

7. WATER SOURCE DEVELOPMENT

7.1 General

Table 7.1.1 Well Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | Page: 1 of 14 | |
|--|---|---------------------------------|----------------------------|--------------------|--------|
| Content: Water Source - General Information | | | Date: | | |
| Data Collection Level: Provincial | | Province No.: 1043 | Filename: Water Source.xls | | |
| Region Number: X | | Province Name: Misamis Oriental | | Form Number: P.4.1 | |
| | Type of Water Source | | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | 1,164 | 753 | 320 |
| Imple- mentor | Government Agency | Number | 607 | 601 | 269 |
| | Private | Number | 557 | 152 | 51 |
| Level | Level I | Number | 1,164 | 701 | 263 |
| | Level II | Number | | 32 | 42 |
| | Level III | Number | | 20 | |
| Ownership | Water District | Number | | 4 | 1 |
| | MEO/CEO | Number | | 8 | 7 |
| | RWSA | Number | | 3 | 3 |
| | BWSA | Number | | 2 | 2 |
| | Institution | Number | | 35 | 43 |
| | Commercial Establishment | Number | | | |
| | Industrial/Agricultural Undertaking | Number | | | |
| | Public (Domestic) | Number | 607 | 593 | 263 |
| Private (Domestic) | Number | 557 | 108 | 1 | |
| Abstraction | Submersible/Turbine | Number | | 52 | |
| | Centrifugal | Number | | | |
| | Handpump | Number | 1,164 | 701 | |
| | Bucket & Rope | Number | | | |
| | Free Flowing | Number | | | |
| Usage | Drinking | Number | 582 | 753 | 320 |
| | Washing/Bathing | Number | | | |
| | Gardening/Irrigation | Number | | | |
| | Big-Scale Irrigation | Number | | | |
| | Production | Number | | | |
| Water Quality | No Quality Problem | Number | | | |
| | High Iron/Mag. Content | Number | | | |
| | High Chloride Content | Number | | | |
| | Turbidity/Colored/Smell | Number | | | |
| | Polluted/Contaminated | Number | | | |
| | Chlorinated | Number | | | |
| | Treated | Number | | | |
| Production | Seasonal Production | Number | | | |
| | Average Capacity < 100 m ³ /day | Number | 1,164 | 738 | 306 |
| | Average Capacity >= 100 m ³ /day | Number | | 15 | 12 |
| | Number of Household >= 5 | Number | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | Page: 2 of 14 | | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|-----------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | Character | Alubijid | | | Balingasag | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | 50 | 50 | 25 | 71 | 68 | 17 |
| Imple- menter | Government Agency | Number | 45 | 35 | 19 | 36 | 59 | 16 |
| | Private | Number | 5 | 15 | 6 | 35 | 9 | 1 |
| Level | Level I | Number | 50 | 36 | 19 | 71 | 68 | 16 |
| | Level II | Number | | 11 | 5 | | | 1 |
| | Level III | Number | | 3 | 1 | | | |
| Ownership | Water District | Number | | | | | | |
| | MEO/CEO | Number | | | | | | |
| | RWSA | Number | | 3 | 1 | | | |
| | BWSA | Number | | | | | | |
| | Institution | Number | | 11 | 5 | | | 1 |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | 45 | 35 | 19 | 36 | 59 | 16 |
| | Private (Domestic) | Number | 5 | 1 | | 35 | 9 | |
| Abstraction | Submersible/Turbine | Number | | 14 | | | | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | 50 | 36 | | 71 | 68 | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | 25 | 50 | 25 | 36 | 68 | 17 |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | 50 | 47 | 24 | 71 | 68 | 17 |
| | Average Capacity >= 100 m ³ /day | Number | | 3 | 1 | | | |
| | Number of Household < 5 | Number | | | | | | |
| | Number of Household >= 5 | Number | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | | Page: 3 of 14 | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|---------------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | Character | Balingoan | | | Bimuangan | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| Imple- mentor | Total number of water sources | Number | 4 | 10 | 10 | 1 | 5 | 8 |
| | Government Agency | Number | 3 | 5 | 8 | 1 | 5 | 7 |
| | Private | Number | 1 | 5 | 2 | | | 1 |
| Level | Level I | Number | 4 | 10 | 8 | 1 | 5 | 7 |
| | Level II | Number | | | 1 | | | 1 |
| | Level III | Number | | | 1 | | | |
| Ownership | Water District | Number | | | | | | |
| | MEO/CEO | Number | | | | | | |
| | RWSA | Number | | | 1 | | | |
| | BWSA | Number | | | @ | | | |
| | Institution | Number | | | 1 | | | 1 |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | 3 | 5 | 8 | 1 | 5 | 7 |
| Private (Domestic) | Number | 1 | 5 | | | | | |
| Abstraction | Submersible/Turbine | Number | | | | | | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | 4 | 10 | | 1 | 5 | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | 2 | 10 | 10 | 1 | 5 | 8 |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | 4 | 10 | 9 | 1 | 5 | 8 |
| | Average Capacity >= 100 m ³ /day | Number | | | 1 | | | |
| | Number of Household < 5 | Number | | | | | | |
| | Number of Household >= 5 | Number | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | Page: 4 of 14 | | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|-----------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | Character | Claveria | | | El Salvador | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | | | 1 | 5 | 48 | 22 |
| Imple- mentor | Government Agency | Number | | | | 5 | 29 | 20 |
| | Private | Number | | | 1 | | 19 | 2 |
| Level | Level I | Number | | | | 5 | 40 | 20 |
| | Level II | Number | | | | | 6 | 2 |
| | Level III | Number | | | 1 | | 2 | |
| Ownership | Water District | Number | | | 1 | | | |
| | MEO/CEO | Number | | | | | | |
| | RWSA | Number | | | | | | |
| | BWSA | Number | | | | | | |
| | Institution | Number | | | | | 8 | 2 |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | | | | 5 | 29 | 20 |
| | Private (Domestic) | Number | | | 1 | | 11 | |
| Abstraction | Submersible/Turbine | Number | | | | | 8 | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | | | | 5 | 40 | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | | | 1 | 3 | 48 | 22 |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | | | | 5 | 48 | 22 |
| | Average Capacity >= 100 m ³ /day | Number | | | 1 | | | |
| | Number of Household < 5 | Number | | | | | | |
| | Number of Household >= 5 | Number | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | | Page: 5 of 14 | |
|--|---|--------|---------------------------------|-----------|--------|----------------------------|---------------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | | Gingoog City | | | Gitagum | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | 35 | 97 | 3 | | 1 | |
| Implementor | Government Agency | Number | 34 | 92 | 3 | | | |
| | Private | Number | 1 | 5 | | | 1 | |
| Level | Level I | Number | 35 | 93 | 3 | | | |
| | Level II | Number | | | | | 1 | |
| | Level III | Number | | 4 | | | | |
| Ownership | Water District | Number | | 4 | | | | |
| | MEO/CEO | Number | | | | | | |
| | RWSA | Number | | | | | | |
| | BWSA | Number | | | | | | |
| | Institution | Number | | | | | 1 | |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | 34 | 92 | 3 | | | |
| Private (Domestic) | Number | 1 | 1 | | | | | |
| Abstraction | Submersible/Turbine | Number | | 4 | | | 1 | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | 35 | 93 | | | | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | 18 | 97 | 3 | | 1 | |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | 35 | 93 | 3 | | 1 | |
| | Average Capacity >= 100 m ³ /day | Number | | 4 | | | | |
| | Number of Household < 5 | Number | | | | | | |
| Number of Household >= 5 | Number | | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | Page: 6 of 14 | | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|-----------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | Character | Initao | | | Jasaan | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | | 14 | 2 | 97 | 86 | 7 |
| Implementor | Government Agency | Number | | 13 | 2 | 66 | 58 | 1 |
| | Private | Number | | 1 | | 31 | 28 | 6 |
| Level | Level I | Number | | 11 | 2 | 97 | 85 | 1 |
| | Level II | Number | | 1 | | | 1 | 6 |
| | Level III | Number | | 2 | | | | |
| Ownership | Water District | Number | | | | | | |
| | MEO/CEO | Number | | 2 | | | | |
| | RVSA | Number | | | | | | |
| | BWSA | Number | | | | | | |
| | Institution | Number | | 1 | | | 1 | 6 |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | | 11 | 2 | 66 | 58 | 1 |
| Private (Domestic) | Number | | | | 31 | 27 | | |
| Abstraction | Submersible/Turbine | Number | | 3 | | | 1 | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | | 11 | | 97 | 85 | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | | 14 | 2 | 49 | 86 | 7 |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| Production | Treated | Number | | | | | | |
| | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | | 12 | 2 | 97 | 86 | 6 |
| | Average Capacity >= 100 m ³ /day | Number | | 2 | | | | 1 |
| | Number of Household < 5 | Number | | | | | | |
| Number of Household >= 5 | Number | | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | | Page: 7 of 14 | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|---------------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | Character | Kinoguitan | | | Lagonglong | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | 5 | 1 | 18 | 7 | 8 | 10 |
| Implementor | Government Agency | Number | 1 | | 13 | 7 | 8 | 8 |
| | Private | Number | 4 | 1 | 5 | | | 2 |
| Level | Level I | Number | 5 | | 13 | 7 | 8 | 8 |
| | Level II | Number | | | 5 | | | 1 |
| | Level III | Number | | 1 | | | | 1 |
| Ownership | Water District | Number | | | | | | |
| | MEO/CEO | Number | | | | | | |
| | RWSA | Number | | | | | | |
| | BWSA | Number | | | | | | |
| | Institution | Number | | 1 | 5 | | | 2 |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | 1 | | 13 | 7 | 8 | 8 |
| Private (Domestic) | Number | 4 | | | | | | |
| Abstraction | Submersible/Turbine | Number | | 1 | | | | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | 5 | | | 7 | 8 | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | 3 | 1 | 18 | 4 | 8 | 10 |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | 5 | 1 | 18 | 7 | 8 | 10 |
| | Average Capacity >= 100 m ³ /day | Number | | | | | | |
| | Number of Household < 5 | Number | | | | | | |
| | Number of Household >= 5 | Number | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | | Page: 8 of 14 | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|---------------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | | Laguindingan | | | Libertad | | |
| | Type of Water Source | Character | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | 38 | 14 | 10 | 1 | 44 | 4 |
| Implementor | Government Agency | Number | 26 | 10 | 8 | 1 | 39 | 4 |
| | Private | Number | 12 | 4 | 2 | | 5 | |
| Level | Level I | Number | 38 | 8 | 7 | 1 | 39 | 4 |
| | Level II | Number | | 4 | 1 | | 4 | |
| | Level III | Number | | 2 | 2 | | 1 | |
| Ownership | Water District | Number | | | | | | |
| | MEO/CEO | Number | | 2 | 1 | | | |
| | RWSA | Number | | | 1 | | | |
| | BWSA | Number | | | | | | |
| | Institution | Number | | 4 | 1 | | 5 | |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | 26 | 8 | 7 | 1 | 39 | 4 |
| Private (Domestic) | Number | 12 | | | | | | |
| Abstraction | Submersible/Turbine | Number | | 6 | | | 5 | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | 38 | 8 | | 1 | 39 | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | 19 | 14 | 10 | 1 | 44 | 4 |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | 38 | 13 | 10 | 1 | 44 | 4 |
| | Average Capacity >= 100 m ³ /day | Number | | 1 | | | | |
| | Number of Household < 5 | Number | | | | | | |
| Number of Household >= 5 | Number | | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | | Page: 9 of 14 | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|---------------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | Character | Lugait | | | Magsaysay | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | 39 | 33 | 9 | 143 | 13 | 29 |
| Imple- mentor | Government Agency | Number | 25 | 33 | 3 | 60 | 13 | 28 |
| | Private | Number | 14 | | 6 | 83 | | 1 |
| Level | Level I | Number | 39 | 29 | 3 | 143 | 13 | 28 |
| | Level II | Number | | | 5 | | | 1 |
| | Level III | Number | | 4 | 1 | | | |
| Ownership | Water District | Number | | | | | | |
| | MEO/CEO | Number | | 4 | 1 | | | |
| | RWSA | Number | | | | | | |
| | BWSA | Number | | | | | | |
| | Institution | Number | | | 5 | | | 1 |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | 25 | 29 | 3 | 60 | 13 | 28 |
| Private (Domestic) | Number | 14 | | | 83 | | | |
| Abstraction | Submersible/Turbine | Number | | 4 | | | | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | 39 | 29 | | 143 | 13 | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | 20 | 33 | 9 | 72 | 13 | 29 |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | 39 | 29 | 8 | 143 | 13 | 29 |
| | Average Capacity >= 100 m ³ /day | Number | | 4 | 1 | | | |
| | Number of Household < 5 | Number | | | | | | |
| | Number of Household >= 5 | Number | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | | Page: 10 of 14 | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|----------------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | Character | Manticao | | | Medina | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | 207 | 20 | 21 | 17 | 17 | 29 |
| Implementor | Government Agency | Number | 58 | 20 | 20 | 17 | 14 | 23 |
| | Private | Number | 149 | | 1 | | 3 | 6 |
| Level | Level I | Number | 207 | 20 | 19 | 17 | 14 | 23 |
| | Level II | Number | | | 1 | | 2 | 4 |
| | Level III | Number | | | 1 | | 1 | 2 |
| Ownership | Water District | Number | | | | | | |
| | MEO/CEO | Number | | | 1 | | | |
| | RWSA | Number | | | | | | |
| | BWSA | Number | | | | | 2 | 2 |
| | Institution | Number | | | | | 1 | 4 |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | 58 | 20 | 19 | 17 | 14 | 23 |
| Private (Domestic) | Number | 149 | | | | | | |
| Abstraction | Submersible/Turbine | Number | | | | | 3 | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | 207 | 20 | | 17 | 14 | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | 104 | 20 | 21 | 9 | 17 | 29 |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scate Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | 207 | 20 | 19 | 17 | 16 | 27 |
| | Average Capacity >= 100 m ³ /day | Number | | | 1 | | 1 | 2 |
| | Number of Household < 5 | Number | | | | | | |
| | Number of Household >= 5 | Number | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | | Page: 11 of 14 | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|----------------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | Character | Naawan | | | Opol | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | 49 | 28 | 24 | 64 | 20 | 4 |
| Imple- mentor | Government Agency | Number | 39 | 23 | 22 | 46 | 18 | 4 |
| | Private | Number | 10 | 5 | 2 | 18 | 2 | |
| Level | Level I | Number | 49 | 27 | 22 | 64 | 19 | 4 |
| | Level II | Number | | 1 | 2 | | 1 | |
| | Level III | Number | | | | | | |
| Ownership | Water District | Number | | | | | | |
| | MEO/CEO | Number | | | | | | |
| | RWSA | Number | | | | | | |
| | BWSA | Number | | | | | | |
| | Institution | Number | | 1 | 2 | | 1 | |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | 39 | 23 | 22 | 46 | 18 | 4 |
| Private (Domestic) | Number | 10 | 4 | | 18 | 1 | | |
| Abstraction | Submersible/Turbine | Number | | 1 | | | 1 | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | 49 | 27 | | 64 | 19 | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | 25 | 28 | 24 | 32 | 20 | 4 |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | 49 | 28 | 24 | 64 | 20 | 4 |
| | Average Capacity >= 100 m ³ /day | Number | | | | | | |
| | Number of Household < 5 | Number | | | | | | |
| | Number of Household >= 5 | Number | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | Page: 12 of 14 | | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|-----------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | Character | Salay | | | Sugbongcogon | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | 84 | 107 | 11 | 4 | 1 | 14 |
| Implementor | Government Agency | Number | 48 | 74 | 10 | 4 | 1 | 13 |
| | Private | Number | 36 | 33 | 1 | | | 1 |
| Level | Level I | Number | 84 | 107 | 10 | 4 | 1 | 11 |
| | Level II | Number | | | 1 | | | 1 |
| | Level III | Number | | | | | | 2 |
| Ownership | Water District | Number | | | | | | |
| | MEO/CEO | Number | | | | | | 2 |
| | RWSA | Number | | | | | | |
| | BWSA | Number | | | | | | |
| | Institution | Number | | | 1 | | | 1 |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | 48 | 74 | 10 | 4 | 1 | 11 |
| Private (Domestic) | Number | 36 | 33 | | | | | |
| Abstraction | Submersible Turbine | Number | | | | | | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | 84 | 107 | | 4 | 1 | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | 42 | 107 | 11 | 2 | 1 | 14 |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | 84 | 107 | 10 | 4 | 1 | 14 |
| | Average Capacity >= 100 m ³ /day | Number | | | 1 | | | |
| | Number of Household < 5 | Number | | | | | | |
| | Number of Household >= 5 | Number | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | | Page: 13 of 14 | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|----------------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | Character | Tagoloan | | | Talisayan | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | | 3 | 17 | 203 | 60 | 9 |
| Imple- mentor | Government Agency | Number | | 3 | 17 | 62 | 45 | 6 |
| | Private | Number | | | | 141 | 15 | 3 |
| Level | Level I | Number | | 3 | 16 | 203 | 60 | 6 |
| | Level II | Number | | | | | | 3 |
| | Level III | Number | | | 1 | | | |
| Ownership | Water District | Number | | | | | | |
| | MEO/CEO | Number | | | 1 | | | |
| | RWSA | Number | | | | | | |
| | BWSA | Number | | | | | | |
| | Institution | Number | | | | | | 3 |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | | 3 | 16 | 62 | 45 | 6 |
| Private (Domestic) | Number | | | | 141 | 15 | | |
| Abstraction | Submersible/Turbine | Number | | | | | | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | | 3 | | 203 | 60 | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | | 3 | 17 | 102 | 60 | 9 |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | | 3 | 16 | 203 | 60 | 8 |
| | Average Capacity >= 100 m ³ /day | Number | | | 1 | | | |
| | Number of Household < 5 | Number | | | | | | |
| | Number of Household >= 5 | Number | | | | | | |

Table 7.1.1 Water Sources Information

| Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP) | | | | | | Page: 14 of 14 | | |
|--|---|-----------|---------------------------------|-----------|--------|----------------------------|-----------|--------|
| Content: Water Source - General Information | | | | | | Date: | | |
| Data Collection Level: Provincial | | | Province No.: 1043 | | | Filename: Water Source.xls | | |
| Region Number: X | | | Province Name: Misamis Oriental | | | Form Number: P.4.1 | | |
| | Name of Municipalities | Character | Villanueva | | | | | |
| | Type of Water Source | Number | Shallow Well | Deep Well | Spring | Shallow Well | Deep Well | Spring |
| | Total number of water sources | Number | 40 | 5 | 16 | | | |
| Implic-mentor | Government Agency | Number | 23 | 4 | 14 | | | |
| | Private | Number | 17 | 1 | 2 | | | |
| Level | Level I | Number | 40 | 5 | 13 | | | |
| | Level II | Number | | | 1 | | | |
| | Level III | Number | | | 2 | | | |
| Ownership | Water District | Number | | | | | | |
| | MEO/CEO | Number | | | 1 | | | |
| | RWSA | Number | | | | | | |
| | BWSA | Number | | | | | | |
| | Institution | Number | | | 2 | | | |
| | Commercial Establishment | Number | | | | | | |
| | Industrial/Agricultural Undertaking | Number | | | | | | |
| | Public (Domestic) | Number | 23 | 4 | 13 | | | |
| Private (Domestic) | Number | 17 | 1 | | | | | |
| Abstraction | Submersible/Turbine | Number | | | | | | |
| | Centrifugal | Number | | | | | | |
| | Handpump | Number | 40 | 5 | | | | |
| | Bucket & Rope | Number | | | | | | |
| | Free Flowing | Number | | | | | | |
| Usage | Drinking | Number | 20 | 5 | 16 | | | |
| | Washing/Bathing | Number | | | | | | |
| | Gardening/Irrigation | Number | | | | | | |
| | Big-Scale Irrigation | Number | | | | | | |
| | Production | Number | | | | | | |
| Water Quality | No Quality Problem | Number | | | | | | |
| | High Iron/Manganese Content | Number | | | | | | |
| | High Chloride Content | Number | | | | | | |
| | Turbidity/Colored/Smell | Number | | | | | | |
| | Polluted/Contaminated | Number | | | | | | |
| | Chlorinated | Number | | | | | | |
| | Treated | Number | | | | | | |
| Production | Seasonal Production | Number | | | | | | |
| | Average Capacity < 100 m ³ /day | Number | 40 | 5 | 14 | | | |
| | Average Capacity >= 100 m ³ /day | Number | | | 2 | | | |
| | Number of Household < 5 | Number | | | | | | |
| Number of Household >= 5 | Number | | | | | | | |

Table 7.1.2 Major References

| Report/Information | Agency/Author | Contents | Reference Data/Description | Output |
|---|-----------------|--|---|--|
| 1. Topographic Map (1:250,000) | NAMRIA | political boundary, topographic contour, river, road, etc. | major river basins & road | Location Map (Base Map of the Province) |
| 2. Rapid Assessment of Water Supply Sources | NWRB | groundwater availability, well inventory | well depth, static water level, specific capacity, etc. | Groundwater Availability Map |
| 3. Individual Well Information Database | NWRB | location & well inventory | location with well depths & water levels | Individual Well Location Map |
| 4. Groundwater Resources Investigation | NWRB | groundwater potential | high yielding and water quality problem areas | Groundwater Availability Map |
| 5. Geological Map of the Philippines | BMGS | lithologic distribution and structures | aquifers distribution | Groundwater Availability Map |
| 6. Philippine Water Resources Summary Data | NWRB | location map & runoff records | runoff record & statistical data | River Flow Duration Curve & Probability of Surface Water |
| 7. Road Network Map of the Province | PPDC | major road & municipality boundaries | municipal boundaries | Distribution Map of Urban & Rural Areas |
| 8. Feasibility Study Reports of the Water Districts | LWUA | well field information | groundwater potential & quality | Groundwater Availability Map |
| 9. Water Quality Analysis Result | Water Districts | water quality results | water sources quality | Groundwater Availability Map & Groundwater Quality |
| 10. Water Quality Analysis Result | PHO, PSPT | water quality results | water sources quality | Groundwater Availability Map & Water Sources Quality |
| 11. Assessment of the Mineral Production | DENR | location, activity of the mining sites | location & activity of the mining sites | River Network Map |
| 12. General Information of Groundwater | DEO, PSPT | groundwater availability | low yielding and water quality problem area | Groundwater Availability Map |
| 13. Well Inventory | DEO, PSPT | location and well information | well depth, static water level, specific capacity, etc. | Existing Well Inventory |
| 14. Spring Inventory | DEO, PSPT | location and spring information | discharge, distance & elevation | Water Sources Information |
| 15. Pumping Test Data | DEO | pumping test results | well capacity | Groundwater Availability Map |

7.3 Groundwater Sources

7.3.1 Classification of Groundwater Availability

Table 7.3.1 Well Inventory by Municipality

| Municipality | Barangay | Utilization | Type | Depth (m) | SWL (mbgs) | Spe. Cap. (lpsm) |
|--------------|-----------------|-------------|------|-----------|------------|------------------|
| ALUBIJID | Baybay | Level I | SW | 9.0 | 5.5 | |
| ALUBIJID | Baybay | Level II | DW | 42.0 | 14.0 | |
| ALUBIJID | Benigwayan | Level I | SW | 12.0 | 7.0 | |
| ALUBIJID | Benigwayan | Level I | DW | 48.0 | 30.0 | |
| ALUBIJID | Calatcat | Level I | SW | 9.0 | 6.0 | |
| ALUBIJID | Calatcat | Level II | DW | 54.0 | 21.0 | |
| ALUBIJID | Lagtang | Level I | SW | 9.0 | 5.5 | |
| ALUBIJID | Lagtang | Level II | DW | 73.1 | 29.3 | 0.3 |
| ALUBIJID | Lanao | Level I | SW | 12.0 | 9.0 | |
| ALUBIJID | Lanao | Level I | DW | 30.5 | 21.3 | |
| ALUBIJID | Loguilo | Level I | SW | 9.1 | 5.0 | |
| ALUBIJID | Loguilo | Level II | DW | 22.0 | 18.8 | |
| ALUBIJID | Lourdes | Level II | DW | 24.0 | 12.0 | |
| ALUBIJID | Molocboloc | Level I | DW | 30.5 | 18.0 | |
| ALUBIJID | Poblacion | Level III | DW | 36.6 | 21.3 | 0.4 |
| ALUBIJID | Sampatulog | Level I | SW | 12.0 | 8.7 | |
| ALUBIJID | Sampatulog | Level II | DW | 54.0 | 36.0 | 0.1 |
| ALUBIJID | Sungay | Level I | SW | 12.0 | 8.0 | |
| ALUBIJID | Sungay | Level I | DW | 36.6 | 17.7 | |
| ALUBIJID | Talaba | Level II | DW | 54.0 | 30.0 | 0.1 |
| ALUBIJID | Taparak | Level I | SW | 6.0 | 3.5 | |
| ALUBIJID | Tugasnon | Level I | SW | 6.0 | 4.0 | |
| BALINGASAG | Baliwagan | Level I | SW | 12.0 | 9.0 | |
| BALINGASAG | Baliwagan | Level I | DW | 36.0 | 30.0 | |
| BALINGASAG | Binitinan | Level I | DW | 36.0 | 30.0 | |
| BALINGASAG | Blanco | Level I | SW | 18.0 | 12.0 | |
| BALINGASAG | Blanco | Level I | DW | 54.0 | 45.0 | |
| BALINGASAG | Cogon | Level I | SW | 12.0 | 9.0 | |
| BALINGASAG | Cogon | Level I | DW | 54.0 | 45.0 | |
| BALINGASAG | Linggangao | Level I | SW | 18.0 | 12.0 | |
| BALINGASAG | Linggangao | Level I | DW | 54.0 | 45.0 | |
| BALINGASAG | Mambayaan | Level I | SW | 12.0 | 9.0 | |
| BALINGASAG | Mambayaan | Level I | DW | 30.0 | 24.0 | |
| BALINGASAG | Mandangoa | Level I | SW | 12.0 | 9.0 | |
| BALINGASAG | Mandangoa | Level I | DW | 54.0 | 45.0 | |
| BALINGASAG | Napaliran | Level II | DW | 65.0 | 50.0 | |
| BALINGASAG | Pob. Barangay 1 | Level I | SW | 12.0 | 9.0 | |
| BALINGASAG | Pob. Barangay 1 | Level I | DW | 36.0 | 30.0 | |
| BALINGASAG | Pob. Barangay 2 | Level I | SW | 12.0 | 9.0 | |
| BALINGASAG | Pob. Barangay 2 | Level I | DW | 36.0 | 30.0 | |
| BALINGASAG | Pob. Barangay 3 | Level I | SW | 12.0 | 9.0 | |
| BALINGASAG | Pob. Barangay 3 | Level I | DW | 30.0 | 24.0 | |
| BALINGASAG | Pob. Barangay 4 | Level I | SW | 12.0 | 9.0 | |
| BALINGASAG | Pob. Barangay 4 | Level I | DW | 36.0 | 30.0 | |
| BALINGASAG | Pob. Barangay 5 | Level I | SW | 12.0 | 9.0 | |
| BALINGASAG | Pob. Barangay 5 | Level I | DW | 36.0 | 30.0 | |

Table 7.3.1 Well Inventory by Municipality

| Municipality | Barangay | Utilization | Type | Depth (m) | SWI (mbgs) | Spe. Cap. (lpsm) |
|--------------|------------------|-------------|------|-----------|------------|------------------|
| BALINGASAG | Pob. Barangay 6 | Level I | SW | 12.0 | 9.0 | |
| BALINGASAG | Pob. Barangay 6 | Level I | DW | 30.0 | 24.0 | |
| BALINGASAG | San Isidro | Level I | SW | 18.0 | 17.0 | |
| BALINGASAG | San Isidro | Level I | DW | 54.0 | 40.0 | |
| BALINGASAG | Talusan | Level I | SW | 18.0 | 12.0 | |
| BALINGASAG | Talusan | Level I | DW | 54.0 | 40.0 | |
| BALINGASAG | Waterfall | Level I | SW | 12.0 | 9.0 | |
| BALINGASAG | Waterfall | Level I | DW | 36.0 | 30.0 | |
| BALINGOAN | Dahilig | Level I | DW | 45.7 | 25.9 | |
| BALINGOAN | Pob. Baukbauk | Level I | SW | 12.0 | 10.0 | |
| BALINGOAN | San Alonzo | Level I | SW | 19.1 | 5.5 | |
| CLAVERIA | Ani-e | Level I | SW | 12.0 | 9.0 | |
| CLAVERIA | Ani-c | Level I | DW | 54.0 | 24.0 | |
| CLAVERIA | Madaguig | Level I | DW | 54.9 | 25.9 | |
| CLAVERIA | Patrocenio | Level I | DW | 42.7 | 24.4 | |
| EL SALVADOR | Amoros | Level I | SW | 15.0 | 6.0 | |
| EL SALVADOR | Bolisong | Level I | DW | 39.0 | 24.0 | |
| EL SALVADOR | Cogon | Level II | DW | 45.0 | 33.0 | 0.1 |
| EL SALVADOR | Himaya | Level II | DW | 51.0 | 35.0 | 0.1 |
| EL SALVADOR | Hinigdaan | Level I | DW | 45.0 | 18.0 | |
| EL SALVADOR | Kalabaylabay | Level I | DW | 33.0 | 22.0 | |
| EL SALVADOR | Kibonbon | Level II | DW | 70.0 | 53.0 | |
| EL SALVADOR | Molugan | Level III | DW | 24.0 | 16.0 | 0.1 |
| EL SALVADOR | Poblacion | Level III | DW | 47.0 | 32.0 | 0.2 |
| EL SALVADOR | Sambulawan | Level I | SW | 10.0 | 5.0 | |
| EL SALVADOR | Sinaloc | Level I | SW | 15.0 | 3.0 | |
| EL SALVADOR | Sinaloc | Level II | DW | 36.0 | 24.0 | 0.2 |
| EL SALVADOR | Taytay | Level II | DW | 30.0 | 10.0 | 0.1 |
| EL SALVADOR | Ulaliman | Level I | DW | 79.0 | 68.0 | |
| GINGOOG | Pob. Barangay 01 | Level III | DW | | | 1.2 |
| GINGOOG | Pob. Barangay 02 | Level III | DW | | | 0.8 |
| GINGOOG | Pob. Barangay 03 | Level III | DW | | | 1.0 |
| GINGOOG | Pob. Barangay 04 | Level III | DW | | | 1.4 |
| GITAGUM | Burnay | Level I | SW | 9.1 | 6.1 | |
| GITAGUM | Burnay | Level II | DW | 26.0 | 21.0 | 0.1 |
| GITAGUM | Cogon | Level I | SW | 6.0 | 3.0 | |
| GITAGUM | Cogon | Level I | DW | 40.0 | 2.0 | |
| GITAGUM | Gregorio Pelaez | Level I | SW | 2.5 | 1.0 | |
| GITAGUM | Gregorio Pelaez | Level I | DW | 30.0 | 3.0 | |
| GITAGUM | Kilangit | Level I | SW | 12.0 | 3.0 | |
| GITAGUM | Kilangit | Level I | DW | 55.0 | 12.0 | |
| GITAGUM | Matangad | Level I | SW | 12.0 | 6.0 | |
| GITAGUM | Matangad | Level I | DW | 45.0 | 6.0 | |
| GITAGUM | Pangayawan | Level I | SW | 10.0 | 4.0 | |
| GITAGUM | Poblacion | Level I | SW | 20.0 | 2.5 | |
| GITAGUM | Poblacion | Level I | DW | 200.0 | 5.0 | |

Table 7.3.1 Well Inventory by Municipality

| Municipality | Barangay | Utilization | Type | Depth (m) | SWI. (mbgs) | Spe. Cap. (lpsm) |
|--------------|-------------|-------------|------|-----------|-------------|------------------|
| GITAGUM | Quezon | Level I | SW | 10.0 | 3.0 | |
| GITAGUM | Quezon | Level I | DW | 24.0 | 6.0 | |
| INITAO | Pagahan | Level I | DW | 110.0 | 80.0 | |
| INITAO | Poblacion | Level III | DW | | | 1.7 |
| INITAO | Pontacon | Level I | DW | 180.0 | | 0.9 |
| INITAO | San Pedro | Level II | DW | | | 0.1 |
| JASAAN | San Antonio | Level I | DW | 27.4 | 18.3 | |
| JASAAN | San Nicolas | Level II | DW | 29.4 | 18.3 | 0.9 |
| KINOGUITAN | Buko | Level I | SW | 9.1 | 3.0 | |
| KINOGUITAN | Esperanza | Level I | DW | 21.3 | 18.3 | |
| KINOGUITAN | Poblacion | Level I | DW | 42.7 | 21.3 | 0.3 |
| LAGONGLONG | Dampil | Level I | SW | 9.1 | 3.0 | |
| LAGONGLONG | Dampil | Level I | DW | 30.0 | 4.0 | |
| LAGONGLONG | Kabulawan | Level I | SW | 10.0 | 4.0 | |
| LAGONGLONG | Kabulawan | Level I | DW | 36.0 | 4.0 | |
| LAGONGLONG | Kauswagan | Level I | SW | 12.0 | 3.0 | |
| LAGONGLONG | Kauswagan | Level I | DW | 40.0 | 5.0 | |
| LAGONGLONG | Lumbo | Level I | SW | 12.0 | 4.5 | |
| LAGONGLONG | Lumbo | Level I | DW | 40.0 | 5.0 | |
| LAGONGLONG | Manao | Level I | SW | 10.0 | 5.0 | |
| LAGONGLONG | Manao | Level I | DW | 24.3 | 12.2 | |
| LAGONGLONG | Tabok | Level I | SW | 9.1 | 3.0 | |
| LAGONGLONG | Tabok | Level I | DW | 40.0 | | |
| LAGUINDINGAN | Aromahon | Level II | DW | 45.7 | 12.2 | |
| LAGUINDINGAN | Gasi | Level I | DW | 45.0 | 24.0 | |
| LAGUINDINGAN | Moog | Level II | DW | 67.0 | 54.9 | |
| LAGUINDINGAN | Poblacion | Level III | DW | 76.2 | 24.4 | 0.5 |
| LAGUINDINGAN | Sambulawan | Level II | DW | 76.2 | 53.4 | |
| LIBERTAD | Dulong | Level I | SW | 6.0 | 4.0 | |
| LIBERTAD | Dulong | Level II | DW | 60.0 | 45.0 | |
| LIBERTAD | Gimaylan | Level I | SW | 6.0 | 4.0 | |
| LIBERTAD | Gimaylan | Level II | DW | 36.0 | 24.0 | |
| LIBERTAD | Kimalok | Level I | SW | 12.0 | 6.0 | |
| LIBERTAD | Kimalok | Level I | DW | 64.0 | 45.0 | |
| LIBERTAD | Lubluban | Level I | DW | 45.0 | 24.0 | |
| LIBERTAD | Poblacion | Level I | SW | 8.0 | 3.0 | |
| LIBERTAD | Poblacion | Level III | DW | 30.0 | 18.0 | 0.1 |
| LIBERTAD | Retablo | Level I | DW | 55.0 | 35.0 | |
| LIBERTAD | Santo Nino | Level I | SW | 12.0 | 6.0 | |
| LIBERTAD | Santo Nino | Level I | DW | 45.0 | 20.0 | |
| LIBERTAD | Tangcub | Level I | DW | 45.0 | 24.0 | |
| LIBERTAD | Taytayan | Level I | SW | 8.0 | 4.0 | |
| LIBERTAD | Taytayan | Level I | DW | 55.0 | 45.0 | |
| LUGAIT | Aya-aya | Level I | SW | 6.0 | 4.0 | |
| LUGAIT | Betahon | Level I | SW | 6.0 | 4.0 | |
| LUGAIT | Biga | Level I | SW | 9.0 | 5.0 | |

Table 7.3.1 Well Inventory by Municipality

| Municipality | Barangay | Utilization | Type | Depth (m) | SWL (mbgs) | Spe. Cap. (lpsn) |
|--------------|------------------|-------------|------|-----------|------------|------------------|
| LUGAIT | Biga | Level I | DW | 36.0 | 21.3 | |
| LUGAIT | Calangahan | Level I | SW | 9.0 | 4.0 | |
| LUGAIT | Calangahan | Level I | DW | 36.0 | 21.3 | |
| LUGAIT | Kaluknayan | Level I | SW | 6.0 | 4.0 | |
| LUGAIT | Poblacion | Level I | SW | 9.0 | 4.0 | |
| LUGAIT | Poblacion | Level II | DW | 36.0 | 22.0 | |
| LUGAIT | Talacogon Lower | Level I | SW | 6.0 | 4.0 | |
| LUGAIT | Talacogon Lower | Level III | DW | | | 1.1 |
| LUGAIT | Talacogon Upper | Level I | SW | 6.0 | 4.0 | |
| MAGSAYSAY | Bonifacio Aquino | Level I | DW | 36.6 | 18.3 | |
| MAGSAYSAY | Candiis | Level I | DW | 36.6 | 12.2 | |
| MAGSAYSAY | Consuelo | Level I | SW | 9.1 | 3.0 | |
| MAGSAYSAY | Poblacion | Level I | SW | 9.1 | 3.5 | |
| MAGSAYSAY | San Isidro | Level I | SW | 9.1 | 4.0 | |
| MANTICAO | Argayoso | Level I | SW | 9.1 | 3.0 | |
| MANTICAO | Cabalantian | Level I | SW | 9.1 | 3.0 | |
| MANTICAO | Pagawan | Level I | SW | 12.2 | 6.1 | |
| MANTICAO | Patag | Level I | SW | 9.1 | 3.0 | |
| MANTICAO | Poblacion | Level I | SW | 9.1 | 3.0 | |
| MEDINA | Bangbang | Level I | DW | 50.0 | 30.0 | |
| MEDINA | Bulwa | Level I | SW | 9.1 | 4.1 | |
| MEDINA | Bulwa | Level II | DW | 35.6 | 25.0 | 0.2 |
| MEDINA | Cabug | Level I | SW | 9.1 | 3.0 | |
| MEDINA | Cabug | Level I | DW | 30.0 | 22.0 | |
| MEDINA | Duka | Level I | SW | 9.1 | 4.1 | |
| MEDINA | Duka | Level I | DW | 57.9 | 29.3 | |
| MEDINA | Maanas | Level I | SW | 9.1 | 4.1 | |
| MEDINA | Maanas | Level I | DW | 36.6 | 24.3 | |
| MEDINA | Pahindong | Level I | SW | 9.1 | 4.1 | |
| MEDINA | Pahindong | Level I | DW | 30.0 | 22.0 | |
| MEDINA | Pob. North | Level I | SW | 9.1 | 3.0 | |
| MEDINA | Pob. North | Level III | DW | | | 0.4 |
| MEDINA | Pob. South | Level I | SW | 9.1 | 4.1 | |
| MEDINA | Pob. South | Level I | DW | 30.0 | 22.0 | |
| MEDINA | Portulin | Level I | SW | 9.1 | 4.1 | |
| MEDINA | San Isidro | Level I | SW | 9.1 | 4.1 | |
| MEDINA | Tambagan | Level I | SW | 9.1 | 4.1 | |
| MEDINA | Tambagan | Level I | DW | 40.0 | 25.0 | |
| MEDINA | Tup-on | Level I | SW | 9.1 | 4.1 | |
| MEDINA | Tup-on | Level I | DW | 33.0 | 24.0 | |
| NAAWAN | Don Pedro | Level I | SW | 6.1 | 1.5 | |
| NAAWAN | Don Pedro | Level I | DW | 30.5 | -1.0 | |
| NAAWAN | Linangkayan | Level I | SW | 12.2 | 4.3 | |
| NAAWAN | Lubilan | Level II | DW | | | 0.1 |
| NAAWAN | Mapulog | Level I | SW | 6.1 | 1.5 | |
| NAAWAN | Mapulog | Level I | DW | 20.4 | 12.2 | |

Table 7.3.1 Well Inventory by Municipality

| Municipality | Barangay | Utilization | Type | Depth (m) | SWL (mbgs) | Spe. Cap. (lpsm) |
|--------------|----------------|-------------|------|-----------|------------|------------------|
| NAAWAN | Maputi | Level I | SW | 12.2 | 7.6 | |
| NAAWAN | Mat-i | Level I | SW | 6.1 | 1.5 | |
| NAAWAN | Mat-i | Level I | DW | 20.4 | 9.1 | |
| NAAWAN | Patag | Level I | SW | 9.1 | 3.7 | |
| NAAWAN | Patag | Level I | DW | 36.6 | 32.9 | |
| NAAWAN | Tagbalogo | Level I | SW | 7.6 | 3.1 | |
| NAAWAN | Tagbalogo | Level I | DW | 21.3 | 3.1 | |
| NAAWAN | Tuboran | Level I | SW | 12.2 | 9.1 | |
| NAAWAN | Tuboran | Level I | DW | 30.5 | 19.5 | |
| OPOL | Awang | Level I | SW | 6.0 | 4.0 | |
| OPOL | Awang | Level I | DW | 42.7 | 24.4 | |
| OPOL | Barra | Level I | DW | 24.4 | 18.3 | |
| OPOL | Bonbon | Level I | SW | 6.0 | 5.0 | |
| OPOL | Bonbon | Level I | DW | 36.6 | 30.5 | |
| OPOL | Luyongbonbon | Level I | DW | 36.6 | 24.4 | |
| OPOL | Malanang | Level I | DW | 42.7 | 36.6 | |
| OPOL | Poblacion | Level I | SW | 6.0 | 4.0 | |
| OPOL | Poblacion | Level I | DW | 24.3 | 18.3 | |
| OPOL | Taboc | Level I | SW | 12.2 | | |
| SALAY | Ampeñican | Level I | SW | 12.2 | 6.1 | |
| SALAY | Bunal | Level I | SW | 12.2 | 6.1 | |
| SALAY | Guinalaban | Level I | DW | 30.5 | 18.3 | |
| SALAY | Ili-ilihon | Level I | DW | 30.5 | 18.3 | |
| SALAY | Looc | Level I | SW | 12.2 | 6.1 | |
| SALAY | Matampa | Level I | SW | 9.1 | 3.0 | |
| SALAY | Tinagaan | Level I | DW | 42.7 | 24.4 | |
| TAGOLOAN | Baluarte | Level I | SW | 9.1 | 3.0 | |
| TAGOLOAN | Casinglot | Level I | DW | 24.3 | 18.3 | |
| TAGOLOAN | Natumolan | Level I | DW | 24.4 | 18.3 | |
| TAGOLOAN | Poblacion | Level I | SW | 9.1 | 3.0 | |
| TAGOLOAN | Santa Ana | Level II | DW | 36.6 | 18.3 | 0.1 |
| TAGOLOAN | Sugbongcogon | Level I | SW | 9.1 | 3.2 | |
| TALISAYAN | Mandahilag | Level I | DW | 36.4 | 30.5 | |
| TALISAYAN | Poblacion | Level I | DW | 24.3 | 18.3 | |
| TALISAYAN | Punta Santiago | Level I | SW | 9.1 | 3.0 | |
| TALISAYAN | Puting Balas | Level I | SW | 9.1 | 3.0 | |
| TALISAYAN | Santa Ines | Level I | SW | 9.1 | 3.0 | |
| VILLANUEVA | Balacanas | Level I | SW | 9.1 | 3.0 | |
| VILLANUEVA | Dayawan | Level I | SW | 9.1 | 3.0 | |
| VILLANUEVA | Katipunan | Level I | SW | 9.1 | 3.0 | |
| VILLANUEVA | Looc | Level I | SW | 9.1 | 3.0 | |
| VILLANUEVA | Poblacion | Level I | SW | 9.1 | 3.0 | |
| VILLANUEVA | San Martin | Level I | SW | 18.2 | 9.1 | |

7.3.3 Groundwater Quality

Table 7.3.2 Groundwater Quality

| No. | Municipality | Type | Bacterio. | | T | Physical Analysis | | | | Chemical Analysis | | | | Major Cations | | | | Major Anions | | | Trace Ele. | | |
|-----|--------------|--|------------|------------|---|-------------------|-----|--------|----------|-------------------|------------|---------|------------|---------------|---------|--------|---------|--------------|----------|-----------|------------|----------|---------|
| | | | Coli. Cnt. | Bact. Cnt. | | NTU | TCU | Odor | TDS mg/l | EC mmhc | pH | TH mg/l | Alka. mg/l | Acid. mg/l | Na mg/l | K mg/l | Ca mg/l | Mg mg/l | CO3 mg/l | HCO3 mg/l | Cl mg/l | SO4 mg/l | Fe mg/l |
| | | Philippine National Standard for Drinking Water -1994- | 0 | 0 | - | >5 | >5 | unobj. | >500 | - | 6.5 to 8.5 | - | - | - | - | - | - | - | 200 | 200 | >250 | >1 | >0.5 |
| 1 | Alibijid | DW | | | | 0 | | | | | 6.9 | | | | | | | | | | | | 0.0 |
| 2 | Alibijid | SP | | | | 9 | | | | | 6.9 | | | | | | | | | | | | 0.0 |
| 3 | Balingasag | DW | | | | | | | | | 6.7 | | | | | | | | | | | | 0.0 |
| 4 | Balingasag | SP | | | | 0.8 | | | | | 6.3 | | | | | | | | | | | | - |
| 5 | Balingasag | SW | | | | | | | | | 7.9 | | | | | | | | | | | | 0.0 |
| 6 | Balingoam | DW | | | | | | | | | - | | | | | | | | | | | | - |
| 7 | Balingoam | SP | | | | | | | | | - | | | | | | | | | | | | - |
| 8 | Balingoam | SW | | | | | | | | | - | | | | | | | | | | | | 0.4 |
| 9 | El Sarvador | DW | | | | 33 | | | | | 7.2 | | | | | | | | | | | | 0.0 |
| 10 | El Sarvador | DW | | | | 34 | | | | | 6.9 | | | | | | | | | | | | 0.0 |
| 11 | Gitagum | DW | | | | | | | | | 6.7 | | | | | | | | | | | | 0.3 |
| 12 | Gitagum | SW | | | | 118 | | | | | 7.1 | | | | | | | | | | | | 0.0 |
| 13 | Initao | DW | | | | | | | | | - | | | | | | | | | | | | 0.1 |
| 14 | Initao | SW | | | | | | | | | - | | | | | | | | | | | | 0.4 |
| 15 | Lagonglong | DW | | | | | | | | | 6.8 | | | | | | | | | | | | 0.0 |
| 16 | Lagonglong | SP | | | | 0.5 | | | | | 6.8 | | | | | | | | | | | | 0.0 |
| 17 | Laguindingan | DW | | | | 227 | | | | | 6.7 | | | | | | | | | | | | 0.4 |
| 18 | Opol | DW | | | | | | | | | 7.1 | | | | | | | | | | | | 0.1 |
| 19 | Tagoloan | SP | | | | | | | | | 6.7 | | | | | | | | | | | | - |
| 20 | Tagoloan | SW | | | | | | | | | 6.9 | | | | | | | | | | | | 0.0 |
| 21 | Villanueva | DW | | | | 30 | | | | | 7.0 | | | | | | | | | | | | 0.0 |

Source; Water quality results were collected from respective Water Districts or analyzed by PSPT on site in the field survey using procured instruments. Notes; Sampling point is located at handpump (L-I) or submersible pump (L-II/III).

7.5 Surface Water Sources

Table 7.5.1 Surface Water Quality

| Major River Water | Surface Water Information | | Parameter | | | | | | | | | | | | | | PNSDW -1994 | | | Surface Water Pollutants in upstream |
|--|---------------------------|---------------------|--------------|-----------|---------|-------------|----------|---------|----------|-----------|----------|--------|--------|-----------------|---------|---------|-------------|---------|---------|--------------------------------------|
| | Systems & Main | Sampling Location | Date (m/d/y) | Color TCU | pH | D.Oxy. mg/l | BOD mg/l | SS mg/l | TDS mg/l | MBAS mg/l | O/G mg/l | N mg/l | P mg/l | Coli. MPN/100ml | Cl mg/l | Cu mg/l | Tur. NTU | Fe mg/l | Mn mg/l | |
| DENR | | | Class AA | 15 | 6.5-8.5 | 70 | 1 | 25 | 500 | nil | nil | 1 | nil | 50 | 250 | 1 | 5 | 1 | 0.5 | |
| Water Quality Criteria for Fresh Water | | | Class A | 50 | 6.5-8.5 | 70 | 5 | 50 | 1,000 | 0.2 | 1 | 10 | 0.1 | 1,000 | 250 | 1 | | | | |
| Odiangan | | Claveria | | | | | | | | | | | | | | | | | | |
| | | Gingoog City | | 33 | 7.1 | | | | | | | | | 10 | | | 5.8 | 0.3 | 0.1 | |
| Mallig | | Claveria | | 11 | 7.3 | | | | | | | | | 0 | | | 3.2 | 0.4 | 0.0 | |
| | | Balingasag | | 194 | 7.0 | | | | | | | | | 10 | | | 24.2 | 0.4 | 0.1 | |
| | | Jasaan | | 550 | 7.7 | | | | | | | | | 10 | | | 43.4 | 0.4 | 0.3 | |
| Tagaloan | | Tagaloan | | 289 | 7.4 | | | | | | | | | 100 | | | 38.7 | 0.4 | 0.1 | Mining/Industry |
| Cagayan | | Cagayan de Oro City | | 154 | 7.3 | | | | | | | | | 0 | | | 17.4 | 0.3 | 0.0 | Mining |
| Iponan | | Naawan | | 31 | 7.5 | | | | | | | | | 0 | | | 6.1 | 0.3 | 0.0 | |
| | | El Salvador | | 550 | 7.5 | | | | | | | | | 100 | | | 162.0 | 0.4 | 0.3 | |
| | | Opol | | 261 | 7.5 | | | | | | | | | 0 | | | 66.0 | 0.4 | 0.1 | |

Source: Water quality results were collected from respective Water Districts or analyzed by PSPT on site in the field survey using procured instruments.

Notes: Sampling point is located at upstream boundary of each river in respective municipalities.

If several streams are present in an area, the stream nearest from populated area was selected.

If there is no upstream, sampling point was selected near populated area.

Remarks: Class AA - Public Water Supply Class-I.

Intended for waters having watersheds which are uninhabited and otherwise protected and which require only approved disinfection in order to meet the PNSDW.

Class A - Public Water Supply Class-II.

Sources of water supply that will require complete treatment (coagulation, sedimentation, filtration & disinfection) in order to meet the PNSDW.

7.6 Future Development Potential of Water Sources

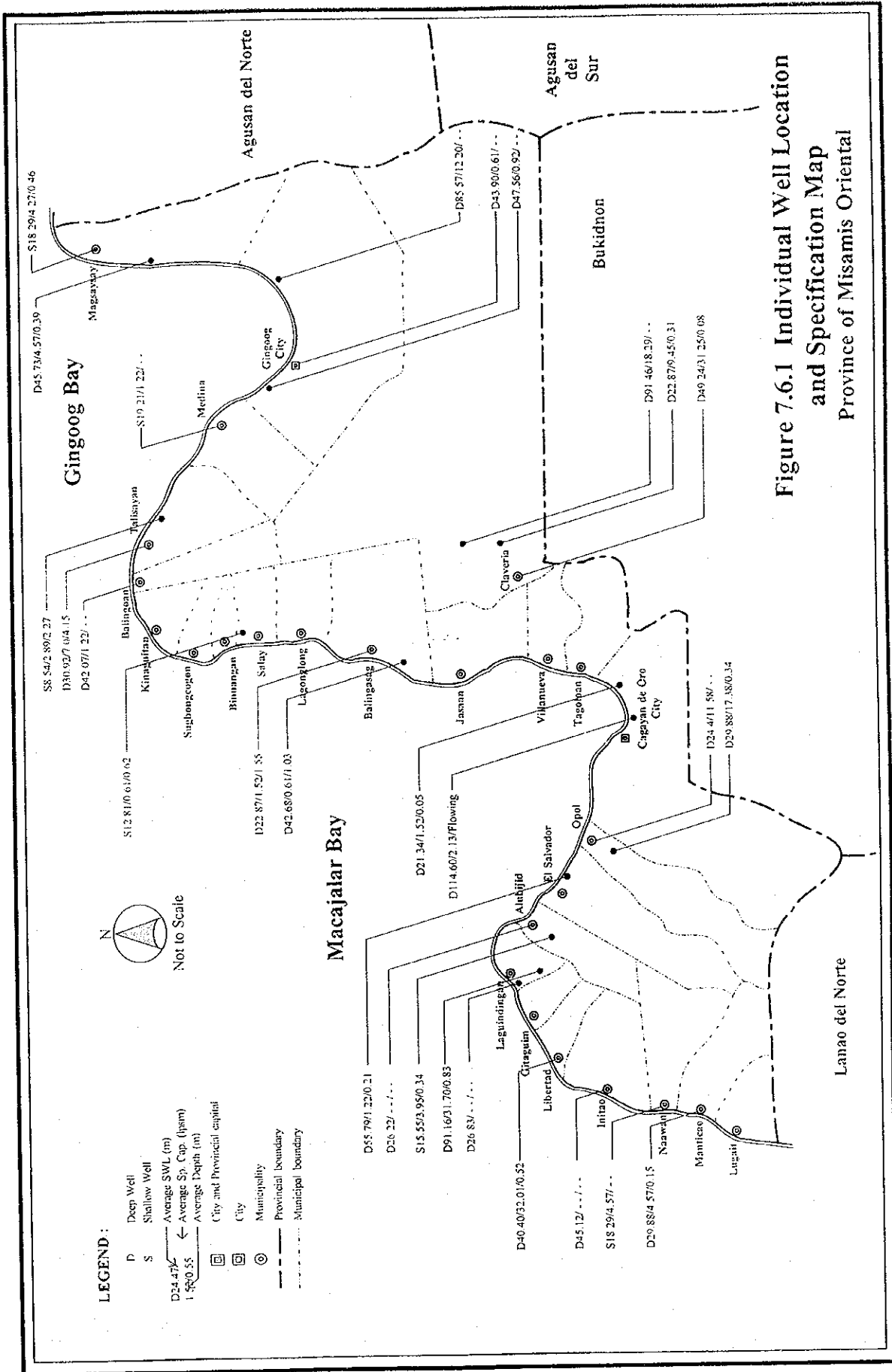


Figure 7.6.1 Individual Well Location and Specification Map Province of Misamis Oriental







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