1. Introduction

This program provides the engineer with all the mud engineering inputs and calculations required for both Water Based Mud (WBM) and Oil Based Mud (OBM). Figures and flow charts are used to aid the engineer to navigate through the program. As the data is entered in the various dialog boxes, the data bases, reports and the charts are updated.

2. Operation

A. Main Menu

The Main Menu is the entry point to all functions of the program. For all Main Menu button functions refer to Figure 2.
Figure 2 shows all the mud engineering button functions and references to where the relevant information is to be found.

Figure 2 Main Menu Button Functions
B. Starting a New Well

Before starting a new well it is necessary to clear all the previously entered data and enter the units to be used throughout the program. These can be either API or Metric or a combination of both.

(1) Clear Records

On the Main Menu page, select Start a New Well (Ref. Figure 1). The Clear Records Page is shown (Ref. Figure 3).

![Clear Records Page](image)

Select Clear the Database and start a new well. After approximately 10 seconds a message box is shown indicating that these databases have been deleted:
- Mud Received
- Mud Check Report
- Mud Materials Inventory.

Select OK. The program returns to the Main Menu (Ref. Figure 1).

(2) Enter Units

On the Main Menu page, select Select Units API or Metric. A warning is shown. This informs the operator that the selected units will be used throughout the entire program.

Select OK. The Select Units dialog box is shown (Ref. Figure 4).
On the left margin of the Select Units dialog box, all previously selected units are shown. This is for reference only. These units can be changed using the appropriate entry field.

When all the required data has been entered, select [Continue]. The program returns to the Main Menu (Ref. Figure 1).
C. Mud Reports and Databases Menu

On the Main Menu page, select Main Input. The Mud Reports and Databases Menu is shown (Ref. Figure 5).

The Mud Reports and Databases Menu is the entry point for all the mud engineering parameters. Figure 6 shows each button function. References to figures, flow charts and page numbers are a guide to where that particular information is to be found.
Figure 6 Mud Reports and Databases Menu Button Functions
(1) Start a New Well Report.
In this section of the Mud Reports and Databases Menu, the Report Header and the Mud Specs dialog boxes are accessed. Flow Chart A and Flow Chart B (Start a New Well Report) are to help the mud engineer navigate this section of the program.

(a) Mud Specs

On the Mud Reports and Databases Menu, select **Mud Specs**. The Mud Specifications dialog box is shown (Ref. Figure 7).
Selecting \(\text{OK}\), after entering the appropriate data, returns the program to the Mud Reports and Databases Menu.

(b) Report Header

On the Mud Reports and Databases Menu, select \(\text{Report Header}\). The Report Header dialog box is shown (Ref. Figure 8).
All the information relating to the well is entered on the Report Header data input form.

1. **Report Dates**

   On the Report Header dialog box, select **Report Date and Number**. The Report Dates dialog box is shown (Ref. Figure 9).

   ![Figure 9 Report Dates](image)

   The Spud Date, Report Date and Report Number are entered manually.

   When **Continue** is selected, the program returns to the Report Header dialog box.

2. **Update Mud Specs**

   On the Report Header dialog box, select **Update Mud Spec**. The Mud Specifications dialog box is shown (Ref. Figure 7).

   After the appropriate data has been entered or edited, selecting **OK** returns the program to the Report Header dialog box (Ref. Figure 8).
3. Mud Materials Inventory & Usage

On the Report Header dialog box, select . The Mud Materials & Usage dialog box is shown (Ref. Figure 10).

![Mud Materials Inventory & Usage](image)

Figure 10 Mud Materials Inventory & Usage

The Mud Materials Inventory & Usage dialog box is used to input all the mud materials, their costs, quantities and daily usage.
Selecting Help on the Mud Materials Inventory & Usage dialog box shows the Mud Stocks and Usage Help page (Ref. Figure 11)

![Mud Stocks and Usage Help](image)

1. When you start a new well enter the starting mud materials inventory
2. Enter all the Unit Sizes of each mud material. For example, 100lb sacks, 50 kg sacks, chemical additive Barrels or gallons.
3. Next enter the unit cost of each product
4. The Unit Size and Unit Cost per product will usually remain the same so you will only need to enter the data once, should a product change in price then you can edit the previous price with the new price, just double click on an entry to highlight it and make your changes.
5. Once you have entered the 24 hour daily mud material usage the daily cost will be calculated and entered in the database and on the Mud Report.

Please note that all renaming of mud materials should be done in this form only

Figure 11 Mud Stocks and Usage Help

This page provides a guide on how to utilize the Mud Materials & Usage dialog box.

Select **OK**. The program returns to the Mud Materials Inventory & Usage dialog box.
**b. Database Update**

After entering/editing the data on Mud Materials Inventory & Usage dialog box, select **Finish**. The Save Mud Materials Update box is shown (Ref. Figure 12).

![Figure 12 Save Mud Materials Update](image)

Selecting **Yes** in the update box returns the program to the Mud Reports and Databases Menu (Ref. Figure 5).

Selecting **No** in the update box shows the Mud Materials DataBase update box (Ref. Figure 13).

![Figure 13 Mud Materials Database Update](image)

Selecting **Enter this as a new record** updates the mud materials database with the previously entered data. A message is shown indicating that the mud materials data base has been updated.
Selecting , in this message box, returns the program to the Mud Reports and Databases Menu (Ref. Figure 5).

Selecting , in this message box, updates and overwrites the previous 24 hour entry. A message is shown indicating that the mud materials database has been updated.

Selecting , in this message box, returns the program to the Mud Reports and Databases Menu (Ref. Figure 5).

Flow Chart B: Start a New Well Report
c. Mud Stocks Received

On the Mud Materials Inventory & Usage dialog box (Ref. Figure 10), selecting [Mud Received] shows the Mud Stocks Received dialog box (Ref. Figure 14).

![Mud Stocks Received dialog box]

Figure 14 Mud Stocks Received

This dialog box is used to update the mud stock inventory. Selecting [Cancel/Clear All] clears all the existing data.

If new mud materials are to be added, selecting [Change Mud Material Descriptions] shows the Mud Materials Inventory & Usage dialog box (Ref. Figure 10). In this dialog box, new mud materials can be added, or existing mud materials can be edited.

Select [Mud Received] in the Mud Materials Inventory & Usage dialog box. The program returns to the Mud Stocks Received dialog box with the new or edited mud materials added to the Mud Stocks Received dialog box.

After entering any new data, select [Continue & Update]. The Mud Materials Received update box is shown (Ref. Figure 15).
Selecting \textbf{Enter this as a new record} updates the mud materials received data base. A message is shown indicating the mud materials received data base has been updated.

Selecting \textbf{OK} in this message box, returns the program to the Mud Materials Inventory & Usage dialog box (Ref. Figure 10).

Selecting \textbf{Over Write the previous 24 hour entry} overwrites and updates the previous 24 hour entry. A message is shown indicating that the mud materials received data base has been updated.

Selecting \textbf{OK}, in this message box, returns the program to the Mud Materials Inventory & Usage dialog box (Ref. Figure 10).
d. Mud Stocks Transferred

Selecting on the Mud Materials Inventory & Usage dialog box (Ref. Figure 10) shows the Mud Transferred dialog box (Ref. Figure 16).

![Mud Transferred dialog box](image)

**Figure 16 Mud Transferred**

This dialog box is used to update the mud stocks transferred inventory.

Selecting clears all the existing data.

When new mud materials are to be added, selecting shows the Mud Materials Inventory & Usage dialog box (Ref. Figure 10). On this dialog box, new mud materials can be inserted, or existing mud materials can be edited.

Select on the Mud Materials Inventory & Usage dialog box. The program returns to the Mud Transferred dialog box with the new or edited mud materials added to the Mud Transferred dialog box.

After the new data has been entered, select . The Mud Products Transferred Database update box is shown (Ref. Figure 17).
Selecting **Enter this as a new record** updates the mud products transferred database. A message is shown indicating that the mud products transferred database has been updated.

Selecting **OK** in this message box, returns the program to the Mud Materials Inventory & Usage dialog box (Ref. Figure 10).

Selecting **Over Write the previous entry** overwrites and updates the previous 24 hour entry. A message is shown indicating that the mud products transferred database has been updated.

Selecting **OK** in this message box, returns the program to the Mud Materials Inventory & Usage dialog box (Ref. Figure 10).

(2) Mud Report

(a) Main Data Input

In this section of the Mud Reports and Databases Menu, the Main Dialog box is accessed. Flow Chart C (Main Data Input) is to help the mud engineer navigate this section of the program.
On the Main Menu, select **Main Data Input**. The Main Data Input dialog box is shown with the Drill Pipe & BHA – Pump Data tab activated (Ref. Figure 18).

![Figure 18 Main Data Input (Drill Pipe & BHA - Pump Data)](image)

1. **Drill Pipe & BHA – Pump Data**

   Data is entered in these dialog boxes
   
   **a. Drill Pipe:**
   - Type
   - Outside Diameter (OD)
   - Inside Diameter (ID)
   - Weight
   - Length.

   **b. DC’s:**
   - Outside Diameter (OD)
   - Inside Diameter (ID)
   - Weight
   - Length.
c. Pump Data:
- Stroke
- Liner Size
- SPM
- Pump Manufacturer.

d. Block Weight.

The pump outputs are shown in the panel to the right of the Pump Data.

e. Pump Type

Selecting shows the Pump Data selection dialog box (Ref. Figure 19)

![Pump Data Selection](image)

Selecting [Triplex] returns the program to the Main Data Input (Drill Pipe & BHA – Pump Data) dialog box.

Selecting [Duplex] shows the Duplex Rod Size dialog box (Ref. Figure 20).

![Duplex Rod Size](image)

The rod Outside Diameter (OD) for each pump is entered on this dialog box.

Select [OK] after entering the data, the program returns to the Data Input (Drill Pipe & BHA – Pump Data) dialog box.
f. Look up String Data

Selecting **Look up DP and DC Data** shows the Look up String data page (Ref. Figure 21). This page is for information only.

![Lookup String Data](image)

**Figure 21 Lookup String Data**

Selecting **Close** returns the program to the Main Data Input (Drill Pipe & BHA - Pump Data) dialog box.
9. **Volumes and Strokes**

Selecting Lookup Volumes and Strokes in the Main Data Input (Drill Pipe & BHA - Pump Data) dialog box shows the Volumes and Strokes page (Ref. Figure 22).

![Volumes and Strokes Page](image)

**Figure 22 Volumes and Strokes**

This page is mainly an information page. The hole washout calculation can be entered manually.

Selecting Close returns the program to the Main Data Input (Drill Pipe & BHA - Pump Data) dialog box.

Selecting OK on the Main Data Input (Drill Pipe & BHA - Pump Data) dialog box updates the applicable data base and returns the program to the Mud Reports and Databases Menu (Ref. Figure 5)
2. Casing Data

Selecting the **Casing Data** tab on the Main Data Input (Drill Pipe & BHA - Pump Data) dialog box shows the Main Data Input (Casing Data) dialog box (Ref. Figure 23).

![Main Data Input (Casing Data)](image)

**Figure 23** Main Data Input (Casing Data)

a. Clear Casing Data

Selecting **Clear Casing Data** clears any existing casing data. Any data relating to:
- Conductor
- Surface
- Liner 1
- Liner 2
- Liner 3
- Production csg
is entered in the applicable dialog box.

Selecting **OK** updates the database and returns the program to the Mud Reports and Databases Menu (Ref. Figure 5).
b. Lookup CSG Data

Selecting an information page, with the casing data, is shown (Ref. Figure 24).

![Figure 24 Casing Data](image)

Selecting returns the program to the Main Data Input (Casing Data) dialog box.

Selecting updates the applicable data base and returns the program to the Mud Reports and Databases Menu (Ref. Figure 5).
(b) Mud Check

In this section of the Mud Reports and Databases Menu, the Full Mud Check dialog box is accessed. Flow Chart D (Full Mud Check) is to help the mud engineer navigate this section of the program.
On the Mud Reports and Databases Menu (Ref. Figure 5), select **Mud Check**. The Full Mud Check dialog box is shown with the Water Base Mud tab activated (Ref. Figure 25).

![Figure 25 Full Mud Check (Water Base Mud)](image)

1. **Water Base Mud**
   
   All factors relating to the water base mud are entered in this dialog box.

   a. **KCL Reference**
      
      Selecting **KCL Reference Table** shows the KCL Reference table (Ref. Figure 26).
2. Oil Base Mud

Figure 26 KCL Reference Table

Selecting returns the program to the Full Mud Check (Water Base Mud) dialog box.

b. Pf/Mf Relation

Selecting shows the Pf/Mf Relation Chart (Ref. Figure 27).

Figure 27 Pf/Mf Relation

Selecting returns the program to the Full Mud Check (Water Base Mud) dialog box.
Selecting the [Oil Base Mud - Depths and Report time] tab on the Full Mud Check (Water Base Mud) shows the Full Mud Check (Oil Base Mud) dialog box (Ref. Figure 28).

All factors relating to the water base mud are entered in this dialog box.

3. Water Base Mud and Oil Based Mud
The following functions are common to both the Water Base Mud and the Oil Base Mud dialog boxes.

a. Clear Old Report
   Selecting **Clear Old Report** deletes the existing data.

b. Calculations
   Selecting **My Calculations** shows a blank worksheet. Any personal calculations can be entered on this worksheet. Selecting **Get Calculator** on either the worksheet or the Full Mud Check dialog box shows a calculator.
   Selecting **Mud Check** on the worksheet returns the program to the Full Mud Check dialog box.

c. Solids Equipment
   Selecting **Solids Equipment** shows the Solids Equipment dialog box with the **Vibrating** tab activated (Ref. Figure 29).

![Figure 29 Solids Equipment (Vibrating)]
Selecting **Clear Old Report** deletes the existing data. New data relating to the vibrating solids can now be entered.

Selecting **Close** saves the data and returns the program to the Full Mud Check dialog box.

Selecting the **Flowing** tab shows the flowing solids dialog box (Ref. Figure 30)

![Figure 30 Solids Equipment (Flowing)](image)

Selecting **Clear Old Report** deletes the existing data. New data relating to the flowing solids can now be entered.

Selecting **Close** saves the data and returns the program to the Full Mud Check dialog box.
d. Rheology

Selecting **Rheology** shows the Rheology Input dialog box (Ref. Figure 31).

![Figure 31 Rheology Input](image)

Selecting **Clear Old Data** deletes the existing data. New data relating to the rheology can now be entered.

Selecting **Close** saves the data and returns the program to the Full Mud Check dialog box.


e. **Volume Accounting**

Selecting the **Volume Accounting** option shows the Volume Accounting dialog box (Ref. Figure 32).

![Volume Accounting Dialog Box](image)

<table>
<thead>
<tr>
<th><strong>Volume</strong></th>
<th><strong>bbls</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Water added</td>
<td>100</td>
</tr>
<tr>
<td>Brine</td>
<td>50</td>
</tr>
<tr>
<td>Material</td>
<td>5</td>
</tr>
<tr>
<td>Mud Lost in Hole</td>
<td>10</td>
</tr>
<tr>
<td>Mud Lost Surface</td>
<td>15</td>
</tr>
<tr>
<td>Mud Lost Solids Equipt</td>
<td>10</td>
</tr>
<tr>
<td>Liquid Mud Received</td>
<td>2</td>
</tr>
<tr>
<td>Liquid Mud Returned</td>
<td>2</td>
</tr>
<tr>
<td>Reserve Mud</td>
<td>1000</td>
</tr>
<tr>
<td>Diesel Added</td>
<td>50</td>
</tr>
</tbody>
</table>

Figure 32 Volume Accounting

Selecting the **Clear Volumes** button deletes the existing data. New data relating to the volume accounting can now be entered.

Selecting the **OK** button saves the data and returns the program to the Full Mud Check dialog box.
f. **Drilling Remarks**

Selecting **Drilling Remarks** shows the Add Remarks to the API Report Form (Drilling) dialog box (Ref. Figure 33).

![Figure 33 Drilling Remarks](image)

Selecting **Clear Text** deletes the existing text. New text can now be entered.

Selecting **Close** saves the text and returns the program to the Full Mud Check dialog box.

g. **Fluids Remarks**

Selecting **Fluids Remarks** shows the Add Remarks to the API Report Form (Fluids) dialog box (Ref. Figure 34).

![Figure 34 Fluids Remarks](image)

Selecting **Clear Remarks** deletes the existing text. New text can now be entered.

Selecting **Close** saves the text and returns the program to the Full Mud Check dialog box.
h. Mud Report

The mud report saves all the Mud Check data and displays the selected mud report (WBM/Completion Fluid or OBM). Flow Chart F (Full Mud Check - Mud Report) is to help the mud engineer navigate this section of the program.
In the Full Mud Check dialog box (Ref. Figure 25), selecting shows the Save Mud Check message box (Ref. Figure 35).

Figure 35 Save Mud Check

Selecting shows the Report Database update box (Ref. Figure 36).

Figure 36 Report Database Update

Selecting updates the mud report data base. A message is shown indicating that the mud report data base has been updated.

Selecting, in this message box, updates the mud properties recap and remarks recap. A message is shown indicating that the mud properties recap and remarks recap have been updated.

Selecting, in this message box, shows the View Mud Report dialog box (Ref. Figure 37).

Selecting, in the Reports Database dialog box, overwrites and updates the previous 24 hour entry. A message box is shown indicating that the mud report data base has been updated.
Selecting OK, in this message box, shows the View Mud Report dialog box (Ref. Figure 37).

![View Mud Report](image)

Figure 37 View Mud Report

A message is shown indicating which of the reports is presently selected (WBM or Completion Fluid).

Select **View WBM / Completion Fluid Report** to view the currently selected WBM/Completion Fluid report.

Select **View OBM Report** to view the OBM report.

Select **Change the WBM report to Completion Fluid** to change the report header from the currently selected header to the alternative header (WBM or Completion Fluid). The Change Report Header WBM-Completion Fluid dialog box is shown (Ref. Figure 38).

![Change Report Header](image)

Figure 38 Change Report Header
Select the preferred report header (WBM or Completion Fluid). The selected report is shown. To return to the Main Menu (Ref. Figure 1) select the 'Menu' tab on the displayed report.

### Finish

The finish function saves all the previously entered Mud Check data to the appropriate databases, reports and charts. Flow Chart F (Full Mud Check - Finish) is to help the mud engineer navigate this section of the program.

Flow Chart F: Full Mud Check – Finish

Selecting 'Finish' on the Full Mud Check dialog box (Ref. Figures 15 &16) shows the Report Data Base update box (Ref. Figure 39).
Selecting **Enter this as a new record and update the Properties Recap**, in the Report Database update box, updates the mud report data base. A message is shown indicating that the mud report data base has been updated.

Selecting **OK**, in this message box, updates the mud properties recap and remarks recap. A message is shown indicating that the mud properties recap and remarks recap have been updated.

Selecting **OK**, in this message box, shows the Update the Pump Strokes update box (Ref. Figure 40).

Selecting **Over Write the previous 24 hour entry**, in the reports Database dialog box, overwrites and updates the previous 24 hour entry. A message is shown indicating that the mud report data base has been updated.

Selecting **OK**, in this message box, shows the Update the Pump Strokes update box (Ref. Figure 40).

Selecting **No** returns the program to the Main Menu (Ref. Figure 1).
Selecting **Yes** shows the Data Input (Drill Pipe & BHA - Pump Data) dialog box (Ref. Figure 18). The pump strokes are updated in the Pump Data section of the Data Input dialog box.

Selecting **OK**, in the Data Input dialog box, returns the program to the Main Menu (Ref. Figure 1).

(c) Mud Solids

Selecting **Mud Solids** on the Mud Reports and Databases Menu (Ref. Figure 5) shows all the water mud solids and all the oil mud solids/chlorides (Ref Figure 41 and Figure 41A).

<table>
<thead>
<tr>
<th>WATER MUD SOLIDS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flow Line</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td><strong>Mud weight</strong></td>
</tr>
<tr>
<td><strong>Retort % Solids</strong></td>
</tr>
<tr>
<td><strong>Retort % Water</strong></td>
</tr>
<tr>
<td><strong>Retort % Oil</strong></td>
</tr>
<tr>
<td><strong>MBT equiv lb/bbl</strong></td>
</tr>
<tr>
<td><strong>ml of AgNO3, 0282/282</strong></td>
</tr>
<tr>
<td><strong>S.G. of Oil</strong></td>
</tr>
<tr>
<td><strong>Low gravity solids %</strong></td>
</tr>
<tr>
<td><strong>Low gravity solids lb/bbl</strong></td>
</tr>
<tr>
<td><strong>High gravity solids %</strong></td>
</tr>
<tr>
<td><strong>High gravity solids lb/bbl</strong></td>
</tr>
<tr>
<td><strong>Bentonite %</strong></td>
</tr>
<tr>
<td><strong>Bentonite lb/bbl</strong></td>
</tr>
<tr>
<td><strong>Drilled Solids %</strong></td>
</tr>
<tr>
<td><strong>Drilled Solids lb/bbl</strong></td>
</tr>
<tr>
<td><strong>A.S.G</strong></td>
</tr>
<tr>
<td><strong>Corrected % Solids</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>KCL Polymer Mud</th>
<th><strong>Flow Line</strong></th>
<th><strong>Suction</strong></th>
<th><strong>Weighted</strong></th>
<th><strong>No</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>KCL</strong></td>
<td>% v/v</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td><strong>Potassium Ion</strong></td>
<td>mg/l</td>
<td>6</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Corrected LGS</strong></td>
<td>% v/v</td>
<td>16.55</td>
<td>257.58</td>
<td></td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>S.G</td>
<td>1.03</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>Kg/M³</td>
<td>1030.51</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td><strong>Pressure Gradient</strong></td>
<td>psi/ft</td>
<td>0.45</td>
<td>0.00</td>
<td></td>
</tr>
</tbody>
</table>

Figure 41 Water Mud Solids
Selecting **Change Units of Measure** shows a message box indicating that changing the units will be universal throughout the program.

Selecting **OK**, in this message box, shows the Select Units dialog box (Ref. Figure 4). The units of measurement are changed in this dialog box.

Selecting **Continue** returns the program to the Main Menu.
(d) Databases

In the Databases panel, on the Mud Reports and Databases Menu (Ref. Figure 5), the various databases can be quickly viewed. The databases are:
- Mud Stocks Database
- Mud Report Database
- Mud Received Database
- Mud Transferred Database.

Selecting ________Menu________ on any of the databases returns the program to the Main Menu.

(e) View Reports

In the Select Report to View panel, on the Mud Reports and Databases Menu (Ref. Figure 5), the various reports can be quickly viewed. These reports are:
- View API Mud Report
- View Mud Properties Recap
- View Mud Materials Recap
- View Remarks Recap.

Selecting ________View API Mud Report________ shows the View Mud Report dialog box (Ref. Figure 37).
Selecting ________Menu________ on any of the reports returns the program to the Main Menu.
(f) Pills and Calculations

Selecting **Calculations** from the Main Menu (Ref. Figure 1) shows the Pills and Calculations dialog page (Ref. Figure 42).

![Pills and Calculations Dialog Box](image)

From this dialog box, the following are accessed:
- LCM Water Squeeze Pill dialog box
- LCM Pills dialog box
- Spotting Oils dialog box
- OBM Corrections dialog box
- Blending
- Blending and Weighing-up Mud dialog box
- The EMW with different mud columns calculation dialog box
- Mud Solids Correction:
  - Water Mud Solids dialog box
  - Oil Mud Solids/Chlorides dialog box
- Well Control
  - Well Control (Kick) Program dialog box
  - Pump Strokes Calculations dialog box
- Hole Conditioning Prior to Logging
  - Using 1st Section of Hole dialog box
  - Using 2nd Section of Hole dialog box.

The relevant data is entered into the appropriate data boxes. All calculations are done automatically.
1. **Print Reports**

Selecting **Print Reports** on the Main Menu (Ref Figure 1) shows the Print Central dialog box (Ref. Figure 43). The selected report is automatically printed.
2. Export Reports

Selecting **Export Reports** on the Main Menu (Ref Figure 1) shows the Export Reports dialog box (Ref. Figure 44).

![Figure 44 Export Reports](image)

When selecting a report for export, a message box is shown indicating that the report will be exported to a selected folder.

Selecting **OK**, in this message box, gives the option of which folder to export the file to. After saving the file a message box indicating the file has been saved is shown.

Selecting **OK**, in this message box, returns the program to the Main Menu.
3. Email Reports

Selecting __________ Email Reports__________ on the Main Menu (Ref Figure 1) shows the Email Reports dialog box (Ref. Figure 45).

Figure 45 Email Reports

The Email Reports dialog box shows a warning to select an Email program. After selecting a report for Emailing, a message box is shown indicating that the report will be exported to a selected folder.

Selecting __________ OK__________ in this message box, gives the option of which folder to export the file to. After saving the file a message box indicating the file has been saved is shown.

Selecting __________ OK__________, in this message box, opens the selected Email program. The selected report is automatically attached to the Email. The recipients Email address must be is inserted before sending the report.
Well Schematics

Selecting **Well Schematic** on the Main Menu (Ref. Figure 1) shows the Well Bore Schematic dialog box (Ref. Figure 46).

![Well Bore Schematic](image)

Figure 46 Well Bore Schematic

Up to four casing sections can be selected. Figure 47 these casing sections.

To update the well geometry, select **Update Well Geometry** on the Well Bore Schematic dialog box. The Main Data Input (Drill Pipe & BHA – Pump Data) dialog box is shown (Ref. Figure 18).

The DP and the DC parameters are entered/edited in this dialog box.

Selecting the **Casing Data** tab on the Data Input (Drill Pipe & BHA – Pump Data) dialog box shows the Main Data Input (Casing Data) dialog box (Ref Figure 23). The liner parameters are entered or edited in this dialog box.
Selecting **Charts** on the Main Menu shows a message box, indicating that the charts will be developed as the databases are updated. Figure 47 shows the Chemicals Used chart.

Selecting **Next Chart** shows these charts in sequence:
- Chemicals Used and Cost
- Depth v Mud Cost
- Total Volumes
- Depth v Days
- Depth v Mud Weight

Selecting **Menu** returns the program to the Main Menu.