stored according to the Survey result is appended in 3-C "List of Well Database in the Central Dry Zone" of Vol. IV, Data and Drawings.

6.8 Results and Progress of the Study

Relevant results were procured through the Survey. Base map preparation dealing with digitizing features was completed for the river, road, railway, Township boundary, etc. The existing topographic maps and satellite images were used as backdrop in acquisition of land information. With regard to the well database preparation, the total numbers of 1222 tube well locations (126 DDA wells, 1074 WRUD wells, and 22 test wells drilled in this Study) were posted on the Map Window as point features with all descriptive information designed and stored in the GIS software and Excel Spreadsheet. Moreover, the data on monitoring wells selected for periodical measurement of groundwater level and water quality was updated according to the result of measurement.

Digitized features and stored data can be utilized in many designs according to those requirements.

6.9 Technology Transfer

From an early stage, the Work was conducted in collaboration with DDA counterparts as part of On the Job Training (OJT). Hence, the counterparts have an understanding of a series of the Work. Concretely, they can fill out the survey sheet shown in Fig. 6.1 in order, and can input the proper data into the well database operating in the GIS software when new well data has to be added to the database. They also have knowledge to modify the well database on the GIS software, if necessary. Moreover, a brief manual to manipulate the well database was made as a quick start guide as shown in 3-J "Manual for the DDA Well Database" of Vol. III, Supporting Report. This can be used for the occasion that the counterparts want to review the database, or that other DDA staff needs to lean the GIS software in the future operation.

It is expected that DDA will continue to extend the area of database, and that the database will be utilized for many purpose such as future development plan, groundwater management, hydro-geological analysis, etc.

Existing Tube Well Data Sheet (for DDA Wells)
The Study on Water Supply Systems in Mandalay City and in the Central Dry Zone

Well No. (ID or Code): _____ Division: _____ Creation date: _____ Revision date: _____

General

District	Township	Location (Village Tract/Village)	Map Grid	Latitude	Longitude	Ground level (ft)	Owner's name	Owner's tel.
		/						

Bore hole depth (ft)	Bore hole dia. (in)	Casing dia. (in)	W. Level (static) (ft)	Well condition	Well type	Pump type	Operation hours (hrs)	Daily avg. water use (g.p.d)	Water Quality	Use of water	Population served
				Working / Abandoned	D.W. / S.W. / Dug W.	Hnd P. / Compsr. / Power P			Fresh / Not fresh	Domes. / Indst. / Irrg.	
									Aquifer dep./ thick. (ft)	Lithology of aquifer	Remarks
									/		

Well construction

Drill start date	Drill compl. date	Drilling method	Drilling contractor	Rig type

Pump Record

Pump depth (ft)	Pump install date	Pump model	Pump ID	Engine (BHP)
Elec. Motor (kw)	Static W. L. (ft)	Dynamic W. L. (ft)	Capacity of pump (g.p.h)	Pipe dia. & material

Casing **Screen**

Casing leng. (ft)/material	Screen leng. (ft)/material	Top/Bottom depth (ft)	Slot size(in)/Open ratio(%)
/	/	/	/

Well location (sketch)

Water Quality Date of Sampling: Date of Analysis:

(General Properties)

Appearance	Color	Smell	Electrical conductivity	Temp.	pH	Salinity	Sediments	T.D.S	Total hardness	Permanent Hardness	Ammonia nitrogen	Albuminoid nitrogen	Total alkalinity
	(TCU)		(μ mob/cm)	(℃)		(mg/l)		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)

(Chemical Properties) (Biological Properties)

Cations				Anions								Total	FECAL
Na+	Ca++	Mg++	K+	T. iron (Fe)	Cl-	SO^{4-}	HCO^{3-}	CO^{2-}	Fl	NO^{3-}	NO^{2-}	Coliform	Coliform
(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)		

Fig. 6.1 (A) **The Form of Data Sheet Used in the Field Survey (for DDA Wells).**

The Study on Water Supply Systems in Mandalay City and Central Dry Zone

Existing Tube Well Data Sheet (for WRUD Wells)
The Study on Water Supply Systems in Mandalay City and in the Central Dry Zone

Division:
Township

No.	Name of Village tract	Name of Village	Constructed Year	Well Depth	Size (in)	Length of Pipe		S.W.L (ft)	Yield (g.p.h)	Kind of Engine & Pump		Remarks
						Casing Pipe (ft)	Screen (ft)			Engine type	Pump type	
စဉ်	ကျေးရွာအုပ်စု အမည်	ကျေးရွာ အမည်	ခုနှစ်	အနက် ပေ	အရွယ်	ပိုက်သား (ပေ)	ကောပိုက် (ပေ)	ရေနေ (ပေ)	ရေထွက်နှုန်း (ဂါလံ/နာရီ)	အင်ဂျင် အမျိုးအစား	ပန့် အမျိုးအစား	မှတ်ချက်
1												
2												
3												
4												
5												
6												
7												
8												
9												
0												

Fig. 6.1 (B) **The Form of Data Sheet Used in the Field Survey (for WRUD Wells).**

The Study on Water Supply Systems in Mandalay City and Central Dry Zone

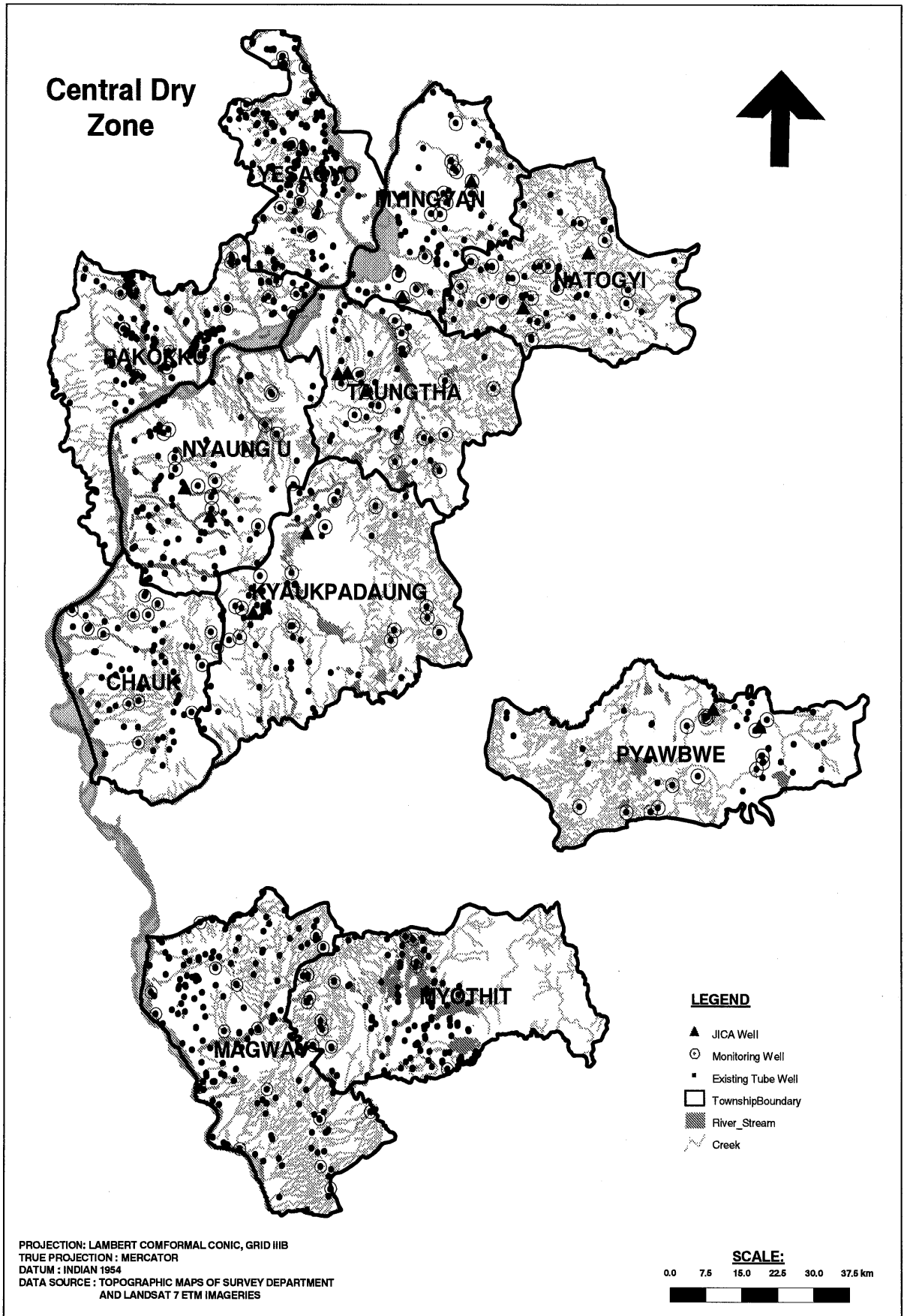

FIG: 8.2	BASE MAP OF CENTRAL DRY ZONE

The Study on Water Supply Systems in Mandalay City and in the Central Dry Zone

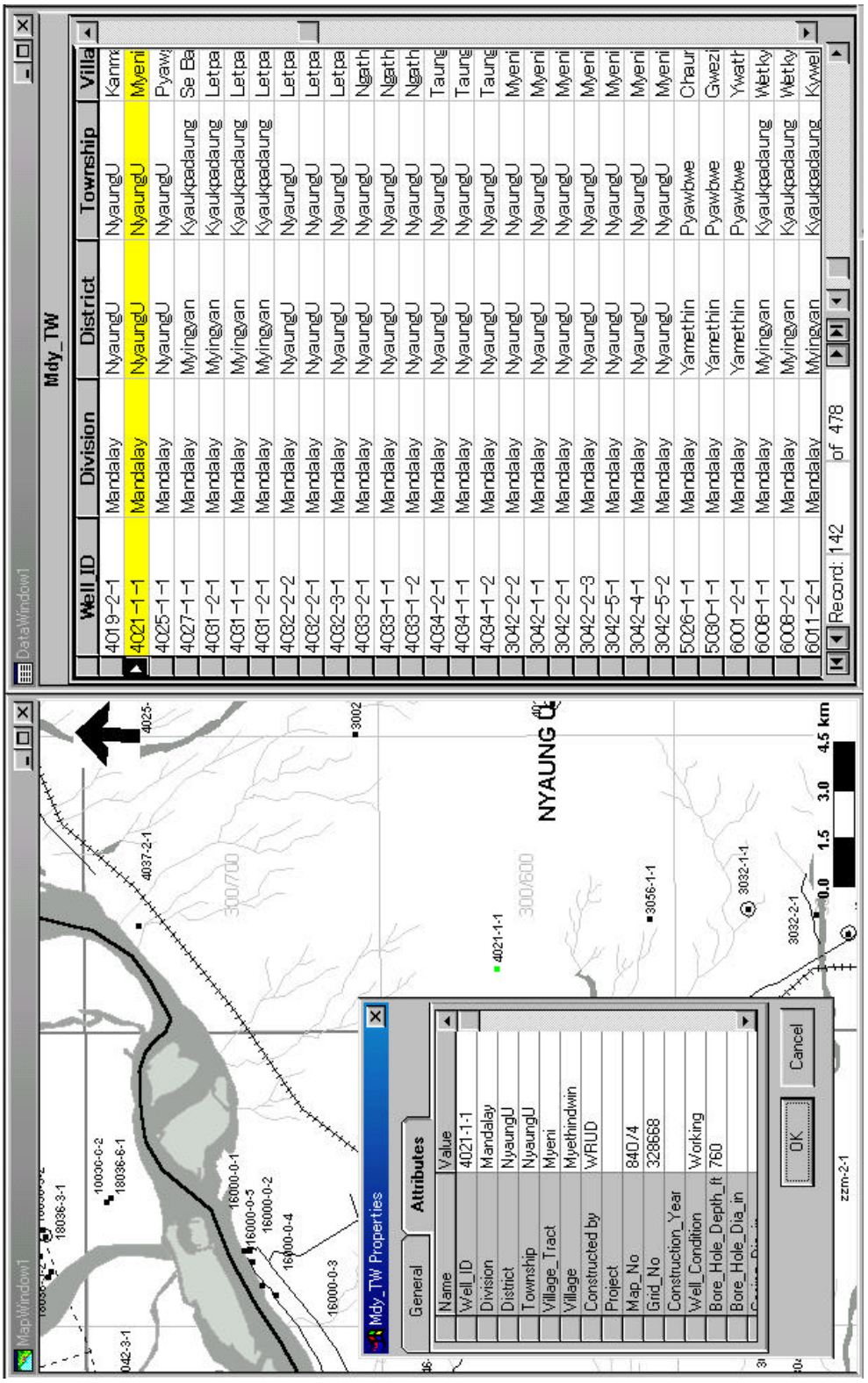

Fig. 6.3	**A Sample of Well Database Established in the Project.**

The Study on Water Supply Systems in Mandalay City and Central Dry Zone