Watermaster Well Database
System Improvements -
WWDIM
Software Requirements Specification

Version D0.2
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<td>Detailed document</td>
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Reviewers

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# 1 Introduction

## 1.1 Purpose

Purpose of this document is to define and capture requirements related to the improvements on the water master database system.

## 1.2 Scope

Scope of this document is to give details of the functional and non-functional requirements of Water Master Database System and its components. Note that this document does not cover all the existing functionalities of the existing System but only the functionality related to the improvements. The target audience would be all the stakeholders of the project.

## 1.3 Definition, Acronym and Abbreviations

### 1.3.1 Definitions

N/A

### 1.3.2 Acronyms and Abbreviations

<table>
<thead>
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<th>Acronym / Abbreviation</th>
<th>Denotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRS</td>
<td>Software Requirement Specification</td>
</tr>
<tr>
<td>DB</td>
<td>Data Base</td>
</tr>
<tr>
<td>WWDIM</td>
<td>Watermaster Well Database System Improvements</td>
</tr>
<tr>
<td>MPWMD</td>
<td>Monterey Peninsula Water Management District</td>
</tr>
<tr>
<td>ESRI</td>
<td>Environmental Systems Research Institute</td>
</tr>
<tr>
<td>API</td>
<td>Application Programming Interface</td>
</tr>
<tr>
<td>DLL</td>
<td>Dynamic Link Library</td>
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## 1.4 References and Supporting Documentations

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<tr>
<th>Document</th>
<th>Version</th>
<th>Author</th>
<th>Document Name/Location</th>
</tr>
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<td>1.WWDIM-SOW</td>
<td>V1.0</td>
<td>Zone24x7</td>
<td>Zone24x7 SOW - MPWMD Watermaster Well Database System – Improvements V1.0</td>
</tr>
<tr>
<td>2.Initial requirement list</td>
<td></td>
<td>MPWMD</td>
<td><a href="https://svn.zone24x7.lk/svn/WWDIM/trunk/Project%20Phases/Requirements/Client%20Documents/COMPILATION%20OF%20ENHANCEMENTS%20TO%20THE%20WA">https://svn.zone24x7.lk/svn/WWDIM/trunk/Project%20Phases/Requirements/Client%20Documents/COMPILATION%20OF%20ENHANCEMENTS%20TO%20THE%20WA</a></td>
</tr>
<tr>
<td>Software Requirements Specification</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3.WWDIM-BRS</strong></td>
<td>V2.0</td>
<td><strong>TERMASTER.DOC</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Watermaster Well Database System Improvements - WWDIM Business Requirements Specification</td>
<td></td>
</tr>
</tbody>
</table>
2 Overall System Description

2.1 Overview
WWDIM system is mainly associated with well production capturing and reporting for seaside basin area. System was initially built by RBF consulting. Later Zone24x7 incorporated new changes to the user access permissions and web application default page.

The system mainly contains the following;
- Web application to list and view/edit well related information, with action to add new wells to the system.
- It already contains reports developed for administration purposes using SQL server reporting.

System will be introduced with new changes to the web application and existing reports, as well as introducing new reports.

2.2 Product Functions
WWDIM system currently consists of the following functions;
- List and view/edit well related information.
- View well related information in using reports.
  - Water Quality
  - Depth
  - Production
- Role based user permission for various web application functions.
- Allow to add/edit well contact information.
- Allow to add/edit WWDIM users.
- Allow to add/edit constituent values.

2.3 User Characteristics
Current system allows adding users with user access level. These users can login to the application and do necessary functions. Currently the system is defined with user accessing levels as 1, 2, 3 and 4 where level 4 is granted with highest privileges of accessing the system.
2.4 Assumptions

- QA Testing will be done only for the enhancements done and not for the unaffected existing functionality.
- Any existing problem (not resulting from code changes done for enhancements) will be considered as out of scope and will be done as maintenance or Project Change Requests (PCRs) decided between Zone24x7 and MPWMD.
- The report date of production data cannot be empty if it assign for a particular water month. This is related to section 3.1.3.

2.5 Constraints and Dependencies

- Marking of 'Well' points on the map according to 'Well' addresses will be subjected to the services provided by ESRI.
- Achieving all the deadlines will depend on client turnaround time as well. It is expected to be less than 2 working days where feedback is required. Otherwise there may be slippages in dates and rescheduling may be necessary.
3 Functional Requirements

3.1 Data and Screen Enhancements

3.1.1 Well Details Screen

Include new attribute to well information as “Well Status”. This will include Active, Inactive, Destroyed and Unknown values in a dropdown list. “Active” will be selected as default value.

**Note:** This section is related to item no 2 described in second reference document in section 1.4.

Monthly Groundwater Level Required, Annual Water Quality Required and Quarterly Production Required check boxes added to the well details screen to check the “N/A” of the Water Level, Water Quality, and Water Production data in compliance report. The logic related to these sections is described in compliance report section 3.3.1.

The well details screen need to be facilitated to capture “Well System Name” which use in summary production report related to section 3.3.3. This will have the values “Ryan Ranch Unit”, “Hidden Hills Unit” and “Bishop Unit” to be selected from a dropdown control.

As shown in figure 3.1.1.1. Well status, Type, Monitored by, Well monthly frequency, Monthly Groundwater Level Required, Annual Water Quality Required and Quarterly Production Required will be displayed in insert mode.
3.1.2 Well List Screen

3.1.2.1 Well status

Allow to filter well list using well status, which is introduced in well details screen. Dropdown list with “All, Active, Inactive, Destroyed and Unknown” can be selected. Default value will be “All”.

![Well Details Screen](image)
Note: This section is related to item no 2 and 3 described in second reference document in section 1.4.

As shown in Figure 3.1.2.1.1 Well status dropdown will be displayed in well list screen.

![Well List Screen](image)

Figure 3.1.2.1.1

3.1.2.2 Custom Views

Allow to select viewable columns using checkbox integrated dropdown list. This will allow user to select which columns should be viewed in well list screen. The column dropdown list item only load for user access level 3 and 4. For user access level 1 and 2 it will be displayed as empty. Following fields will be listed on column dropdown list.

“Company Name, Address, City, State, Zip, Contact Person, Telephone, Email, Owner Type, Assessor’s Parcel Number, Subarea, Northing, Easting, Reference Point Elevation, Well Casing Diameter, Total Depth of Completed Well, Date Well Completed, DWR Well Completion Report No. (Construction), Date Well Destroyed, DWR Well Completion Report No. (Destruction), Geologic Unit, Meter
Unit, Common Name (added from item no 8 described in second reference document in section 1.4)"

**Note:** This section is related to item no 3 described in second reference document in section 1.4.

As shown in Figure 3.1.2.2.1 multi selection dropdown will be displayed in well list screen.

![Well List Screen](image)

**Figure 3.1.2.2.1**

### 3.1.3 Production Screen

This section allows user to view, enter, update or delete production related data. These operations are enabled to the user according to the user access level as mentioned in below:

- **User Access Level 1** - User can not view/Update/Insert and Delete
- **User Access Level 2** – User can only view production data
User Access Level 3 – view/Update/Insert and Delete
User Access Level 4 - view/Update/Insert and Delete

- In water year dropdown list user can select the Water Year then the data will be displayed according to the selection of Water Year and the dropdown list items will be populated according to the production data available in the database.

- The Water Year dropdown list will be updated according to the new addition or updating of the production data.

- For each production record the reading date could not be empty, but the report date could be empty.

- For given water month user can add more than one production records but among these user can only assigned only one record as the water month. This record should contain a report date value if it assigned for the water month and the report date column empty for other records.

- In footer row it displays the total of the “Gallons for Month” and “Acre Feet for month”.

- The production data grouped as quarter wise in the screen.

- Grid Colour details :
  
  *Blue colour* - quarter 1 and 3 records of selected Water Year.
  *Light Blue colour* - quarter 2 and 3 records of selected Water Year.
  *Gray colour (1st record)* - The last record of the previous water year.
  
  It displays the other non assigned water year records as inactive colour (fonts - gray) as shown in the Figure 3.1.3.1.

**Note:** This section is related to item no 4 described in second reference document in section 1.4.

The view mode of the production screen will be as shown in Figure 3.1.3.1.
3.1.4 Water Quality Screen

Allow to get new input values for bicarbonate/carbonate attributes. Water quality related table will be changed in order to accommodate these fields. The min and max value user can enter using “Acceptable Constituents values” screen. The “Acceptable Constituents values” are mapping with the “Water System Type” in “Well details” screen. The Constituent value text for bicarbonate and carbonate should be entered as “Bicarbonate” and “Carbonate”.

User can enter more than one water quality record for a given water year and user can assign the water quality records to a particular water year using water year dropdown list given in the water quality details screen as shown in the below. The water year populated to the dropdown list according to the date of sampling which user enters. It loads current water year, next and previous water year.

Note: This section is related to item no 7 described in second reference document in section 1.4.
As shown in Figure 3.1.4.1 view mode of the water quality details screen.

3.1.5 Contact Screen

Using this screen user can manage user contact details. Add new field as common name to contact screen list mode and add/edit mode.

**Note:** This section is related to item no 8 described in second reference document in section 1.4.

As shown in Figure 3.1.5.1 text box will be displayed in edit mode of the contact screen and as shown in Figure 3.1.5.2 the contacts screen as follows.
Figure 3.1.5.1

Figure 3.1.5.2
3.1.6 Depth Screen

Using this screen user can manage depth details. Add new field as report month to depth screen view mode and add/edit mode.

As shown in Figure 3.1.6.1 dropdown list will be displayed in edit mode of the depth screen.

3.2 Map Functionality

New map will be integrated with allowing user to click on a map well marker and view well related general information which is listed below.

The following information will be displayed:

- Address location
- Well Master ID
- Well ID and Well name
- Well status

Map will initially load with all the wells marked using pins, which will be done using ESRI services provided. When user clicks on these pins they can view general information. Wells are marked using address field added in general info for each well. If address is not mentioned or address cannot be located for wells, those will not be marked on the map.
Input fields used to generate the address of the well are listed below. This information is captured through the "Well Details" screen (existing functionality).

- Well Location – This will be considered as the street address (No. and street name)
- City – City the well resides

This section is related to item no 10 described in second reference document in section 1.4.

![Map Screen](image)

**Figure 3.2.1**

The map screen will be shown as shown in Figure 3.2.1.

### 3.3 Reports

#### 3.3.1 Compliance Report (New Report)

Report that lists for each type of reporting data (i.e., Water Level, Water Quality, and Water Production):

- (a) what data each well owner is required to submit to the Water Master
- (b) whether or not the required data have been submitted

Filter parameters:

- Water Year
Report Format (PDF/Excel)

**Note:** User access level 1 – 4

This section is related to item no 1 described in second reference document in section 1.4.

As shown in Table 3.3.1.1 the Compliance report logic describes in this table, as shown in Figure 3.3.1.1 the report selection page, as shown in Table 3.3.1.2 it displays the fields required to the report and the compliance report is as shown in the Figure 3.3.1.2.

<table>
<thead>
<tr>
<th>Well Result</th>
<th>Monthly Groundwater Level</th>
<th>Annual WQ</th>
<th>Quarterly Production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>If all 3 months within the quarter contain records for water level measurement then we consider the result as “Yes”</td>
<td>If the water year contains at least a record for water quality then we consider the result as “Yes”</td>
<td>If all 3 months within the quarter contain records for meter reading then we consider the result as “Yes”</td>
</tr>
<tr>
<td>No</td>
<td>If there are no records for all 3 months within the quarter for water level measurement then we consider the result as “No”</td>
<td>If there are no records for given water year then we consider the result as “No”</td>
<td>If there are no records for all 3 months within the quarter for meter reading then we consider the result as “No”</td>
</tr>
<tr>
<td>Partial</td>
<td>If there are no records for any given month within the quarter for water level measurement then we consider the result as “Partial”</td>
<td></td>
<td>If there are no records for any given month within the quarter for meter reading then we consider the result as “Partial”</td>
</tr>
</tbody>
</table>
If "Monthly Groundwater Level Required" checkbox checked in well details screen then user need the details else it is N/A.

If "Annual Water Quality Required" checkbox checked in well details screen then user need the details else it is N/A.

If "Quarterly Production Required" checkbox checked in well details screen then user need the details else it is N/A.

Table 3.3.1.1

![SEASIDE BASIN WATERMASTER DATABASE](image)

Figure 3.3.1.1

<table>
<thead>
<tr>
<th>General Information</th>
<th>Type of reporting data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Water Level</td>
</tr>
<tr>
<td>Well Status</td>
<td>Well ID</td>
</tr>
<tr>
<td>Basin Sub Area</td>
<td>Well Name</td>
</tr>
<tr>
<td>Common Name</td>
<td>Date of measurement</td>
</tr>
<tr>
<td>Producer Type</td>
<td>Water Level</td>
</tr>
<tr>
<td></td>
<td>Date Of Report Month</td>
</tr>
<tr>
<td></td>
<td>Production</td>
</tr>
<tr>
<td></td>
<td>Date to Report</td>
</tr>
<tr>
<td></td>
<td>Water quality</td>
</tr>
<tr>
<td></td>
<td>Well Master ID</td>
</tr>
<tr>
<td></td>
<td>Well Name</td>
</tr>
<tr>
<td></td>
<td>Date of Sampling</td>
</tr>
<tr>
<td></td>
<td>Date Of Report Year</td>
</tr>
</tbody>
</table>

Table 3.3.1.2
Detailed Production Report (Existing production report change)

Report that lists all the production details. The records in the report are grouped by the Sub area and producer wise.

Filter parameters:
- Well Owner (All, Individual)
- Well (All/Individual)
- Quarterly/Monthly
- Report Format (PDF/Excel)

**Note:** User access level 1 – 4

This section is related to item no 5 described in second reference document in section 1.4.

As shown in Table 3.3.2.1 it displays the fields required to the report and as shown in the Figure 3.3.2.1 the detailed production report.
Report date | The year and the month of the particular meter reading  
Begin date | Begin date of the particular reading period.  
Begin reading | Begin reading of the particular reading period (previous reading of the meter)  
End date | End date of the particular reading period.  
End reading | End reading of the particular reading period (particular monthly reading of the meter)  
Total | Difference of the readings  
Units | Measurement unit  
Total Acre-Feet | The total in Acre-Feet

<table>
<thead>
<tr>
<th>Report Date</th>
<th>Begin Date</th>
<th>Begin Reading</th>
<th>End Date</th>
<th>End Reading</th>
<th>Total</th>
<th>Units</th>
<th>Total Acre-Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug-2012</td>
<td>8/30/2012</td>
<td>00</td>
<td>8/30/2012</td>
<td>3.00</td>
<td>3.00</td>
<td>3.00</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oct-2009</td>
<td>10/31/2009</td>
<td>00</td>
<td>10/31/2009</td>
<td>4.00</td>
<td>4.00</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 3.3.2.1

The enhancements addresses the issue in the existing production report where the “Report Date” (to be changed to “Report Month”), “Begin Date”, and “End Date” columns do not show accurately with respect to the information entered at the data entry screen. This will be corrected as explained in detailed using an
example scenario in the Appendices section of the WWDIM BRS document (3rd reference document in section 1.4).

### 3.3.3 Summary Production Report (New report)

Water Year report that breaks down production quarterly within the year, by each producer within each subarea. This report is produced to match the format being used by the Watermaster Board. Only wells in the ‘Active’ status would be considered.

**Filter parameters:**
- Water Year
- Report Format (PDF/Excel)

**Fields required:**

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producer</td>
<td>Water master producer</td>
</tr>
<tr>
<td>Type</td>
<td>Meta data for the System</td>
</tr>
<tr>
<td>four quarters by month</td>
<td>The production AF per month will be displayed for each month. This will be totaled quarterly.</td>
</tr>
<tr>
<td>Annual To-Date reported total</td>
<td>Total of four quarters</td>
</tr>
<tr>
<td>Base Operating Yield Allocation</td>
<td>Meta data for the System</td>
</tr>
<tr>
<td>Carry Over from previous water year</td>
<td>Meta data for the System</td>
</tr>
</tbody>
</table>

**Table 3.3.3.1**

The Report format would be as shown in Figure 3.3.3.1.

---

**Seaside Groundwater Basin Watermaster**

**Reported Quarterly and Annual Water Production From the Seaside Groundwater Basin**

**For All Producers Included in the Seaside Basin Adjudication - Water Year 2010**

**(All Values in Acre-Feet [AF])**

<table>
<thead>
<tr>
<th>Producer</th>
<th>Type</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan-Mar 2010</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul-Sep 2010</th>
<th>Total</th>
<th>Base Operating Yield Allocation</th>
</tr>
</thead>
</table>

**Notes:**
1. The Water Year (WY) begins October 1 and ends September 30 of the following calendar year. For example, WY 2010 began on October 1, 2009 and will end on September 30, 2010.
2. “Type” refers to water rights as described in the Seaside Basin Adjudication decisions as amended, signed February 9, 2007 (Monterey County Superior Court Case No. M44438).
3. Values shown in the table are based on reports to the Watermaster as received by MPRD by July 7, 2010.
4. All values are rounded to the nearest tenth of an acre-foot. Where required, reported data were converted to non-foot units utilizing the relationships: 325,851 gallons = 43,580 cubic feet = 1 acre-foot.
5. “Base Operating Yield Allocation” values are based on Seaside Basin adjudication decisions. These values are consistent with the Watermaster Schedule Allocation Water Year 2010 (see San YSIDRO in 10-0-2009 Board decision).
6. Any minor discrepancies in totals are attributable to rounding. CAW = California American Water.

**Figure 3.3.3.1**
Additionally the Report would show the ‘CAW Aquifer Storage and Recovery’ details for each month, which will be meta-data for the System. The Water master Producers would be listed grouped according to the ‘sub area’.

**Note:** For “Laguna Seca Subarea”, the data will be grouped according the wells belonging to Well Systems Ryan Ranch Unit, Hidden Hills Unit or Bishop Unit. This data will be captured through the “Well Details” screen for each well.

**Note:** User access level 3 and 4
This section is related to item no 6 described in second reference document in section 1.4.

### 3.3.4 Contacts Report (New Report)

Report that lists all the contact information for each well.

Filter parameters:
- Well Status (Active/In-Active/Destroyed/ Unknown)
- Report Format (PDF/Excel)

**Note:** User access level 3 and 4

As shown in Table 3.3.4.1 it displays the fields required by the report. In the Figure 3.3.4.1 the report selection screen is shown and as shown in the Figure 3.3.4.2 the contacts report.

![Figure 3.3.4.1](image)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Status</td>
<td></td>
</tr>
<tr>
<td>Report Format</td>
<td></td>
</tr>
</tbody>
</table>

If you are having report generation problems please follow the steps given [here](#).
<table>
<thead>
<tr>
<th>Well Number</th>
<th>Well master ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well Name</td>
<td>Well name</td>
</tr>
<tr>
<td>Well Status</td>
<td>Active/ In-Active/ Destroyed/ Unknown</td>
</tr>
<tr>
<td>Company Name</td>
<td>Company name</td>
</tr>
<tr>
<td>Common Name</td>
<td>Common name used</td>
</tr>
<tr>
<td>Contact person</td>
<td>Contact person name</td>
</tr>
<tr>
<td>Tel</td>
<td>Telephone</td>
</tr>
<tr>
<td>Email</td>
<td>Email</td>
</tr>
<tr>
<td>Owner Type</td>
<td>Well Owner/ Sampler/ Laboratory/ Water System Operator/ Parcel Owner/ Driller/ Watermaster Producer</td>
</tr>
<tr>
<td></td>
<td>Ex: (Well Owner) (Driller)</td>
</tr>
</tbody>
</table>

Table 3.3.4.1

Seaside Groundwater Basin Watermaster

Date 10/7/2010

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Contact details

<table>
<thead>
<tr>
<th>WellID</th>
<th>Well Name</th>
<th>Well Status</th>
<th>Company Name</th>
<th>Common Name</th>
<th>Contact Person</th>
<th>Telephone</th>
<th>Email</th>
<th>Owner Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>102</td>
<td>MSC-Deep</td>
<td>Unknown</td>
<td>MPWMD</td>
<td>Joe Oliver</td>
<td>831.658.6600</td>
<td>joe@mpwmd .dst.ca.us</td>
<td>(Well Owner) (Parcel Owner) (Water System Operator) (Sampler)</td>
<td></td>
</tr>
<tr>
<td>103</td>
<td>PCA-W</td>
<td>Shallow</td>
<td>MPWMD</td>
<td>Joe Oliver</td>
<td>831.658.6600</td>
<td>joe@mpwmd .dst.ca.us</td>
<td>(Well Owner) (Parcel Owner) (Water System Operator) (Sampler)</td>
<td></td>
</tr>
<tr>
<td>104</td>
<td>PCA-W</td>
<td>Deep</td>
<td>MPWMD</td>
<td>Joe Oliver</td>
<td>831.658.6600</td>
<td>joe@mpwmd .dst.ca.us</td>
<td>(Well Owner) (Parcel Owner) (Water System Operator) (Sampler)</td>
<td></td>
</tr>
<tr>
<td>105</td>
<td>PCA-E</td>
<td>(Multiple)</td>
<td>Shallow</td>
<td>Joe Oliver</td>
<td>831.658.6600</td>
<td>joe@mpwmd .dst.ca.us</td>
<td>(Well Owner) (Parcel Owner) (Water System Operator) (Sampler)</td>
<td></td>
</tr>
<tr>
<td>106</td>
<td>PCA-E</td>
<td>Unknown</td>
<td>MPWMD</td>
<td>Joe Oliver</td>
<td>831.658.6600</td>
<td>joe@mpwmd</td>
<td>(Well Owner)</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3.3.4.2
3.3.5 Groundwater Level Monitoring Data (change to existing Depth Report)

This report lists all the groundwater level monitoring data. The records in the report are grouped by the Sub area and producer wise.

Filter parameters:
- Well Owner (All, Individual)
- Well (All/Individual)
- Date Range (Monthly / Quarterly)
- Report Format (PDF/Excel)

**Note**: User access level 1 – 4

Table 3.3.5.1 displays the fields required by the report. Figure 3.3.5.1 shows the report selection screen and as shown in the Figure 3.3.5.2 the groundwater level monitoring report.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date Measured</td>
<td>The date of the measurement</td>
</tr>
<tr>
<td>Reference Point</td>
<td>The reference evaluation benchmark of the well</td>
</tr>
<tr>
<td>Depth to water</td>
<td>Depth of the well for a particular time period</td>
</tr>
<tr>
<td>Static Water Level</td>
<td>Difference between Depth of the water level and</td>
</tr>
<tr>
<td></td>
<td>the reference point</td>
</tr>
<tr>
<td>Comments</td>
<td>Comments added by the user</td>
</tr>
</tbody>
</table>

Figure 3.3.5.1
3.3.6 Report format improvement

Production Detail Report – The grouping name would be added with the said information.

- Well Number: 101
- Well Name: MSC-Shallow Producer
- Producer Name: Pasadera Country Club, LLC

This section is related to item no 9 described in second reference document in section 1.4.

As shown in Figure 3.3.6.1 it displays the details need to be displayed in the production details report.
Seaside Groundwater Basin Watermaster

Well: All Well(s)  Well Owner: All Well Owner(s)

Production Detail
Period: 9/01/2007 to 9/01/2015

<table>
<thead>
<tr>
<th>Report Month</th>
<th>Begin Date</th>
<th>Begin Reading</th>
<th>End Date</th>
<th>End Reading</th>
<th>Total</th>
<th>Units</th>
<th>Total</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug-2012</td>
<td>8/30/2012</td>
<td>00</td>
<td>8/31/2012</td>
<td>2.00</td>
<td>2.00</td>
<td>3.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3.00</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Well Number</th>
<th>Well Name</th>
<th>Producer Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>225</td>
<td>Mutual</td>
<td>Standex Int.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>West Hidden Hlls Land Co.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Well Number</th>
<th>Well Name</th>
<th>Producer Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>281</td>
<td>GCMI</td>
<td>MIP/MD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Report Month</th>
<th>Begin Date</th>
<th>Begin Reading</th>
<th>End Date</th>
<th>End Reading</th>
<th>Total</th>
<th>Units</th>
<th>Total</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb-2008</td>
<td>2/15/2008</td>
<td></td>
<td>2/15/2008</td>
<td>2.00</td>
<td>2.00</td>
<td>4.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 3.3.6.1
# 4 Non functional Requirements

## 4.1 Performance Requirements
The new enhancements will be provided maintaining the current performance of the System.

## 4.2 Security Requirements
The user access levels mentioned in section 2.3 will be maintained and will be used accordingly for the new improvement functionality as well.

## 4.3 Usability Requirements
Usability will be consistent with the current System functionality.

## 4.4 Capacity and Volume Requirements
N/A

## 4.5 Technology Requirements
- Windows 2003 server with IIS service and .NET framework 2.0.
- SQL 2005 Server Express Edition

## 4.6 Compatibility Requirements
Internet Explorer 8 will be used as default browser for compatibility.

## 4.7 Extendibility Requirements
N/A

## 4.8 User Support and Maintenance Requirements
User support for the new improvements will be provided by way of System Demonstrations as necessary.

## 4.9 Licensing Requirements
N/A

## 4.10 Other Requirements
N/A
5 External Interface Requirements

5.1 Application Interfaces
N/A

5.2 Software Interfaces

5.2.1 Purchased Components
N/A

5.2.2 Reusable Components

5.2.2.1 BasicDatePicker Control
Added new date picker control (BasicDatePicker) to Production screen, Depth screen and Water Quality Details screen. The referenced DLL file is already used in the existing system. (BasicFrame.WebControls.BasicDatePicker.dll)

5.3 Hardware Interfaces
N/A

5.4 Communications Interfaces

5.4.1 ESRI Services
Services from ESRI will be used in relation to the functional requirement identified in Section 3.2. The Flex API provided by ArcGIS Resource Centers will be used for implementation. (http://resources.esri.com)

6 Appendices
N/A