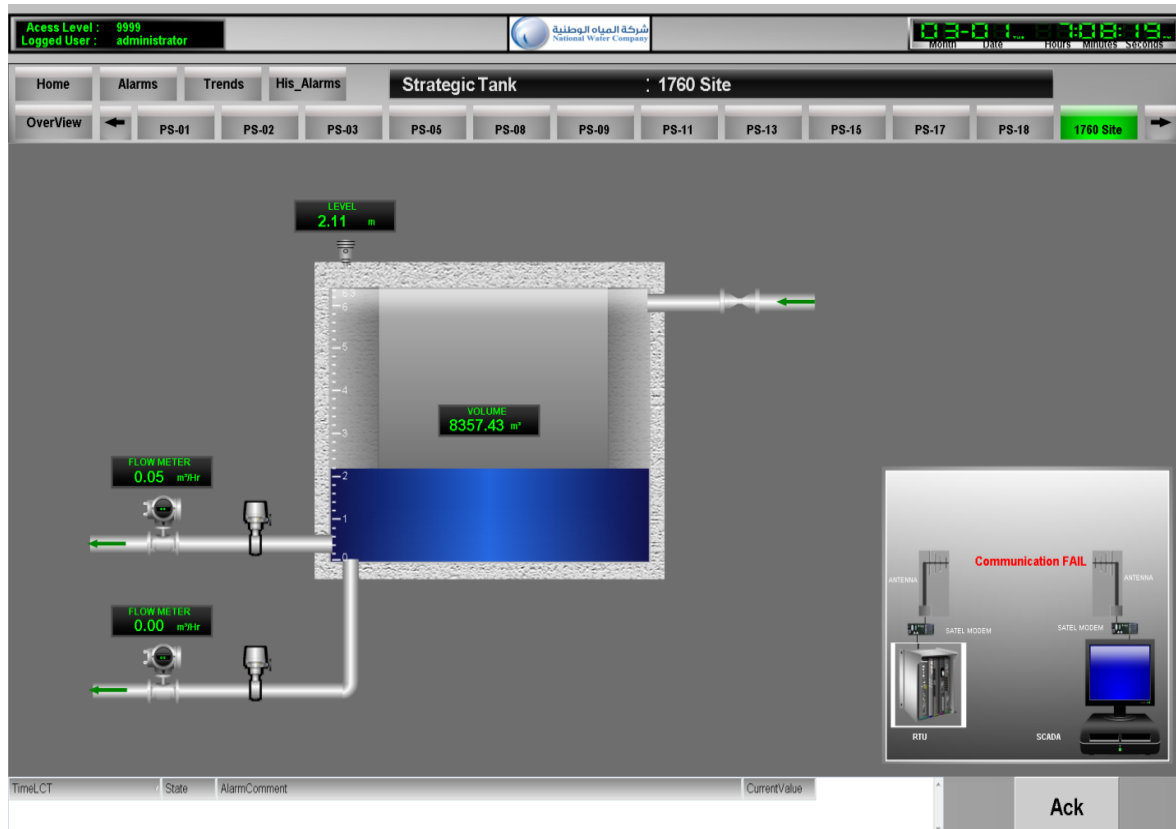
This section includes the following:

- 1 no's of Flow switch.
- 1 no's of Pressure Transmitter.
- 1 no's of Pump.
- 1 no's of Valve.



■ Strategic tank 1760 site screen

By clicking the 1760 site tank from header of strategic tank, user will get tank of strategic tank. Here user only for monitoring and control the all instrument like Tank level, valve and flow. Users also see the status of communication. Below screens indicated the strategic tank 1760 site.



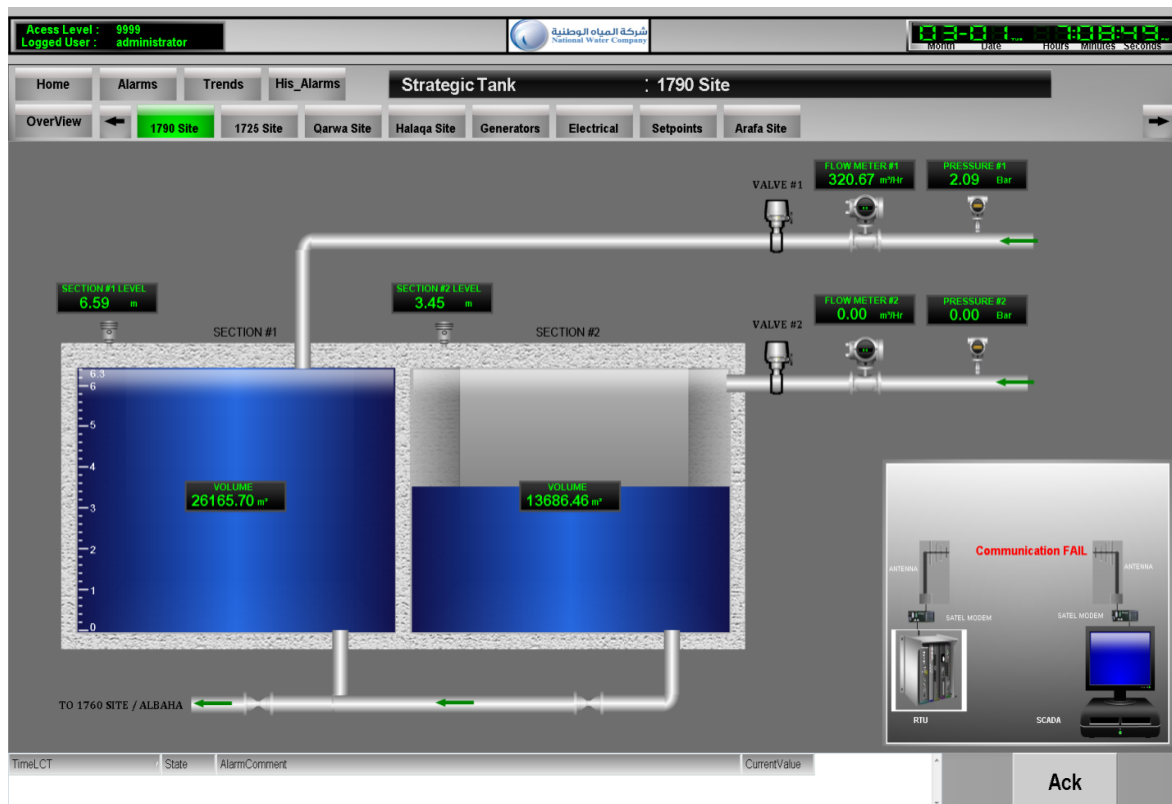
This section includes the following:

- 1 no's of Tank.
- 1 no's of Level switch.
- 2 no's of Flow meter.
- 2 no's of Valve.
- Communication status.



■ Strategic tank 1790 site screen

By clicking the 1790 site tank from header of strategic tank, user will get tank of strategic tank. Here user only for monitoring and control the all instrument like Tank level, valve, pressure and flow. Users also see the status of communication. Below screens indicated the strategic tank 1790 site.



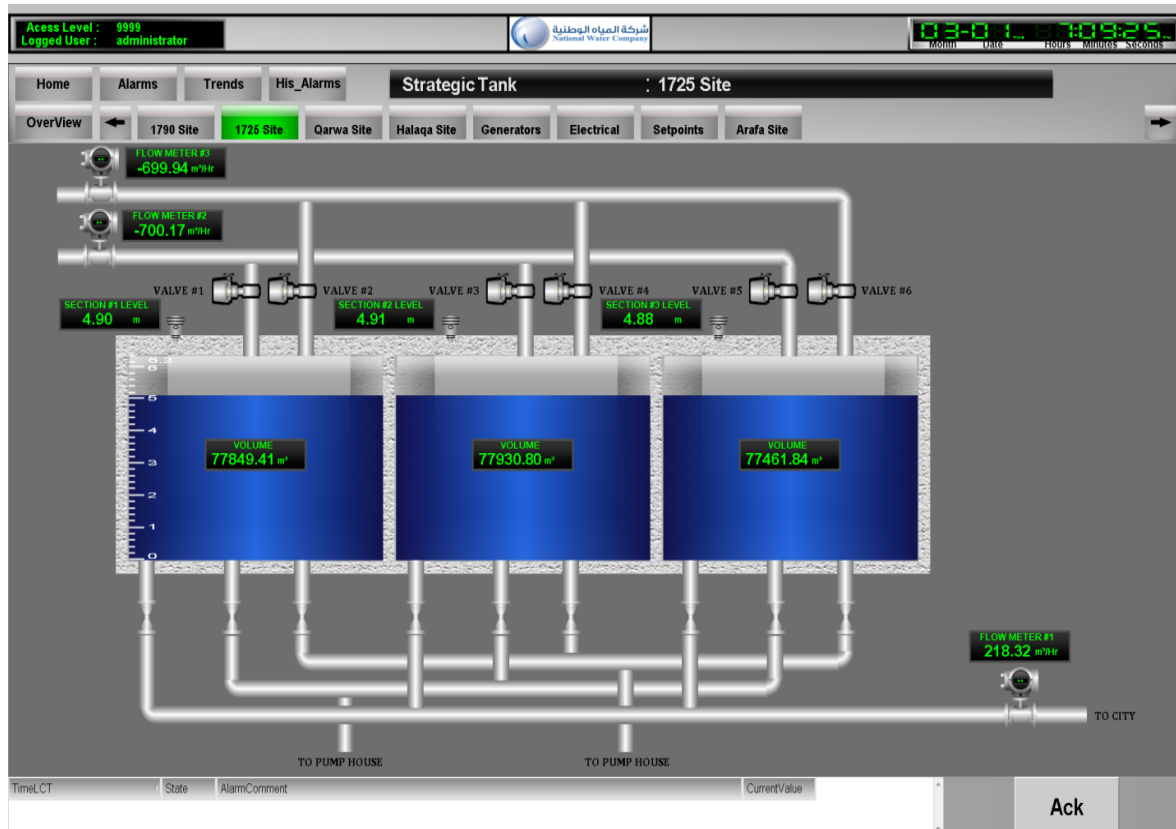
This section includes the following:

- 2 no's of Tank.
- 2 no's of Level switch.
- 2 no's of Flow meter.
- 2 no's of Valve.
- 2 no's of Pressure Transmitter.
- Communication status.



■ Strategic tank 1725 site screen

By clicking the 1725 site tank from header of strategic tank, user will get tank of strategic tank. Here user only for monitoring and control the all instrument like Tank level, valve and flow. Below screens indicated the strategic tank 1725 site.



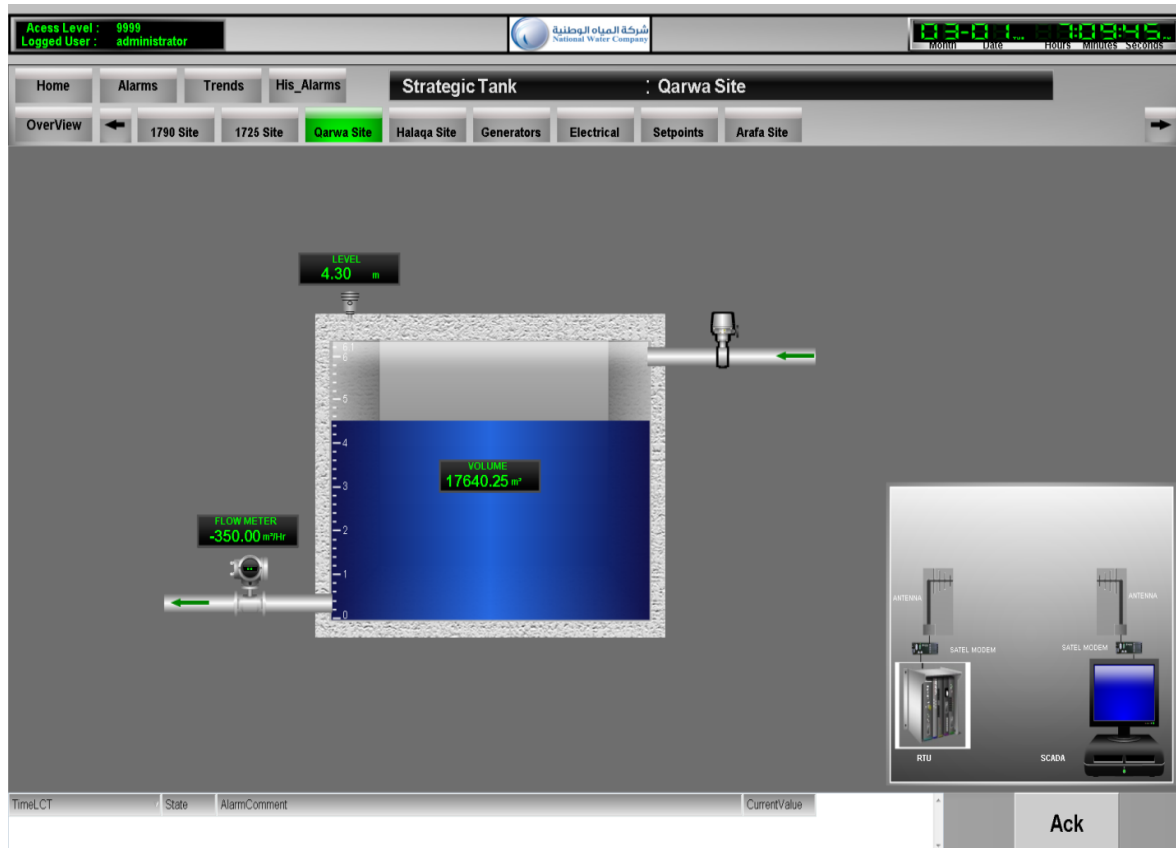
This section includes the following:

- 3 no's of Tank.
- 3 no's of Level switch.
- 3 no's of Flow meter.
- 6 no's of Valve.



■ Strategic tank Qarwa site screen

By clicking the Qarwa site tank from header of strategic tank, user will get tank of strategic tank. Here user only for monitoring and control the all instrument like Tank level, valve and flow. Users also see the status of communication. Below screens indicated the strategic tank qarwa site.



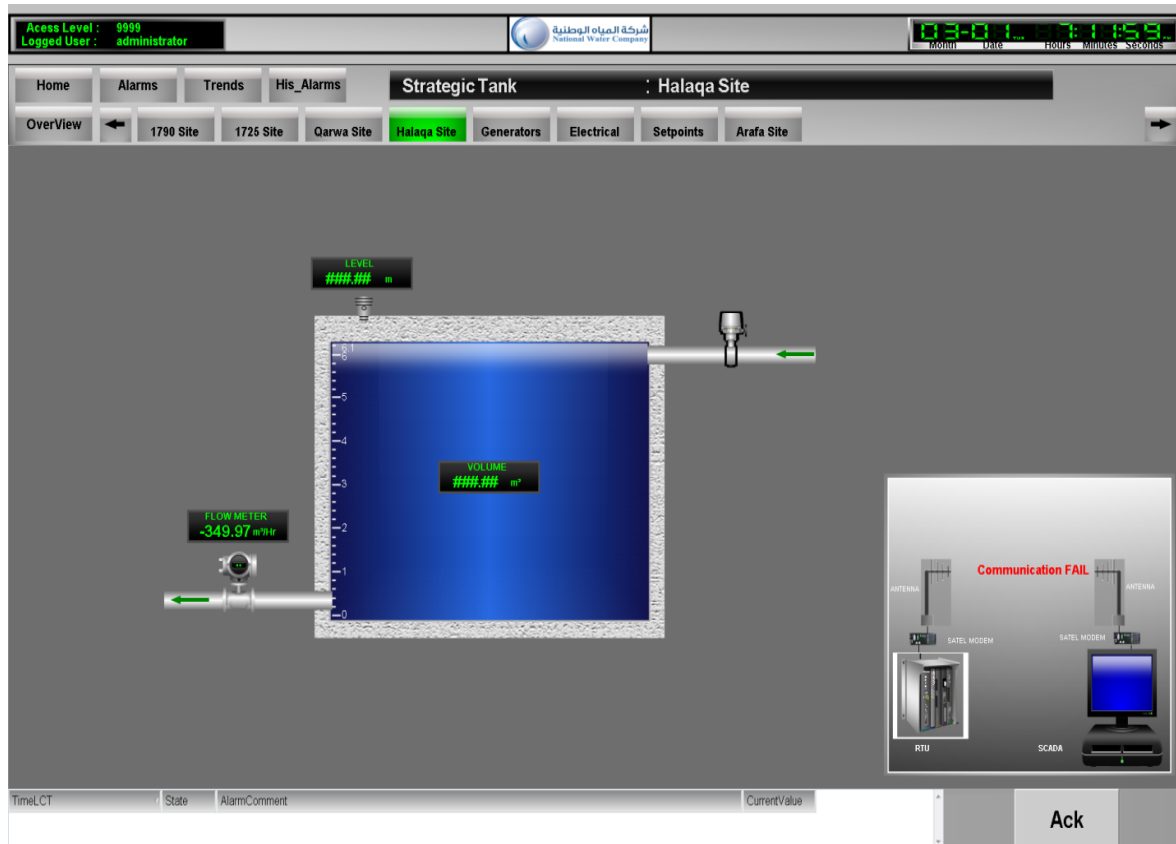
This section includes the following:

- 1 no's of Tank.
- 1 no's of Level switch.
- 1 no's of Flow meter.
- 1 no's of Valve.
- Communication status.



▪ Strategic tank Halaqa site screen

By clicking the Halaqa site tank from header of strategic tank, user will get halaqa tank of strategic tank. Here user only for monitoring and control the all instrument like Tank level, valve and flow. Users also see the status of communication. Below screens indicated the strategic tank halaqa site.



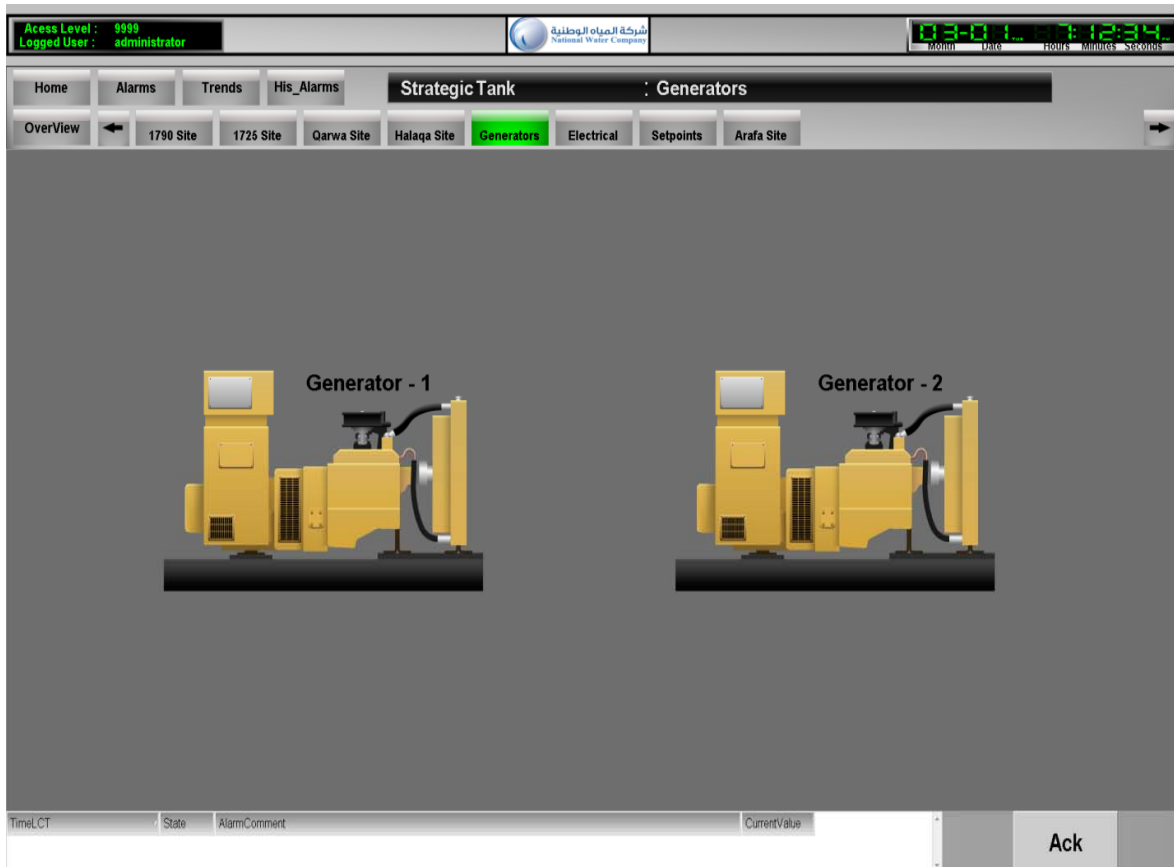
This section includes the following:

- 1 no's of Tank.
- 1 no's of Level switch.
- 1 no's of Flow meter.
- 1 no's of Valve.
- Communication status.



- Strategic tank Generators site screen.

By clicking the Generator site tank from header of strategic tank, user will get generator section of strategic tank. Here user only for monitoring and control the all generator. Below screens indicated the strategic tank of generator site.

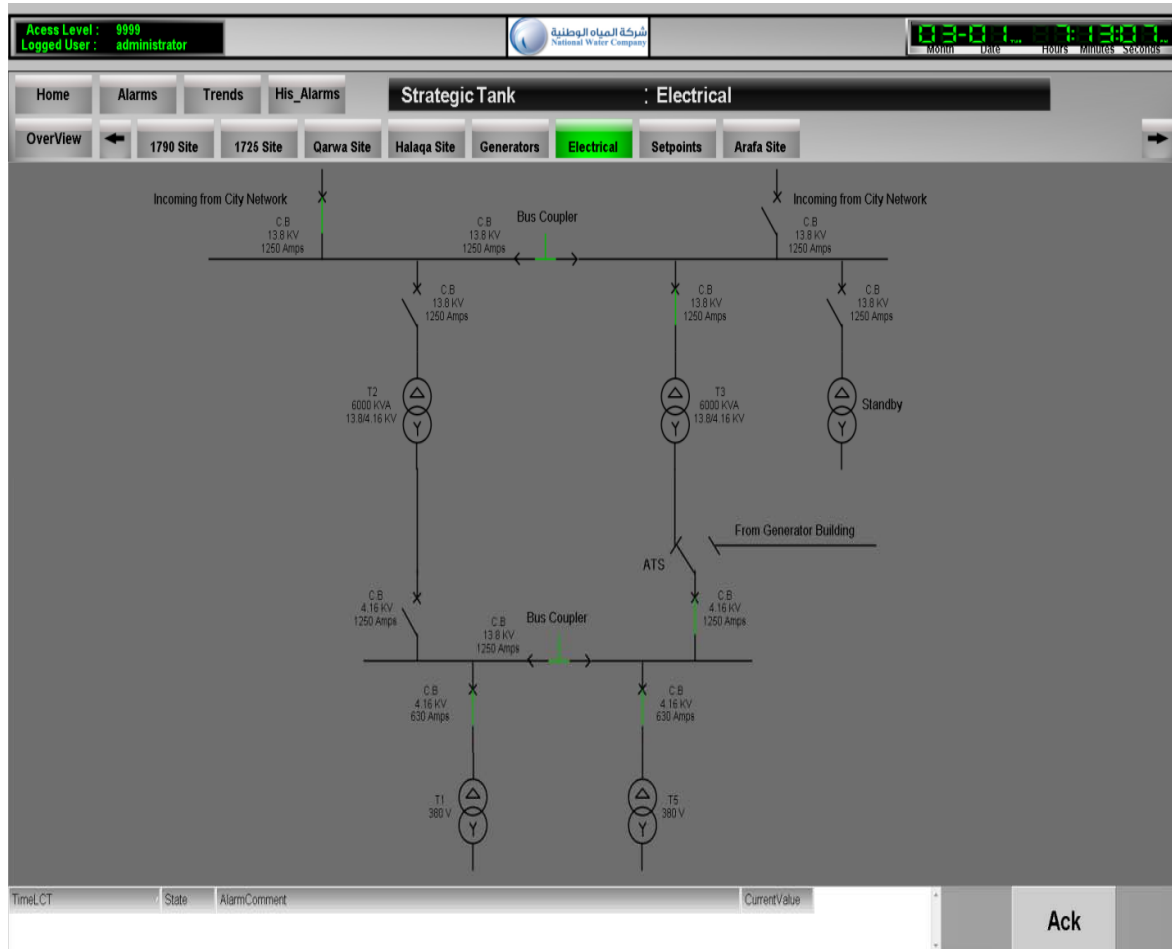


This section includes the following:

- 2 no's of Generator.

▪ Strategic tank Electrical site screen.

By clicking the Electrical site from header of strategic tank, user will get electrical section of strategic tank. Here user only for monitoring and control the all generator. Below screens indicated the strategic tank of generator site.



This section includes the following:

- Bus Coupler.
- Circuit Breaker.

- Strategic tank set points site screen.

By clicking the Set point from header of strategic tank, user will get set point screen which include all instruments' set points of strategic tank. Here user only for monitoring the all analog values. Below screens indicated the strategic tank of setpoint.

Access Level : 9999
Logged User : administrator


 شركة المياه الوطنية
 National Water Company

03:01:13:32
Date: / /
Hours: Minutes: Seconds

Home
Alarms
Trends
His_Alarms

Strategic Tank
Setpoints

Overview
1790 Site
1725 Site
Qarwa Site
Halaqa Site
Generators
Electrical
Setpoints
Arafa Site

1725 STRATEGIC MAIN SITE

FLOW METERS

1725 FLOW #1
High Alarm SP: 0.0
Low Alarm SP: 4000.0
High Alm: Low Alm

1725 FLOW #2
High Alarm SP: 4000.0
Low Alarm SP: 0.0
High Alm: Low Alm

1725 FLOW #3
High Alarm SP: 0.0
Low Alarm SP: 4000.0
High Alm: Low Alm

FUTURE FLOW
High Alarm SP: 0.0
Low Alarm SP: 0.0
High Alm: Low Alm

FLOW TO 1790
High Alarm SP: 4000.0
Low Alarm SP: 0.0
High Alm: Low Alm

FLOW TO QARWA
High Alarm SP: 4000.0
Low Alarm SP: 0.0
High Alm: Low Alm

LEVEL TRANSMITTERS

1725 LEVEL #1
High Alarm SP: 6.0
Low Alarm SP: 2.0
High Alm: Low Alm

1725 LEVEL #2
High Alarm SP: 2.0
Low Alarm SP: 6.0
High Alm: Low Alm

1725 LEVEL #3
High Alarm SP: 6.0
Low Alarm SP: 2.0
High Alm: Low Alm

1725 DRY RUN SP
1.0

PUMP # 5
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

PUMP # 9
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

PRESSURE TRANSMITTERS

PUMP # 1
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

PUMP # 2
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

PUMP # 3
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

PUMP # 8
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

PRESSURE TRANSMITTERS

PUMP # 11
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

PUMP # 13
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

PUMP # 15
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

PUMP # 17
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

PUMP # 18
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

1790

FLOW #1
High Alarm SP: 1000.0
Low Alarm SP: 0.0
High Alm: Low Alm

FLOW #2
High Alarm SP: 4000.0
Low Alarm SP: 0.0
High Alm: Low Alm

LEVEL #1
High Alarm SP: 6.0
Low Alarm SP: 2.0
High Alm: Low Alm

LEVEL #2
High Alarm SP: 6.0
Low Alarm SP: 2.0
High Alm: Low Alm

PRESSURE #1
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

PRESSURE #2
High Alarm SP: 10.0
Low Alarm SP: 0.0
High Alm: Low Alm

QARWA

FLOW
High Alarm SP: 4000.0
Low Alarm SP: 0.0
High Alm: Low Alm

LEVEL
High Alarm SP: 5.0
Low Alarm SP: 2.0
High Alm: Low Alm

HALAQA

FLOW
High Alarm SP: 4000.0
Low Alarm SP: 0.0
High Alm: Low Alm

LEVEL
High Alarm SP: 5.0
Low Alarm SP: 2.0
High Alm: Low Alm

1760

FLOW #1
High Alarm SP: 4000.0
Low Alarm SP: 0.0
High Alm: Low Alm

FLOW #2
High Alarm SP: 0.0
Low Alarm SP: 0.0
High Alm: Low Alm

LEVEL
High Alarm SP: 6.0
Low Alarm SP: 2.0
High Alm: Low Alm

1790 AUTO SEQUENCES

1790

Duty # 1
Start SP: 4.0
Stop SP: 5.8
Duty # 2
Start SP: 3.5
Stop SP: 5.0
Duty # 3
Start SP: 3.0
Stop SP: 4.0
Duty # 4
Start SP: 2.5
Stop SP: 3.5

QARWA

Duty # 1
Start SP: 4.0
Stop SP: 5.8
Duty # 2
Start SP: 3.5
Stop SP: 5.0
Duty # 3
Start SP: 3.0
Stop SP: 4.0
Duty # 4
Start SP: 2.5
Stop SP: 3.5

STOP PUMP PRESSURE SET-POINTS

Pump # 01: 0.0
Pump # 02: 0.0
Pump # 03: 0.0
Pump # 05: 0.0
Pump # 08: 0.0
Pump # 09: 0.0

Pump # 11: 0.0
Pump # 13: 0.0
Pump # 15: 0.0
Pump # 17: 0.0
Pump # 18: 0.0

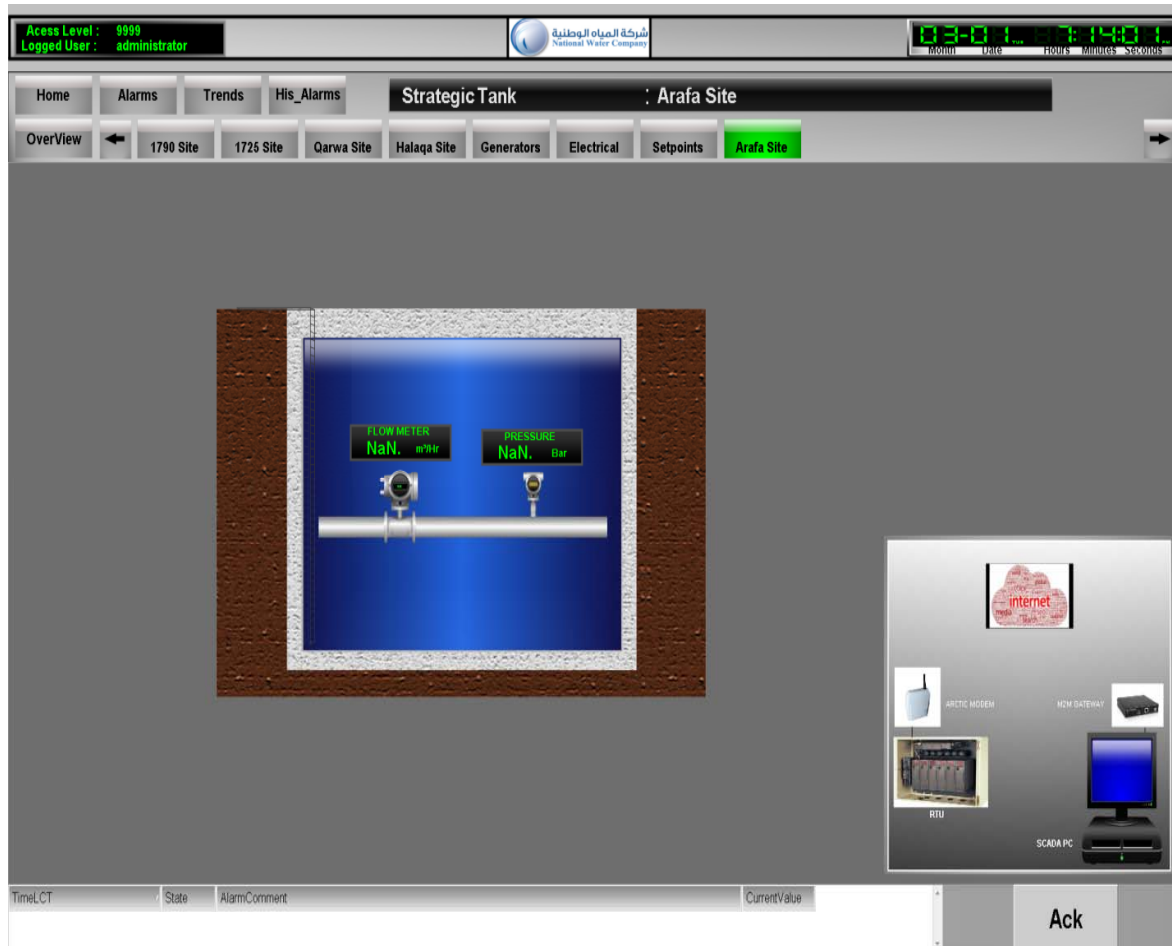
TimeLCT
State
AlarmComment
CurrentValue

Ack



▪ Strategic tank Arafa site screen.

By clicking the Arafa site from header of strategic tank, user will get arafa site section of strategic tank. Here user only for monitoring and control the all flow and pressure. Users also see the status of communication. Below screens indicated the strategic tank of generator site.

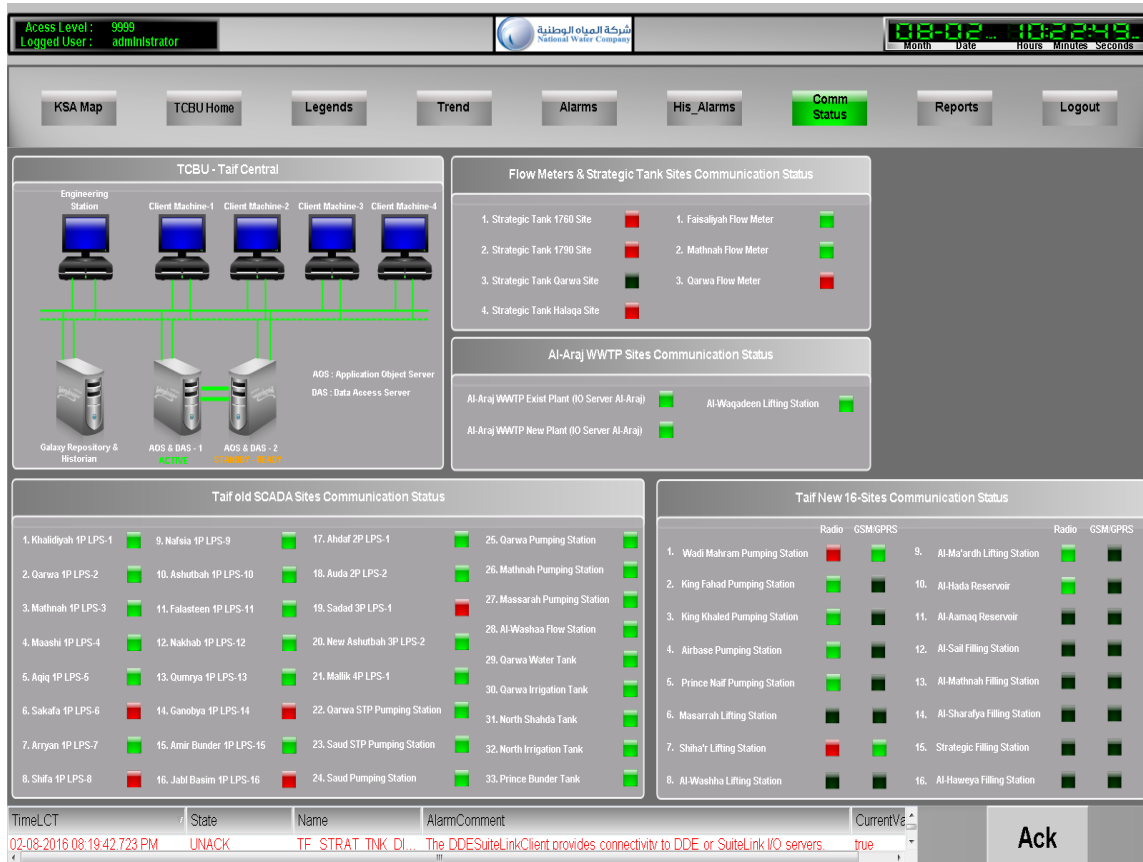


This section includes the following:

- 1 no's of Tank.
- 1 no's of Pressure Transmitter.
- 1 no's of Flow meter.
- Communication status.

COMMON STATUS:

As scada have the Common Status screen as given below. This Screen helps user to know regarding the status of communication for both sites. It also shows the status of communication failure in any site via red led. User can select and view screen by clicking on Comm Status button on header section. This screen also shows communication between client and server communication of both pumping station area using line. Green line indicate that the communication is good and red line indicates that the bad communication.



The screenshot shows the 'Comm Status' screen of a SCADA system. At the top, there's a header bar with 'Access Level: 9999', 'Logged User: administrator', and a digital clock showing '08-02 10:22:49'. Below the header, there's a navigation bar with buttons: KSA Map, TCBU Home, Legends, Trend, Alarms, His_Alarms, **Comm Status**, Reports, and Logout. The main content area is divided into several panels:

- TCBU - Taif Central:** A diagram showing the network topology with an Engineering Station, four Client Machines, and two AOS (Application Object Server) units. Green lines indicate good communication, while red lines indicate failure.
- Flow Meters & Strategic Tank Sites Communication Status:** A table showing the status of four sites and their corresponding flow meters.

Site	Status	Flow Meter	Status
1. Strategic Tank 1760 Site	Red	1. Faisalyah Flow Meter	Green
2. Strategic Tank 1790 Site	Red	2. Mathnah Flow Meter	Green
3. Strategic Tank Qarwa Site	Green	3. Qarwa Flow Meter	Red
4. Strategic Tank Halaga Site	Red		
- Al-Araj WWTP Sites Communication Status:** A table showing the status of two sites.

Site	Status
Al-Araj WWTP Exist Plant (IO Server Al-Araj)	Green
Al-Waqadeen Lifting Station	Green
- Taif old SCADA Sites Communication Status:** A large table showing the status of 33 sites.

Site	Status	Site	Status
1. Khalidiyah 1P LPS-1	Green	17. Ahdaf 2P LPS-1	Green
2. Qarwa 1P LPS-2	Green	18. Audat 2P LPS-2	Green
3. Mathnah 1P LPS-3	Green	19. Sadad 3P LPS-1	Red
4. Masah 1P LPS-4	Green	20. New Ashubah 3P LPS-2	Green
5. Aqiq 1P LPS-5	Green	21. Malik 4P LPS-1	Green
6. Sakafa 1P LPS-6	Red	22. Qarwa STP Pumping Station	Green
7. Arryan 1P LPS-7	Green	23. Saud STP Pumping Station	Green
8. Shifa 1P LPS-8	Red	24. Saud Pumping Station	Green
9. Nafsa 1P LPS-9	Green	25. Qarwa Pumping Station	Green
10. Ashubah 1P LPS-10	Green	26. Mathnah Pumping Station	Green
11. Falasteen 1P LPS-11	Green	27. Masarah Pumping Station	Green
12. Nakhab 1P LPS-12	Green	28. Al-Washaa Flow Station	Green
13. Qumrya 1P LPS-13	Green	29. Qarwa Water Tank	Green
14. Ganobyia 1P LPS-14	Red	30. Qarwa Irrigation Tank	Green
15. Amir Bunder 1P LPS-15	Green	31. North Shahda Tank	Green
16. Jabl Basim 1P LPS-16	Red	32. North Irrigation Tank	Green
		33. Prince Bunder Tank	Green
- Taif New 16-Sites Communication Status:** A table showing the status of 16 sites, categorized by Radio and GSM/GPRS.

Radio	GSM/GPRS	Site	Radio	GSM/GPRS	Site
Red	Green	1. Wadi Mahram Pumping Station	Green	Green	9. Al-Ma'arid Lifting Station
Green	Green	2. King Fahad Pumping Station	Green	Green	10. Al-Hada Reservoir
Green	Green	3. King Khaled Pumping Station	Green	Green	11. Al-Amaq Reservoir
Green	Green	4. Airbase Pumping Station	Green	Green	12. Al-Sail Filling Station
Green	Green	5. Prince Naif Pumping Station	Green	Green	13. Al-Mathnah Filling Station
Green	Green	6. Masarah Lifting Station	Green	Green	14. Al-Sharafa Filling Station
Green	Green	7. Shaha'r Lifting Station	Green	Green	15. Strategic Filling Station
Green	Green	8. Al-Washaa Lifting Station	Green	Green	16. Al-Hawaya Filling Station

At the bottom, there's a table with columns: TimeLCT, State, Name, AlarmComment, and CurrentVe. The first row shows: '02-08-2016 08:19:42.723 PM', 'UNACK', 'TF STRAT.TNK.DI...', and 'The DDESuiteLinkClient provides connectivity to DDE or SuiteLink I/O servers'. There's also an 'Ack' button.

User can see the all specification of application server by using clicking of respective popup. Popup Status screen as given below.



ALARMS:

This screen will show current active alarms. Alarm window will show all active alarms with time of alarm initialization, current user, and current values with limits, provider name and status of acknowledge. User can acknowledge all alarms by using ACK ALL button. User

Time/CT	State	Alarm Comment	Current Value	Limit	Operator	Provider
13-03-2014 11:45:02.310	ACK	Filling Station 2 Flowmeter Value Lo Alarm	0	25.0	Administrator	galaxy
13-03-2014 11:45:02.313	ACK	Filling Station 2 Flowmeter Value Lo Alarm	0	10.0	Administrator	galaxy
13-03-2014 11:45:02.321	ACK	Filling Station 4 Flowmeter Value Lo Alarm	0	500.0	Administrator	galaxy
13-03-2014 11:45:02.324	ACK	Filling Station 4 Flowmeter Value Lo Alarm	0	300.0	Administrator	galaxy
13-03-2014 11:45:02.326	ACK	Milton Tank Chlorine Residual Value Lo Alarm	0	25.0	Administrator	galaxy
13-03-2014 11:45:02.328	ACK	Milton Tank Chlorine Residual Value Lo Alarm	0	10.0	Administrator	galaxy
13-03-2014 11:45:02.331	ACK	Milton Tank Conductivity Value Lo Alarm	0	25.0	Administrator	galaxy
13-03-2014 11:45:02.334	ACK	Milton Tank Conductivity Value Lo Alarm	0	10.0	Administrator	galaxy
13-03-2014 11:45:02.336	ACK	Milton Tank Chlorine Dosing Value Lo Alarm	0	25.0	Administrator	galaxy
13-03-2014 11:45:02.339	ACK	Milton Tank Chlorine Dosing Value Lo Alarm	0	10.0	Administrator	galaxy
13-03-2014 11:45:02.341	ACK	Milton Tank Flowmeter 1 Value Lo Alarm	0	550.0	Administrator	galaxy
13-03-2014 11:45:02.344	ACK	Milton Tank Flowmeter 1 Value Lo Alarm	0	300.0	Administrator	galaxy
13-03-2014 11:45:02.351	ACK	Milton Tank Flowmeter 5 Value Hi Alarm	8796.826	6000.0	Administrator	galaxy
13-03-2014 11:45:02.353	ACK	Milton Tank Flowmeter 5 Value Hi Alarm	8796.826	6750.0	Administrator	galaxy
13-03-2014 11:45:02.360	ACK	Milton Tank Flowmeter 7 Value Lo Alarm	0	25.0	Administrator	galaxy
13-03-2014 11:45:02.362	ACK	Milton Tank Flowmeter 7 Value Lo Alarm	0	10.0	Administrator	galaxy
13-03-2014 11:45:02.365	ACK	Milton Tank PH Value Lo Alarm	0	25.0	Administrator	galaxy
13-03-2014 11:45:02.367	ACK	Milton Tank PH Value Lo Alarm	0	10.0	Administrator	galaxy
13-03-2014 11:45:02.370	ACK	Milton Tank Pressure 1 Pressure Lo Alarm	0	25.0	Administrator	galaxy
13-03-2014 11:45:02.372	ACK	Milton Tank Pressure 1 Pressure Lo Alarm	0	10.0	Administrator	galaxy
13-03-2014 11:45:02.374	ACK	Milton Tank Pressure 2 Pressure Lo Alarm	0	25.0	Administrator	galaxy
13-03-2014 11:45:02.377	ACK	Milton Tank Pressure 2 Pressure Lo Alarm	0	10.0	Administrator	galaxy
13-03-2014 11:45:02.380	ACK	Milton Tank Pressure 3 Pressure Lo Alarm	0	25.0	Administrator	galaxy
13-03-2014 11:45:02.382	ACK	Milton Tank Pressure 3 Pressure Lo Alarm	0	10.0	Administrator	galaxy
13-03-2014 11:45:02.385	ACK	Milton Tank Pressure 4 Pressure Lo Alarm	0	25.0	Administrator	galaxy
13-03-2014 11:45:02.387	ACK	Milton Tank Pressure 4 Pressure Lo Alarm	0	10.0	Administrator	galaxy
13-03-2014 11:45:02.389	ACK	Milton Tank Temperature Value Lo Alarm	0	25.0	Administrator	galaxy
13-03-2014 11:45:02.392	ACK	Milton Tank Temperature Value Lo Alarm	0	10.0	Administrator	galaxy
13-03-2014 11:45:02.399	ACK	Milton Tank level Volume Lo Alarm	1	100000.0	Administrator	galaxy
13-03-2014 11:45:02.401	ACK	Milton Tank level Volume Lo Alarm	1	100000.0	Administrator	galaxy

Displaying 1 to 29 of 129 alarms | Default | 100% Complete | Kuwait, Riyadh

Time/CT	State	Alarm Comment	Current Value
10-03-2014 03:10:46:295 PM	UNACK...	Lost alarm communication to MK_DL_CObject_SUFFLINK	
13-03-2014 11:45:02.310 AM	ACK	Filling Station 2 Flowmeter Value Lo Alarm	0

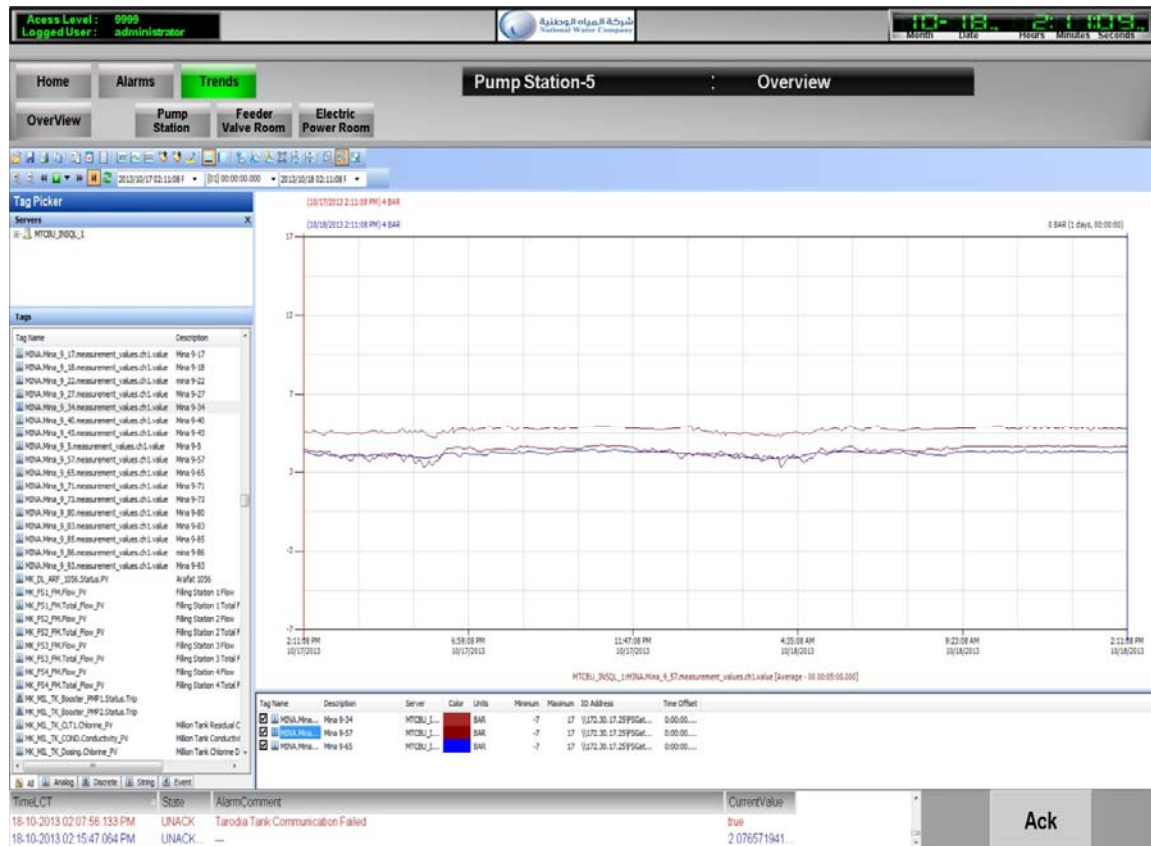
Ack

All alarms from sites will be logged into this screen. Each alarm is stamped by the following fields:

- ✓ **Time/CT:** shows the date and time of the alarm.
- ✓ **State:** shows the State of the alarm.
- ✓ **Alarm Comment:** shows the detailed description of an alarm.
- ✓ **Alarm Current value:** shows the current value of an alarm.
- ✓ **Alarm Limit:** shows the limit value of an alarm.
- ✓ **Operator:** shows the name of the user logged in when the alarm occurred.
- ✓ **Alarm Provider:** Shows Alarm provider name.



HISTORICAL TRENDS:



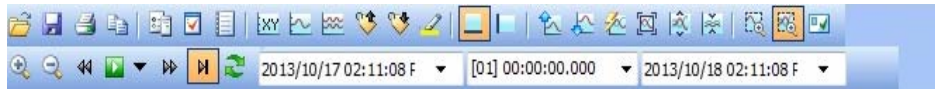
On this screen all analog parameter like flow, pressure, current, and temperature can be selected & their current & past value can be seen.

This screen shows historical trending data for all analogue signals available in the system. User can select the tags from Tags section. Tags are divided into five sections as per data type so user can easily find out the tags.

Tag Name	Description
Mina_9_17.measurement_values.ch1.value	Mina 9-17
Mina_9_18.measurement_values.ch1.value	Mina 9-18
Mina_9_22.measurement_values.ch1.value	Mina 9-22
Mina_9_27.measurement_values.ch1.value	Mina 9-27
Mina_9_34.measurement_values.ch1.value	Mina 9-34
Mina_9_40.measurement_values.ch1.value	Mina 9-40
Mina_9_43.measurement_values.ch1.value	Mina 9-43
Mina_9_5.measurement_values.ch1.value	Mina 9-5
Mina_9_57.measurement_values.ch1.value	Mina 9-57
Mina_9_65.measurement_values.ch1.value	Mina 9-65
Mina_9_71.measurement_values.ch1.value	Mina 9-71
Mina_9_73.measurement_values.ch1.value	Mina 9-73
Mina_9_80.measurement_values.ch1.value	Mina 9-80
Mina_9_83.measurement_values.ch1.value	Mina 9-83
Mina_9_85.measurement_values.ch1.value	Mina 9-85
Mina_9_86.measurement_values.ch1.value	Mina 9-86
Mina_9_93.measurement_values.ch1.value	Mina 9-93
MK_DL_ARF_1056.Status.PV	Arafat 1056
MK_FS1_FM.Flow_PV	Filling Station 1 Flow
MK_FS1_FM.Total_Flow_PV	Filling Station 1 Total F
MK_FS2_FM.Flow_PV	Filling Station 2 Flow
MK_FS2_FM.Total_Flow_PV	Filling Station 2 Total F
MK_FS3_FM.Flow_PV	Filling Station 3 Flow
MK_FS3_FM.Total_Flow_PV	Filling Station 3 Total F
MK_FS4_FM.Flow_PV	Filling Station 4 Flow
MK_FS4_FM.Total_Flow_PV	Filling Station 4 Total F
MK_MIL_TK_Booster_PMP1.Status.Trip	
MK_MIL_TK_Booster_PMP2.Status.Trip	
MK_MIL_TK_CLT1.Chlorine_PV	Million Tank Residual C
MK_MIL_TK_COND.Conductivity_PV	Million Tank Conductivi
MK_MIL_TK_Dosing.Chlorine_PV	Million Tank Chlorine D



User can show the historical data by using start end date and time selection which is located on upper left corner on the trend screen. Also user can see pre and post trend data by using forward and backward button.



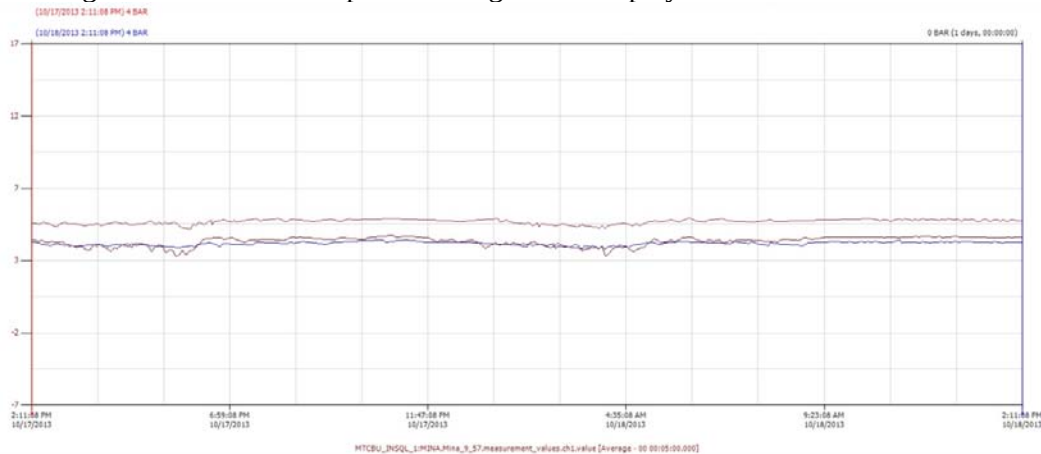
Users also have options to change the type of display for trending value by clicking on any type shown below.

Type 1- Min Max

Type2- Average

Type3- Scattered

Following window is the example of average trend display screen.



Selected trend tags will show in following window. User can see all information such as tag name, description color code, values and time offset.

Tag Name	Description	Server	Color	Units	Minimum	Maximum	IO Address	Time Offset
☒ MINA.Mina...	Mina 9-34	MTCBU_I...	BAR	BAR	-7	17	\\172.30.17.25\FSGat...	0:00:00...
☒ MINA.Mina...	Mina 9-57	MTCBU_I...	BAR	BAR	-7	17	\\172.30.17.25\FSGat...	0:00:00...
☒ MINA.Mina...	Mina 9-65	MTCBU_I...	BAR	BAR	-7	17	\\172.30.17.25\FSGat...	0:00:00...



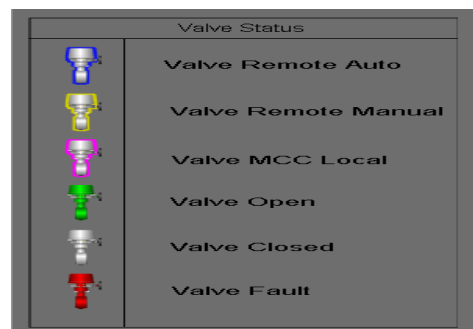
LEGENDS:

We also have the Legends as given below. Legend screen helps user to identify all standard symbols and parameters information which are been used in the application. By clicking Legends button from header section, user will get the Legends section screen.



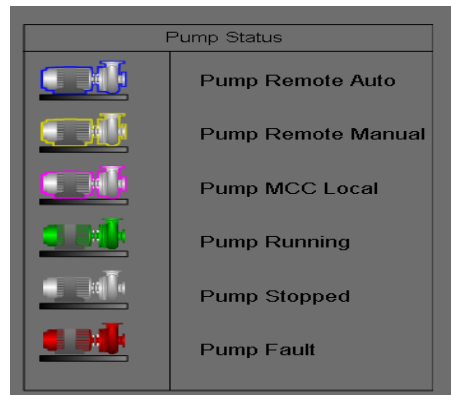
Below describe the more information about all standard symbols

- Valve Status: Below image indicate that the valve status.

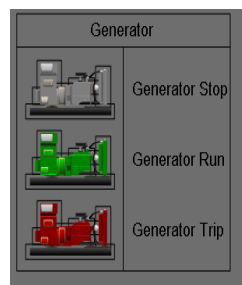


- ✓ Valve Remote Auto: The Gray color with blue border indicated that valve is Remote auto mode.
- ✓ Valve Remote Manual: The Gray color with yellow border indicated that valve is in remote manual mode.
- ✓ Valve Mcc Local: The Gray color with Pink border indicated that valve is in local mode.
- ✓ Valve Open: The Green color valve indicate that the valve is open.
- ✓ Valve Closed: The Gray Color indicates that vales are closed.
- ✓ Valve Fault: The Red color valve indicates that the valve is fault mode.

- Pump Status: Below image indicate that the pump status.

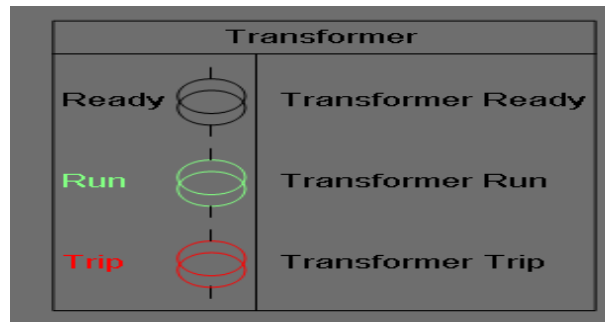


- ✓ Pump Remote Auto: The Gray color with blue border indicated that pump is Remote auto mode.
 - ✓ Pump Remote Manual: The Gray color with yellow border indicated that pump is in remote manual mode.
 - ✓ Pump Mcc Local: The Gray color with Pink border indicated that pump is in local mode.
 - ✓ Pump Open: The Green color pump indicate that the pump is open.
 - ✓ Pump Closed: The Gray Color indicates that vales are closed.
 - ✓ Pump Fault: The Red color Pump indicates that the pump is fault mode.
- Generator Status: Below image indicate that the generator status.



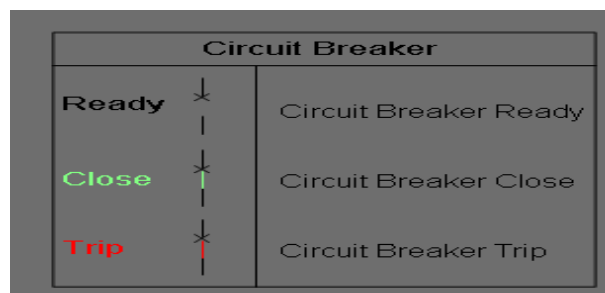
- ✓ Generator Run: The Green color of generator indicates that the generator is in running mode.
- ✓ Generator Stop: The Gray Color indicates that generator is stop mode.
- ✓ Generator Trip: The Red color generator indicates that the generator is fault mode.

- Transformer Status:
Below image indicate that the Transformer status.



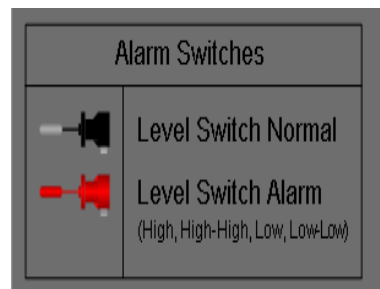
- ✓ Run: The Green color indicates that the transformer is in running mode.
- ✓ Ready: The Black Color indicates that Transformer is in normal mode.
- ✓ Trip: The Red color indicates that the Transformer is tripped.

- Circuit Breakers Status:
Below image indicate that the Circuit Breakers status.



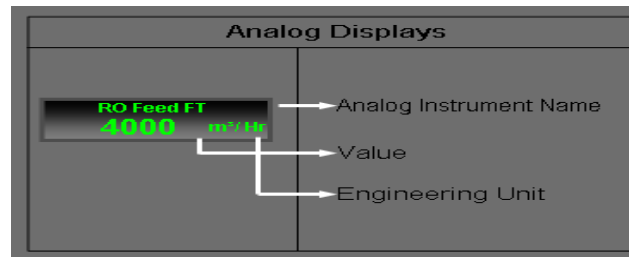
- ✓ Close: The Green color indicates that the CB is closed.
- ✓ Ready: The Black Color indicates that CB is in open mode.
- ✓ Trip: The Red color indicates that the CB is tripped.

- Alarm Switches Status:
Below image indicate that the alarm switches status.

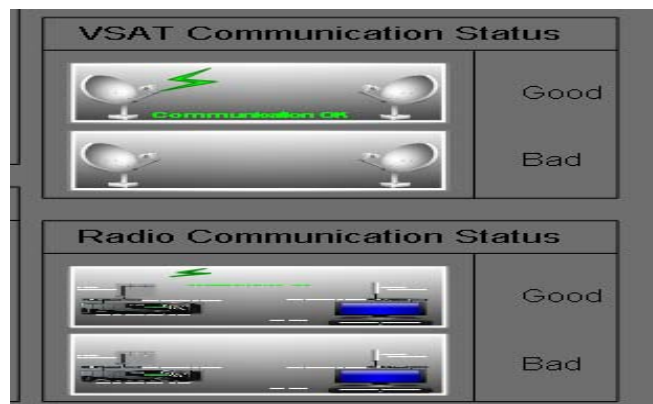


- ✓ Normal: The Black and gray color indicates that the no alarm status.
- ✓ Alarm: The Red Color indicates that alarm status on. Alarm switch will High, High High, Low Low, low is in open mode.

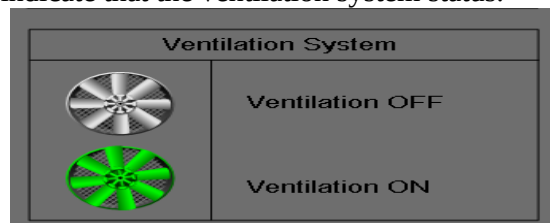
- Analog Display Status:
Below image indicate that the analog display status.



- ✓ Normal: The Black and gray color indicates that the no alarm status.
- ✓ Alarm: The Red Color indicates that alarm status on. Alarm switch will High, High High, Low Low, low is in open mode.
- Communication Status:
Below image indicate that the communication display status.



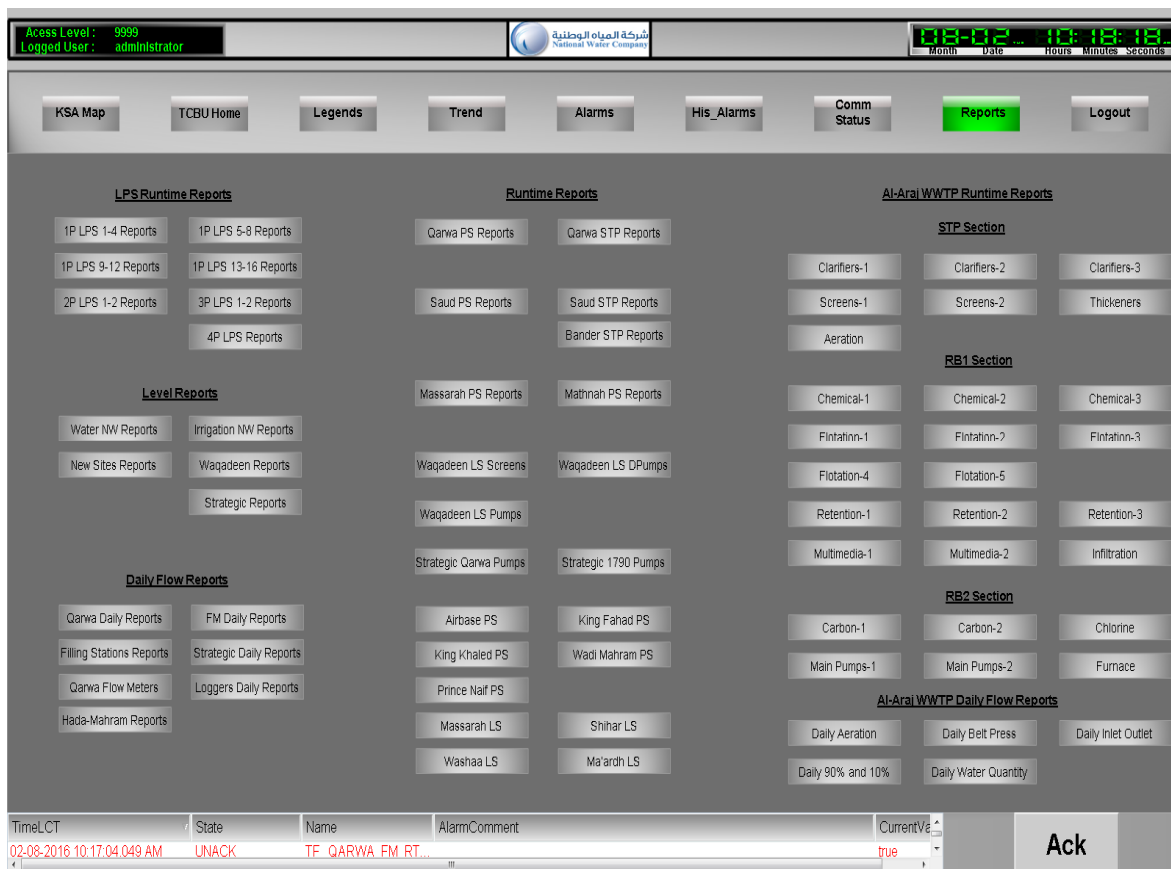
- ✓ Communication Good: The Green color text with message 'Communication OK' indicates that the communication is good.
- ✓ Communication Bad: The Red color text with message 'Communication Failed' indicates that the communication is bad.
- Ventilation Status:
Below image indicate that the ventilation system status.



- ✓ Ventilation On: The Green color fan indicates that the fan is on.
- ✓ Ventilation Off: The Red color fan indicates that the fan is off.

REPORT:

After pressing Reports button, user will get the report screen of taif wwtp. From here operator can see or can print reports of individual sections and individual parameters. For opening reports, appropriate user level logging required.



TimeLCT	State	Name	AlarmComment	CurrentVal
02-08-2016 10:17:04.049 AM	UNACK	TF-QARWA-FM-RT...		true

Total daily run hour of each pump can be viewed in report in section area buttons of taif. Daily total flow and hourly level reports also user can see by pressing respective buttons. After pressing the report button user will get the date time dialog box where user can enter the start and end date for selected report. Upon selecting required dates user will get respective report.



Below image show enter parameter dialog box.

The dialog box titled "Enter Parameter Values" contains a "Parameter Fields:" section with a list box showing "@FromDate" (selected) and "@ToDate". Below this is a "Discrete Value" section with a text box containing "9/ 1/2015" and a "Set to NULL value" checkbox. At the bottom are "OK" and "Cancel" buttons.

After the entering parameter user will get respective report. Report page shown below.

The report page displays the "TAIF CENTRAL SCADA SYSTEM" logo and title. It includes a header section with "Start Date: 17-Feb-2016", "Operator: Administrator", and "End Date: 25-Feb-2016". The main content is a table titled "DAILY PUMPS RUNTIME" showing runtime data for four pumps (PUMP #1, PUMP #2, PUMP #3, PUMP #4) over a period of 10 days (from 17-Feb-2016 to 25-Feb-2016). The table has columns for "Date Time", "PUMP #1 Hr : Min", "PUMP #2 Hr : Min", "PUMP #3 Hr : Min", and "PUMP #4 Hr : Min". The data shows varying runtime hours and minutes for each pump over the specified period.

Date Time	PUMP #1 Hr : Min	PUMP #2 Hr : Min	PUMP #3 Hr : Min	PUMP #4 Hr : Min
17-Feb-2016	0 : 0	0 : 0	0 : 0	34 : 4
18-Feb-2016	0 : 1	0 : 0	0 : 0	0 : 0
19-Feb-2016	0 : 26	2 : 44	0 : 0	0 : 0
20-Feb-2016	0 : 0	0 : 0	0 : 0	0 : 0
21-Feb-2016	0 : 0	0 : 0	9 : 42	0 : 0
22-Feb-2016	0 : 0	0 : 0	0 : 0	42 : 7
23-Feb-2016	2 : 46	0 : 0	0 : 0	0 : 0
24-Feb-2016	0 : 30	2 : 31	0 : 0	0 : 0
25-Feb-2016	0 : 0	0 : 30	2 : 45	0 : 0
Total:	3 : 43	4 : 45	12 : 27	76 : 11