



National Groundwater Information System

Data Dictionary

03/12/2024



Revision history

Date	Version	Description
01/11/2024	1.0	Updated contents for Explorer 2024 release
04/12/2024	2.0	Converted to Bureau template format, polished so the file is tight and concise

Review status

Date	Version	Description
5/12/2024	2.0	Reviewed (minimal changes from last release).

Release history

Date	Version	Status	Approval
6/12/2024	2.0	Approved	General Manager, Environmental Prediction Services, Community Services Group



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Abbreviations

Value	
D	Coded value domain - default value
C	Coded value domain
S	Standardised terms
U	Unrestricted

1. Feature Dataset

1.1. Core

1.1.1. Definition of dataset

Name	Core
Description	Feature dataset that contains bore points, bore lines and construction lines
ArcHydro equivalent	Borehole
Comment	-

1.2. Hydrostratigraphy

1.2.1. Definition of dataset

Name	Hydrostratigraphy
Description	Feature dataset that contains Hydrostratigraphy feature classes e.g. GeoVolumes
ArchHydro equivalent	Hydrostratigraphy
Comment	-

2. Feature Classes

2.1. NGIS_Bore

2.1.1. Definition of dataset

Name	NGIS Bore
ShapeType	Point
FeatureType	Simple
AliasName	NGIS_Bore
HasM	False
HasZ	False
Description	A point that represents the location of a bore and associated attributes.

ArchHydro equivalent	Well
Comment	<p>A bore is defined as having a single x, y and z location:</p> <ul style="list-style-type: none"> Multiple independently screened outlets or pipes (i.e. that can be pumped and/or metered separately) are regarded as a separate bore feature. Multiple holes associated with the same jurisdictional bore identifier are regarded as a separate bore feature

2.1.2. Definition of fields

Field	Data Type	Length	Definition	Unit	Values
HydroID	Long	-	Unique feature identifier within the NGIS geodatabase	-	U
HydroCode	String	30	Jurisdictional bore and pipe/outlet identifier (if relevant) <i>e.g. GW030285.1.1 in NSW, 90001A in QLD</i>	-	U
StateBoreID	String	30	Jurisdictional bore identifier <i>e.g. GW030285 in NSW, 90001 in QLD</i>	-	U
StatePipeID	String	30	Jurisdictional hole, pipe or outlet identifier (if relevant) <i>e.g. 1.1 in NSW, A in QLD</i>	-	U
StateTerritory	Long	-	Abbreviated name for State or Territory within which the bore is located <i>e.g. VIC, QLD, SA, NSW</i> Coded value domain - 7.1 StateTerritory	-	C
Agency	Long	-	Name of agency responsible for managing the bore <i>e.g. Department of Environment and Primary Industries</i> Coded value domain - 7.2 Agency	-	C

Field	Data Type	Length	Definition	Unit	Values
WCode	Long	-	6-character code used to identify organisations listed in the Water Regulations 2008, which supply groundwater data relevant to the bore to the Bureau e.g. w00074, w00078 Coded value domain - 7.3 WCode	-	S
BoreDepth	Double	-	Maximum completed depth of bore	Metres	U
DrilledDepth	Double	-	Maximum drilled depth of bore	Metres	U
Status	String	30	Status of bore e.g. FUN (functional), DCM (decommissioned), ABN (abandoned) Standardised terms - 8.1 Status	-	S
DrilledDate	Date	-	Date record of bore construction	DD-MON-YYYY-HH24:MI:SS	U
HGUID	Long	-	Hydro ID of hydrogeologic unit screened by or contributing water to bore	-	U
HGUNumber	Long	-	Jurisdictional number for the hydrogeologic unit screened by or contributing water to bore	-	U
NafHGUNumber	Long	-	National Aquifer Framework (NAF) number for the hydrogeologic unit screened by or contributing water to bore	NafHGUNumber	Long
FType	String	50	Feature Type – distinguishes between types of bore features based on their purpose	FType	String

Field	Data Type	Length	Definition	Unit	Values
Latitude	Double	-	Latitude of bore (Geographics GDA94)	Latitude	Double
Longitude	Double	-	Longitude of bore (Geographics GDA94)	Decimal degrees	U
Easting	Double	-	Easting of bore	Metres	U
Northing	Double	-	Northing of bore	Metres	U
Northing	Double	-	Northing of bore	Metres	U
Projection	Long	-	Projection for northing and easting co-ordinates i.e. MGA GDA94 Coded value domain - 7.4 Projection	-	D
CoordMethod	String	30	Method used to determine the co-ordinates <i>e.g. SVY (surveyed), GPS (measured using global positioning system), MAP (estimated from a map), EST (estimated using unknown method)</i> Standardised terms - 8.4 CoordMethod and ElevMethod	-	S
HeightDatum	String	30	Height datum for elevation attributes <i>e.g. AHD (Australian height datum), MSL (mean sea level), STD (state datum), ASL (above sea level)</i> Standardised terms - 8.3 HeightDatum	-	S
RefElev	Double	-	Reference elevation used to calculate the elevation of features in the NGIS core, such as lithologic units, hydrogeologic units and construction elements	mAHD	U
RefElevMethod	String	30	Method used to determine the reference elevation	-	S

Field	Data Type	Length	Definition	Unit	Values
			<i>e.g. SVY (surveyed), GPS, DEM (estimated from DEM), EST (estimated using other method)</i> Standardised terms - 8.4 CoordMethod and ElevMethod		
TsRefElev	Double	-	Reference elevation used to calculate time series elevation measurements, such as reduced groundwater levels	mAHD	U
TsRefElevDesc	String	30	Description of the measuring point for the time series reference elevation <i>e.g. NGS (ground surface), TOC (top of casing), COV (top of casing cover)</i> Standardised terms - 8.5 RefElevDesc	-	S
TsRefElevMethod	String	30	Method used to determine the time series reference elevation <i>e.g. SVY (surveyed), GPS, DEM (estimated from DEM), EST (estimated using other method)</i> Standardised terms - 8.4 CoordMethod and ElevMethod	-	S
LandElev	Double	-	Land surface elevation	mAHD	U
LandElevMethod	String	30	Method used to determine the land elevation <i>e.g. SVY (surveyed), GPS, DEM (estimated from DEM), EST (estimated using other method)</i> Standardised terms - 8.4 CoordMethod and ElevMethod	-	S

Field	Data Type	Length	Definition	Unit	Values
IsMultiPipe	Long	-	Flag that indicates whether a bore feature is part of a multi-pipe bore <i>i.e. Yes, No or Unknown</i> Coded value domain - 7.9 IsMultiPipe	IsMultiPipe	Long
BoreLineCode	String	10	Codes that identifies bores drilled in a line for creating cross-sections	-	U
WorksID	Long	-	Identifier for license to drill and construct bore e.g. Works Approval Number (Water Management Act) or Licence No (Water Act) in NSW, Water Affecting Activity Permit in South Australia	-	U
LicenceExtractID	Long	-	License number for groundwater extraction associated with bore. Only applies to production bores.	LicenceExtractID	Long
LicenceExtractVolume	Double	-	Maximum volume of groundwater that is licensed to be extracted from the bore.	Megalitres/year	U
LicenceUseID	Long	-	License number for groundwater use associated with bore. Only applies to production bores. e.g. Access Licence (Water Management Act) or Property Account (Water Act)	-	U
FTypeClass	String	50	Simplified classification of bore purpose Standardised terms - 8.10 FTypeClass (NGIS Bore)	-	S
ConstructionLog	Short	-	Availability of construction log data Coded Value Domain - 7.3 DataAvailability	-	C
LithLog	Short	-	Availability of lithology log data Coded Value Domain - 7.3 DataAvailability	-	C
HydrostratLog	Short	-	Availability of Hydrostratigraphy log data Coded Value Domain - 7.3 DataAvailability	-	C
WaterLevel	Short	-	Availability of water level data Coded Value Domain - 7.3 DataAvailability	-	C

Field	Data Type	Length	Definition	Unit	Values
Salinity	Short	-	Availability of salinity data Coded Value Domain - 7.3 DataAvailability	-	C
WaterCount	Long	-	Number of water level measurements	-	U
WaterDateMin	Date	-	Earliest date of water level data	DD-MON-YYYY-HH24:MI:SS	U
WaterDateMax	Date	-	Latest date of water level data	DD-MON-YYYY-HH24:MI:SS	U
SalinityCount	Long	-	Number of salinity measurements	-	U
SalinityDateMin	Date	-	Earliest date of salinity data	DD-MON-YYYY-HH24:MI:SS	U
SalinityDateMax	Date	-	Latest date of salinity data	DD-MON-YYYY-HH24:MI:SS	U

2.2. NGIS_ManagementZone

2.2.1. Definition of dataset

Name	NGIS ManagementZone
ShapeType	Polygon
FeatureType	Simple
AliasName	NGIS_ManagementZone
HasM	False
HasZ	False
Description	A polygon that represents the groundwater management zones
ArchHydro equivalent	-
Comment	-

2.2.2. Definition of dataset

Field	Data Type	Length	Definition	Units	Values
HydroID	Long	-	Unique feature identifier within the NGIS geodatabase	-	U
Name	String	100	Jurisdictional name for management area	-	U
FullName	String	200	Full jurisdictional name for management area	-	U
StateTerritory	Long	-	Abbreviated name for state or territory within which the management area is located <i>e.g. VIC, QLD, SA, NSW</i>	-	C

Field	Data Type	Length	Definition	Units	Values
			Coded value domain - 7.1 StateTerritory		
Agency	Long	-	Name of agency responsible for groundwater management e.g. <i>Department for Water</i> Coded value domain - 7.2 Agency	-	C
ManagementUnitType	Long	-	Jurisdictional classification of management area e.g. Prescribed Wells Area, Groundwater Area Coded value domain - 7.12 ManagementZoneType	-	C
PlanName	String	200	Name of the plan relevant to the management area		U
Status	Long	-	Declaration status of the plan e.g. declared, proposed Coded value domain - 7.13 PlanStatus		C
FromDepth	Double	-	Depth below surface to bottom of management area (if applicable)	Metres	U
ToDepth	Double	-	Depth below surface to top of management area (if applicable)	Metres	U
Declared	Date	-	Date when the plan was gazetted or declared	Date	U
PlanRef	String	200	Web link to the management plan or general groundwater management information	-	U
SHAPE_Length	Double	-	Arcmap auto appends and calculates this field.	Metres	U
SHAPE_Area	Double	-	Arcmap auto appends and calculates this field.	Cubic metres	U

2.3. NGIS_GeoVolumes

2.3.1. Definition of dataset

Name	NGIS_GeoVolumes
ShapeType	MultiPatch
FeatureType	Simple
AliasName	NGIS_GeoVolumes
HasM	False
HasZ	True
Description	Multipatch representing hydrogeologic units (HGU) or complexes (HGC)
ArcHydro equivalent	GeoVolumes
Comment	Delivery of this feature class by data providers is optional

2.3.2. Definition of fields

Field	Data Type	Length	Definition	Units	Values
HydroID	Long	-	Unique feature identifier within the NGIS geodatabase	-	U
Name	String	100	Jurisdictional name for management area	-	U
FullName	String	200	Full jurisdictional name for management area	-	U
StateTerritory	Long	-	Abbreviated name for state or territory within which the management area is located. e.g. VIC, QLD, SA, NSW Coded value domain - 7.1 StateTerritory	-	C
Agency	Long	-	Name of agency responsible for groundwater management e.g. <i>Department for Water</i> Coded value domain - 7.2 Agency	-	C
ManagementUnitType	Long	-	Jurisdictional classification of management area e.g. Prescribed Wells Area, Groundwater Area Coded value domain - 7.12 ManagementZoneType	-	C
PlanName	String	200	Name of the plan relevant to the management area		U
Status	Long	-	Declaration status of the plan e.g. declared, proposed Coded value domain - 7.13 PlanStatus		C
FromDepth	Double	-	Depth below surface to bottom of management area (if applicable)	Metres	U
ToDepth	Double	-	Depth below surface to top of management area (if applicable)	Metres	U
Declared	Date	-	Date when the plan was gazetted or declared	Date	U
PlanRef	String	200	Web link to the management plan or general groundwater management information	-	U
SHAPE_Length	Double	-	Arcmap auto appends and calculates this field.	Metres	U

SHAPE_Area	Double	-	Arcmap auto appends and calculates this field.	Cubic metres	U
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2.4. NGIS_Aquifer

2.4.1. Definition of dataset

Name	NGIS_Aquifer
ShapeType	Polygon
FeatureType	Simple
AliasName	NGIS_Aquifer
HasM	False
HasZ	False
Description	A polygon that represents aquifer boundaries
ArchHydro equivalent	-
Comment	-

2.4.2. Definition of dataset

Field	Data Type	Length	Definition	Units	Values
HydroID	Long	-	Unique feature identifier for Aquifer (or combination of NAF HGC and province)	-	U
AquiferName	String	254	State hydrogeological unit name	-	U
AquiferProvName	String	254	Name of groundwater province or basin		

Field	Data Type	Length	Definition	Units	Values
AquiferType	String	254	Aquifer type <i>e.g. Upper, Middle, Lower</i>	-	C
NafHGCName	String	254	NAF name of HGC	-	S
NafHGCNumber	Long	-	NAF number for the HGC	-	S
HGUName	String	254	Jurisdictional name of HGU	-	U
NafHGUName	String	254	NAF name of the HGU	-	S
HorizonID	Long	-	Index for describing sequence of hydrogeologic units	-	C
Source	String	254	Jurisdictional data provider	-	U

3. Rasters

3.1. NGIS_GeoRasters

3.1.1. Definition of dataset

Name	NGIS_GeoRasters
ShapeType	-
FeatureType	-
AliasName	NGIS_GeoRasters
HasM	-

HasZ	-
Description	Catalog of raster datasets describing properties of hydrogeologic units (HGU) or complexes (HGC) e.g. depth to/elevation of top or base, salinity, yield, potentiometry
ArcHydro equivalent	GeoRasters
Comment	Delivery of this raster dataset by data providers is optional

3.1.2. Definition of fields

Field	Data Type	Length	Definition	Units	Values
Raster	Raster	-	Generic raster catalogue attribute (created automatically when raster catalogue is created)	-	D
Name	String	512	Name of raster	-	U
Variable	String	10	Variable described by the raster <i>e.g. TOP, BOT</i> Standardised value - 8.11 Variable	-	S
VarUnits	String	30	Units for the variable described by the raster <i>e.g. Metres, mAHD</i> Standardised value - 8.12 VarUnits	-	S
HGUID	Long	-	HydroID from the hydrogeologic unit (HGU) table	-	U
HGUNumber	Long	-	Numeric ID of the HGU	-	U
HGUName	String	100	Name of HGU	-	U
HGCNumber	Long	-	Numeric ID of HGC	-	U

HGCName	String	100	Name of HGC	-	U
NafHGUNumber	Long	-	NAF numeric ID for HGU	-	SN/A
NafHGUName	String	100	NAF name of HGU	-	SN/A
NafHGCNumber	Long	-	NAF numeric ID for HGC	-	S
NafHGCName	String	100	NAF name of HGC	-	S
HorizonID	Short	-	Index for describing sequence of hydrogeologic units	-	U
ModelRegion	String	100	Name of region covered by the georaster <i>e.g. Murray Basin</i>	-	U
SHAPE_Length	Double	-	Arcmap auto appends and calculates this field.	Metres	U
SHAPE_Area	Double	-	Arcmap auto appends and calculates this field.	Square metres	U

4. Tables

4.1. NGIS_Boreholelog

4.1.1. Definition of dataset

Name	NGIS_Boreholelog
Data Type	Table
Alias Name	NGIS_BoreholeLog
Relationships	NGIS_Bore

Description	Table with strata classified into hydrogeological units along a borehole; interpreted bore logs
ArcHydro equivalent	BoreHoleLog
Comment	<p>The BoreholeLog table contains bores with interpreted stratigraphy. A bore must be represented in the BoreholeLog table in order for BoreLine features to be created for that bore. There may be multiple stratigraphic interpretations of a LithologyLog for each bore, which are distinguished by the Scenario field.</p> <p>For each unique stratigraphic interpretation in the BoreholeLog table, there is one record for each stratum. Each stratum record for a bore has the same field value for BoreID, RefElev, but the differing values for FromDepth, ToDepth, TopElev, BotElev and HGUID.</p>

4.1.2. Definition of fields

Field	Data Type	Length	Description	Units	Values
BoreID*	Long	-	Numeric identifier that corresponds to the HydroID of NGIS_Bore feature	-	U
HydroCode	String	30	Jurisdictional bore and pipe/outlet identifier (if relevant) <i>e.g. GW030285.1.1 in NSW, 90001A in QLD</i>	-	U
RefElev	Double	-	Reference elevation used to calculate the elevation of hydrogeologic units (HGU) in the bore log	mAHD	U
RefElevDesc	String	30	Description of the measuring point for the reference elevation <i>e.g. NGS (ground surface), TOC (top of casing), COV (top of casing cover)</i>	-	S

			Standardised values - 8.5 RefElevDesc		
FromDepth	Double	-	Depth to top of HGU below reference elevation	Metres	U
ToDepth	Double	-	Depth to base of HGU below reference elevation	Metres	U
TopElev	Double	-	Elevation for top of HGU	mAHD	U
BottomElev	Double	-	Elevation for bottom of HGU	mAHD	U
HGUID	Long	-	HydroID from the hydrogeologic unit (HGU) table	-	U
HGUNumber	Long	-	Jurisdictional number for identifying the HGU	-	U
NafHGUNumber	Long	-	National Aquifer Framework (NAF) number for identifying the HGU	-	S
Description	String	255	Additional description of HGU, such as the HGU name or lithology from a drilling log	-	U
Author	String	50	Person responsible for stratigraphic interpretation	-	U
Source	String	100	Source of stratigraphic interpretation <i>e.g.</i> database, publication, agency	-	U
Comment	String	250	Additional comments relating to stratigraphic interpretation	-	U
Scenario	Long	-	Number used to distinguish between different stratigraphic interpretations <i>e.g.</i> -1, -2, 0, 1, 2, 3	-	U
LogType	Long	-	Type of the borehole log <i>i.e.</i> <i>Hydrostratigraphy</i> Coded value domain - 7.6 LogType (NGIS BoreLog)	-	D

4.2. NGIS_Constructionlog

4.2.1. Definition of dataset

Name	NGIS_ConstructionLog
DataType	Table
AliasName	NGIS_ ConstructionLog
Relationships	NGIS_Bore
Description	Table with bore construction information (e.g. casing, screen, packing material, cement) along a borehole
ArchHydro equivalent	Variant of BoreHoleLog
Comment	A bore feature must be represented in the ConstructionLog table in order for ConstructionLine features to be created for that bore.

4.2.2. Definition of fields

Field	Data Type	Length	Description	Units	Values
BoreID*	Integer	-	Numeric identifier that corresponds to the HydroID of NGIS_Bore feature	-	U
HydroCode	String	30	Jurisdictional bore and pipe/outlet identifier (if relevant) <i>e.g. GW030285.1.1 in NSW, 90001A in QLD</i>	-	U
RefElev	Double	-	Reference elevation used to calculate the elevation elements in the construction log	mAHD	U

Field	Data Type	Length	Description	Units	Values
RefElevDesc	String	30	Description of the measuring point for the reference elevation <i>e.g. NGS (ground surface), TOC (top of casing), COV (top of casing cover)</i> Standardised values - 8.5 RefElevDesc	-	S
FromDepth	Double	-	Depth to top of bore component	Metres below reference elevation	U
ToDepth	Double	-	Depth to base of bore component	Metres below reference elevation	U
TopElev	Double	-	Elevation for top of bore component	mAHD	U
BottomElev	Double	-	Elevation for bottom of bore component	mAHD	U
ConstructionType	String	50	Bore component which record applies to <i>e.g. VOID (Bore hole)</i> <i>INLT (Inlet)</i> <i>LIN (Lining)</i> <i>AFIL (Annulus fill)</i> <i>VFIL (Void fill)</i> Standardised value - 8.6 ConstructionType	-	S
Material	String	50	Material of bore component <i>e.g. STL (steel), PLST (plastic), GVL (gravel), CLY (clay)</i> Standardised value - 8.7 (Construction) Material	-	S
InnerDiameter	Double	-	Inner diameter	Millimetres	U
OuterDiameter	Double	-	Outer diameter (or diameter if inner diameter not applicable or available)	Millimetres	U

Field	Data Type	Length	Description	Units	Values
Property	String	50	Property of bore component which PropertySize field is describing <i>e.g. PS (perforation size) or SAP (slot aperture) for inlet GS MAX (maximum grain size) for annulus fill</i> Standardised value - 8.8 Construction Property	-	S
PropertySize	Double	-	Size of bore component described in Property field	Millimetres	U
DrillMethod	String	50	Method of construction <i>e.g. ROT (rotary), HMR (rotary hammer), AUG (auger)</i> Standardised value - 8.9 Drill Method	-	S
LogType	Integer	-	Type of the borehole log <i>i.e. Bore construction</i> Coded value domain - 7.7 LogType (NGIS_ConstructionLog)	-	D

4.3. NGIS_LithologyLog

4.3.1. Definition of dataset

Name	NGIS_LithologyLog
DataType	Table
AliasName	NGIS_LithologyLog
Relationships	NGIS_Bore
Description	Table with driller's or geologist's description of sediments or rocks (strata) along a borehole.
ArchHydro equivalent	Variant of BoreHoleLog

Name	NGIS_LithologyLog
Comment	<p>The LithologyLog table is populated from a driller's or lithology (geologist's) log. As a bore can have both driller's and lithology log, there can be more than one LithologyLog for each bore.</p> <p>The LithologyLog can be interpreted to create one or more BoreholeLogs i.e. lithological units are interpreted and associated with hydrogeologic units.</p> <p>Each lithological record for a bore has the same field value for BoreID and RefElev, but the differing values for FromDepth, ToDepth, TopElev and BottomElev.</p>

4.3.2. Definition of fields

Field	Data Type	Length	Description	Units	Values
BoreID*	Integer	-	Numeric identifier that corresponds to the HydroID of NGIS_Bore feature	-	U
HydroCode	String	30	Jurisdictional bore and pipe/outlet identifier (if relevant)		
e.g. GW030285.1.1 in NSW, 90001A in QLD	-	U			
RefElev	Double	-	Reference elevation used to calculate the elevation of strata in the lithology log	mAHD	U
RefElevDesc	String	30	Description of the measuring point for the reference elevation		
e.g. NGS (ground surface), TOC (top of casing), COV (top of casing cover)					

Field	Data Type	Length	Description	Units	Values
Standardised values - 8.5 RefElevDesc					
-	S				
FromDepth	Double	-	Depth to top of strata	Metres below reference elevation	U
ToDepth	Double	-	Depth to base of strata	Metres below reference elevation	U
TopElev	Double	-	Elevation for top of strata	mAHD	U
BottomElev	Double	-	Elevation for bottom of strata	mAHD	U
MajorLithCode	String	50	Codes used to describe the major lithology		

4.4. NGIS_HydrogeologicUnit

4.4.1. Definition of dataset

Name	NGIS_HydrogeologicUnit
DataType	Table
AliasName	NGIS_ HydrogeologicUnit
Relationships	-

Description	Reference table describing the hydrologic units (HGU) and their relationship to hydrogeologic complexes (HGC)
ArcHydro equivalent	HydroGeologicUnit
Comment	HydroID is the unique key for this table. There is a unique HydroID for each combination of HGUName (or HGUNumber) and StateTerritory.

4.4.2. Definition of fields

Field	Data Type	Length	Description	Units	Values
HydroID*	Integer	-	Unique feature identifier for each combination of hydrogeologic unit (HGU) and State/Territory within the NGIS geodatabase	-	U
HGUName	String	100	Jurisdictional name of HGU <i>e.g. Calivil Formation</i>	-	U
HGUCode	String	30	Jurisdictional code for HGU <i>e.g. Tps</i>	-	U
HGUNumber	Integer	-	Jurisdictional number for HGU <i>e.g. 1024</i>	-	U
ProvName	String	100	Name of groundwater province or basin <i>e.g. Murray Basin</i>	-	U
StateTerritory	Integer	-	Abbreviated name for state or territory within which the HGU is located <i>e.g. VIC, QLD, SA, NSW</i> Coded value domain - 7.1 StateTerritory	-	C

Field	Data Type	Length	Description	Units	Values
HGUDescription	String	255	Text description of the HGU, which may include: <ul style="list-style-type: none"> ○ Age ○ Depositional environment ○ Dominant lithology ○ Aquifer/minor aquifer/aquitard ○ Unconfined/unconfined to confined/semi-confined/confined ○ Consolidated/unconsolidated ○ Porous/fractured rock/karstic <i>e.g. Tertiary fluvial sand and gravel. Unconfined aquifer.</i>	-	U
HGUAquiferType	Integer	-	Classification of HGU as: <ul style="list-style-type: none"> ○ Aquifer ○ Minor aquifer ○ Aquitard Coded value domain - 7.10 HGUAquiferType	-	S
HGUConfinedType	Integer	-	Classification of HGU as: <ul style="list-style-type: none"> ○ Unconfined ○ Unconfined to confined ○ Semi-confined ○ Confined Coded value domain - 7.11 HGUConfinedType	-	S
HGUTransmissivity	String	30	Transmissivity of the HGU Can be an average value or a range of values	Metres ² /day	U
HGUHydraulicK	String	30	Hydraulic conductivity of the HGU	Metres/day	U

Field	Data Type	Length	Description	Units	Values
			Can be an average value or a range of values		
HGUStorage	String	30	Storage coefficient of the HGU i.e. specific yield for unconfined aquifers and storativity for confined aquifers Can be an average value or a range of values	Coefficient	U
HGUThickness	String	30	Thickness of the HGU Can be an average value or a range of values	Metres	U
HGCID	Integer	-	Numeric identifier that corresponds to the HydroID of hydrogeologic complex (HGC) feature class (not yet part of NGIS)	-	S
HGCName	String	100	Jurisdictional name of the HGC <i>e.g. Upper Tertiary Fluvial Aquifer</i>	-	U
HGCCCode	String	30	Jurisdictional code of the HGC <i>e.g. UTAF</i>	-	U
HGCNumber	Integer	-	Jurisdictional number of the HGC <i>e.g. 105</i>	-	U
NafProvName	String	100	National Aquifer Framework (NAF) name of groundwater province or basin	-	S
NafHGUName	String	100	NAF name of the HGU	-	S
NafHGUCode	String	30	NAF code for the HGU	-	S
NafHGUNumber	Integer	-	NAF number for the HGU	-	S

Field	Data Type	Length	Description	Units	Values
NafHGCName	String	100	NAF name of the HGC	-	S
NafHGCCode	String	30	NAF code of the HGC	-	S
NafHGCNumber	Integer	-	NAF number for the HGC	-	S

5. Derived Feature Classes

5.1. NGIS_BoreLine

5.1.1. Definition of dataset

Name	NGIS_Boreline
ShapeType	Polyline
FeatureType	Simple
AliasName	NGIS_BoreLine
HasM	false
HasZ	true
Description	3D line that represents the hydrogeologic units along a borehole
ArcHydro equivalent	BoreLine
Comment	Derived from BoreHoleLog. This is a 3D line that is not visible in 2D views in ArcCatalog or ArcMap unless the line weight is 3 or greater.

5.1.2. Definition of fields

Field	Data Type	Length	Description	Units	Values
HydroID*	Integer	-	Unique feature identifier in the NGIS geodatabase	-	U
HydroCode	String	30	Jurisdictional bore and pipe/outlet identifier (if relevant) <i>e.g. GW030285.1.1 in NSW, 90001A in QLD</i>	-	U
BoreID	Integer	-	HydroID of the corresponding NGIS_Bore feature	-	U
TopElev	Double	-	Elevation for top of hydrogeologic unit (HGU)	mAHD	U
BottomElev	Double	-	Elevation for bottom of HGU	mAHD	U
HGUID	Integer	-	Jurisdictional numeric identifier of HGU	-	U
HGUNumber	Integer	-	Jurisdictional number for identifying the HGU	-	U
NafHGUNumber	Integer	-	National Aquifer Framework (NAF) number for identifying the HGU	-	S

5.2. NGIS_ConstructionLine

5.2.1. Definition of dataset

Name	NGIS_ConstructionLine
ShapeType	Polyline
FeatureType	Simple
AliasName	NGIS_ConstructionLine
HasM	false

HasZ	true
Description	3D line that represents the construction information (e.g. casing, screen, packing material, cement) along a borehole
ArcHydro equivalent	Variant of BoreLine
Comment	Derived from NGIS_ConstructionLog. This is a 3D line that is not visible in 2D views in ArcCatalog or ArcMap unless the line weight is 3 or greater.

5.2.2. Definition field

Field	Data Type	Length	Description	Units	Values
HydroID*	Integer	-	Unique feature identifier in the NGIS geodatabase	-	U
HydroCode	String	30	Jurisdictional bore and pipe/outlet identifier (if relevant) <i>e.g. GW030285.1.1 in NSW, 90001A in QLD</i>	-	U
BoreID	Integer	-	HydroID of the corresponding NGIS_Bore feature	-	U
TopElev	Double	-	Elevation for top of bore component	mAHD	U
BottomElev	Double	-	Elevation for bottom of bore component	mAHD	U
ConstructionType	String	30	Bore component which record applies to <i>e.g. VOID (Bore hole), INLT (Inlet), LIN (Lining), AFIL (Annulus fill) and VFIL (Void fill)</i> Standardised value - 8.7 ConstructionType	-	S

6. Relationship classes

6.1. BoreHasBoreholeLogs

Name	BoreHasBoreholeLogs
Cardinality	OneToMany
IsAttributed	False
IsComposite	False
ForwardPathLabel	NGIS_BoreholeLog
BackwardPathLabel	NGIS_Bore

Origin Class Name	Origin Primary Key	Origin Foreign Key
NGIS_Bore	HydroID	BoreID

Destination Class Name	Destination Primary Key	Destination Foreign Key
NGIS_BoreholeLog		

Description	Defines the relationship between bores (2D points) and interpreted hydrogeological logs (table)
DataTheme	
ArchHydro equivalent	WellHasBoreholeLogs

Comment	The NGIS_Bore feature class contains multi-pipe (i.e. bores monitoring or pumping several aquifers independently) and multiple-hole bores (i.e. nested bores with different holes). Each pipe or hole is represented as a separate bore feature. Each bore feature can have one or more bore logs; multiple bore logs can result from different interpretations of the hydrostratigraphy.
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6.2. BoreHasConstructionLogs

Name	BoreHasConstructionLogs
Cardinality	OneToMany
IsAttributed	False
IsComposite	False
ForwardPathLabel	NGIS_ConstructionLog
BackwardPathLabel	NGIS_Bore

Origin Class Name	Origin Primary Key	Origin Foreign Key
NGIS_Bore	HydrolD	BoreID

Destination Class Name	Destination Primary Key	Destination Foreign Key
NGIS_ConstructionLog		

Description	Defines the relationship between bores (2D points) and construction logs (table)
DataTheme	

ArchHydro equivalent	Variant of WellHasBoreholeLogs
Comment	<p>The NGIS_Bore feature class contains multi-pipe (i.e. bores monitoring or pumping several aquifers independently) and multiple-hole bores (i.e. nested bores with different holes). Each pipe or hole is represented as a separate bore feature. Each NGIS_Bore feature can have several construction components (e.g. screen, casing, packing material) stored in the construction log.</p> <p>Although, in reality the pipes in a multi-pipe bore can share construction elements, the same information is repeated in the construction log table for each bore feature.</p>

6.3. BoreHasLithologyLog

Name	BoreHasLithologyLogs
Cardinality	OneToMany
IsAttributed	False
IsComposite	False
ForwardPathLabel	NGIS_LithologyLog
BackwardPathLabel	NGIS_Bore

Origin Class Name	Origin Primary Key	Origin Foreign Key
NGIS_Bore	HydroID	BoreID

Destination Class Name	Destination Primary Key	Destination Foreign Key
NGIS_LithologyLog		

Description	Defines the relationship between bores (2D points) and lithology logs (table)
DataTheme	
ArcHydro equivalent	Variant of WellHasBoreholeLogs
Comment	<p>The NGIS_Bore feature class contains multi-pipe (i.e. bores monitoring or pumping several aquifers independently) and multiple-hole bores (i.e. nested bores with different holes). Each pipe or hole is represented as a separate bore feature.</p> <p>Although in reality the pipes in a multi-pipe bore can share a single lithology log, the same log is repeated in the lithology log table for each bore feature.</p> <p>In addition, each bore feature may have more than one lithology log. For example, there may be a driller's and geologist's log.</p>

6.4. BoreHasBoreLines

Name	BoreHasBoreLines
Cardinality	OneToMany
IsAttributed	False
IsComposite	False
ForwardPathLabel	NGIS_BoreLine
BackwardPathLabel	NGIS_Bore

Origin Class Name	Origin Primary Key	Origin Foreign Key
NGIS_Bore	HydroID	BoreID

Destination Class Name	Destination Primary Key	Destination Foreign Key
NGIS BoreLine		

Description	Defines the relationship between bores (2D points) and borelines (3D lines)
DataTheme	
ArchHydro equivalent	WellHasBoreLines
Comment	<p>The NGIS_Bore feature class contains multi-pipe (i.e. bores monitoring or pumping several aquifers independently) and multiple-hole bores (i.e. nested bores with different holes). Each pipe or hole is represented as a separate bore feature.</p> <p>There may be several interpretations of the hydrostratigraphy resulting in several bore lines for the same bore. For multi-pipe and multi-hole bores, the bore line is repeated for each pipe or hole and potentially multiple interpretations of the hydrostratigraphy.</p>

6.5. BoreHasConstructionLines

Name	BoreHasConstructionLines
Cardinality	OneToMany
IsAttributed	False
IsComposite	False
ForwardPathLabel	NGIS_ConstructionLine
BackwardPathLabel	NGIS_Bore

Origin Class Name	Origin Primary Key	Origin Foreign Key
NGIS_Bore	HydroID	BoreID

Destination Class Name	Destination Primary Key	Destination Foreign Key
NGIS ConstructionLine		

Description	Defines the relationship between bores (2D points) and construction lines (3D lines)
DataTheme	
ArchHydro equivalent	Variant of WellHasBoreLines
Comment	<p>Each NGIS_Bore feature can have several construction components (e.g. screen, casing, packing material), which can be represented in a 3D construction line.</p> <p>The NGIS_Bore feature class contains multi-pipe (i.e. bores monitoring or pumping several aquifers independently) and multiple-hole bores (i.e. nested bores with different holes). Each pipe or hole is represented as a separate bore feature. For multi-pipe and multi-hole bores, the construction line is repeated for each pipe or hole.</p>

6.6. HGUBoreLines

Name	BoreHasConstructionLines
Cardinality	OneToMany
IsAttributed	False

IsComposite	False
ForwardPathLabel	NGIS_BoreLine
BackwardPathLabel	NGIS_HydrogeologicUnit

Origin Class Name	Origin Primary Key	Origin Foreign Key
NGIS_HydrogeologicUnit	HydroID	HGUID

Destination Class Name	Destination Primary Key	Destination Foreign Key
NGIS_BoreLine		

Description	Defines which hydrogeologic units are intersected by borelines
DataTheme	
ArchHydro equivalent	HGUHasBoreLines
Comment	

6.7. HGUHasGeoRasters

Name	HGUHasGeoRasters
Cardinality	OneToMany
IsAttributed	False
IsComposite	False

Name	HGUHasGeoRasters
ForwardPathLabel	NGIS_GeoRasters
BackwardPathLabel	NGIS_HydrogeologicUnit

Origin Class Name	Origin Primary Key	Origin Foreign Key
NGIS_HydrogeologicUnit	HydroID	HGUID

Destination Class Name	Destination Primary Key	Destination Foreign Key
NGIS_GeoRasters		

Description	Defines which hydrogeologic units have georasters (rasters of HGU properties)
DataTheme	
ArchHydro equivalent	HGUHasGeoRasters
Comment	Currently there is no equivalent relationship class for hydrogeologic complexes.

6.8. HGUHasGeoVolumes

Name	HGUHasGeoVolumes
Cardinality	OneToMany
IsAttributed	False
IsComposite	False
ForwardPathLabel	NGIS_GeoRasters
BackwardPathLabel	NGIS_HydrogeologicUnit

Origin Class Name	Origin Primary Key	Origin Foreign Key
NGIS_HydrogeologicUnit	HydroID	HGUID

Destination Class Name	Destination Primary Key	Destination Foreign Key
NGIS_GeoRVolumes		

Description	Defines which hydrogeologic units have geovolumes (multipatch features representing 3D HGU geometry)
DataTheme	
ArchHydro equivalent	HGUHasGeoVolumes
Comment	Currently there is no equivalent relationship class for hydrogeologic complexes.

7. Coded Value Domains

Coded value domains specify a valid set of values for a field. Values that don't appear in the valid set cannot be stored in the field. Coded value domains have only been established for simple fields, such as Projection Zone and State / Territory where the full range of values is understood.

7.1. StateTerritory

Vales are taken from the State and Territory (S/T) spatial unit defined in the ABS Australian Standard Geographical Classification (ASGC):

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/DEDA554E1B6BB78BCA25791F000EEA26?opendocument>

Value	Name
1	NSW
2	VIC
3	SA
4	QLD
5	WA
6	TAS
7	NT
8	ACT
9	OTHER

7.2. Agency

Value	Name	State
1	WaterNSW	NSW
2	Department of Energy, Environment and Climate Action	VIC
4	Department of Environment, Water and Natural Resources	SA
5	Department of Manufacturing and Water Regional Development	QLD
6	Department of Water and Environmental Regulation	WA
7	Water Corporation	WA
8	Department of Natural Resources and Environment	TAS
9	Department of Environment, Parks and Water Security	NT
10	Environment and Planning Directorate	ACT
11	Icon Water Limited	ACT
15	Adelaide and Mount Lofty Ranges Natural Resources Management Board	SA
16	Eyre Peninsula Natural Resources Management Board	SA
17	Goulburn-Murray Water	VIC
18	Grampian Wimmera Mallee Water	VIC
19	Northern and Yorke Natural Resources Management Board	SA
20	SA Murray-Darling Basin Natural Resources Management Board	SA
21	South East Natural Resources Management Board	SA
22	Southern Rural Water	VIC
23	South Australian Arid Lands Natural Resources Management Board	SA
24	NCRIS	

Value	Name	State
25	Department of Primary Industries and Regional Development	WA
26	Power and Water	NT
27	Murray-Darling Basin Authority	
28	Department of Planning and Environment-Water	NSW

7.3. WCode

WCode is the code used by the Bureau of Meteorology to identify agencies providing Water Regulations data. WCode is provided in the table below for the Category K agencies (agencies that provide NGIS and State aquifer framework data):

<http://www.bom.gov.au/water/regulations/aboutRegs.shtml>

Value	Name	Description
1	w00066	Department of Natural Resources and Mines, QLD
2	w00067	Department of Environment and Natural Resources, NT
4	w00072	Department of Natural Resources and Environment, TAS
5	w00074	Department of Energy, Environment and Climate Action, VIC
6	w00075	Environment and Planning Directorate, ACT
7	w00076	Department of Water and Environmental Regulation, WA
8	w00077	Department of Planning and Environment-Water, NSW
9	w00078	Department of Environment, Water and Natural Resources, SA
10	w00247	Water Corporation, WA
11	w00057	Department of Primary Industries and Regional Development, WA
12	w9999	Non-regulations data

Value	Name	Description
13	W00002	Icon Water Limited

7.4. Projection

Default value

Value	Name
1	MGA GDA 94

7.5. ProjectionZone

Value	Name
49	49
50	50
51	51
52	52
53	53
54	54
55	55
56	56

7.6. LogType(NGIS_BoreLog)

Default value

Value	Name
1	Hydrostratigraphy

7.7. LogType(NGIS_ConstructionLog)

Default value

Value	Name
1	Bore construction

7.8. LogType(NGIS_LithologyLog)

Default value

Value	Name
1	Driller
2	Lithology

7.9. IsMultiPipe

Value	Name
1	Bore construction

7.10. HGUaQuiferType

Value	Name
1	Aquifer
2	Minor aquifer
3	Aquitard
4	Unclassified

7.11. HGUConfinedType

Value	Name
1	Unconfined
2	Unconfined to confined
3	Semi-confined
4	Confined
5	Unclassified

7.12. ManagementZoneType

Value	Name
1	Groundwater Area
2	Groundwater Management Area
3	Underground Water Area
4	Water Allocation Plan

Value	Name
5	Water Allocation Planning Area
6	Water Control District
7	Water Management Plan
8	Sustainable Diversion Limit Resources Unit
9	Water Plan
10	Water Sharing Plan
11	Water Sharing Rules
12	Water Supply Protection Area
13	Groundwater Sub-Area

7.13. PlanStatus

Value	Name
1	Commenced
2	Declared
3	Draft
4	Extended
5	Replaced

7.14. AquiferType

Value	Name
1	Upper

2	Middle
3	Lower

7.15. HorizonID

Value	Name
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
11	11

8. Standard terms

Each jurisdiction has developed terminology for describing bore data. In order to integrate jurisdictional data into a nationally-consistent database, it is necessary to standardise the terminology. During the late 1990s, the Australian National Groundwater Data Transfer Standard Working Group developed a set of standards for describing groundwater data. The Australian National Groundwater Data Transfer Standard is used as the basis for standardised terminology used in NGIS. The standard is available by email request to Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES): <http://www.agriculture.gov.au/general-inquiries>

8.1. Status

Code	Term	Definition
PDF	Periodic flow	Groundwater flow occurs at more or less regular intervals e.g. geyser
PRF	Perennial flow	Groundwater feature has continuous groundwater flow
PRP	Proposed	Construction has not occurred of the groundwater feature
RCF	Recharge response	Groundwater feature flows only after periods of recharge e.g. rainfall
REC	Reconditioned	Groundwater feature has been reconditioned so that functionality has improved
RMV	Removed	Groundwater feature has been physically removed
RPL	Replaced	Groundwater feature is not functional and has been replaced by a newer version
SEP	Seep	Small intake of groundwater into groundwater feature
SNF	Seasonal flow	Groundwater flow varies seasonally
UCF	Uncontrolled flow	Groundwater flow is uncontrolled
UNK	Unknown	Status of groundwater feature is unknown
USE	Functioning	Groundwater feature is functional and in use

8.2. FType (NGIS_Bore)

Code	Term	Definition
AQCT	Aquaculture	Water supply for aqua cultural enterprise
ASR	Aquifer storage and recovery	Aquifer storage and recovery (ASR) facility
BVGE	Beverages	Water supply for commercial beverages e.g. mineral water
CATL	Cattle	Water supply for cattle

Code	Term	Definition
COMS	Commercial	Water supply for commercial activities i.e. a service business that does not fabricate a product
CULT	Natural heritage/cultural	Feature of natural or cultural significance
DMGN	Domestic garden	Water supply for domestic garden
DOM	Domestic household	Domestic scale water supply for household needs e.g. washing, toilet
DOMD	Domestic drinking	Domestic scale potable water supply
DRNG	Drainage of groundwater	Drainage of groundwater principally to lower watertable or remove deleterious groundwater
DRNK	Potable water supply	Potable water supply i.e. drinking water
DROT	Drought relief	Emergency supply for drought relief
DWAT	Dewatering	Dewatering of an area or structure
DYCL	Dairy Cattle	Water Supply for dairy cattle
EXPR	Exploration or research	Bore installed for the purpose of exploration or research
GTHM	Geothermal	Electricity generated from geothermal source
GWMD	Groundwater modelling	Collection of hydrogeological information at nodal point of groundwater model
HELP	Emergency supply	Used as a water source when principle supply is unavailable
HUSE	Household	Water supply for household needs e.g. washing, toilet
INDS	Manufacturing and industry	Water supply for manufacturing and industry
INST	Institutional supply	Water supply for institution

Code	Term	Definition
IPST	Irrigated pasture	Water supply for irrigated pasture
IRAG	Irrigated agriculture	Water supply for irrigated agriculture
IRRD	Irrigation drainage	Disposal of irrigation drainage
LQDW	Liquid waste	Disposal of liquid waste
MIND	Mine drainage	Disposal of mine drainage
MINE	Mining	Mining i.e. extraction of minerals or energy resources
MNAS	Mining activities	Water supply for mining activities
MON	Monitoring	Monitoring of groundwater conditions
PUBS	Public facilities	Water supply for public facilities
RECN	Recreation	Water supply for recreational purposes
RECS	Recreation and cultural activities	Water supply for recreation and cultural activities
REMD	Remediation	Remediation of groundwater contamination
RESV	Reservoir	Water reservoir e.g. dam
RODS	Road Supply	Water supply for road
RPRS	Repressurise	Input of water in order to increase or maintain aquifer pressures
SLTI	Salinity Interception	Interception of saline groundwater
STOK	Water supply for livestock	Water supply for livestock

Code	Term	Definition
STRM	Storm water	Disposal of storm water
TOWN	Town household	Town scale water supply for household needs e.g. washing, toilet
TRAN	Transport	Transportation feature
TRCS	Transport/communications supply	Water supply for transport or communications facility
TWND	Town drinking	Town scale potable water supply
UBND	Urban drinking	Urban scale potable water supply
UNK	Unknown	The purpose of the groundwater feature is unknown
URBN	Urban household	Urban scale water supply for household needs e.g. washing, toilet
UTIL	Utilities	Water supply for utilities - fluid storage or power generation
VLGD	Village drinking	Village scale potable water supply
VLGE	Village household	Village scale water supply for household needs e.g. washing, toilet
WAST	Waste disposal	Disposal of waste materials
WSUP	Water supply	Community water supply

8.3. HeightDatum

The Australian Height Datum (AHD) is the recommended height datum. It is listed with the other commonly used height datums in the table below; other datums not included in the table should be formatted in a similar manner.

Code	Name
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AHD	Australian height datum
MSL	Mean sea level
STD	State datum
ASL	Above sea level
ASS	Assumed datum
UNK	Unknown

8.4. CoordMethod and ElevMethod

Common terms are listed in the table below. Further terms are available from the Australian National Groundwater Data Transfer Standard.

Code	Term	Definition
AIR	Air photo	Estimated from an air photo / aerial photography
ARB	Arbitrary	An arbitrary position assigned to a feature with unknown site
AST	Astronomical	Measured from astronomical observations
BAR	Barometer	Measured using aneroid barometer
CAD	Cadastre	Estimated by address matching or assigning to cadastre (property information)
CBF	Block Face	Placed on calculated midpoint of street segment of block
CNI	Nearest intersection	Placed on calculated midpoint of street segment of block
CPC	Property centre	Placed in centre of property
CTN	Town	Placed on centre of associated built up area

Code	Term	Definition
DEM	Digital Elevation Model	Estimated from digital elevation model (DEM)
EST	Estimate	Estimated using an unknown method i.e. not surveyed
FLD	Field	Estimated from field observation
GAT	Autonomous GPS	Autonomous global positioning system (GPS)
GDF	Differential GPS	Measured using differential GPS
GKN	Kinematic GPS	Measured using GPS device with phase kinematic relative positioning
GPS	Global positioning system	Measured using GPS
LID	Lidar	Estimated from LiDAR (Light Detection and Ranging) technology
GST	Static GPS	Measured using GPS device with phase static relative positioning
MAP	Map	Estimated from map e.g. using contours
OWN	Owner	Estimated from owner returns
RAD	Radio triangulation	Measured by triangulation using synchronised pulsed transmissions from radio stations
RPT	Report	Estimate derived from a report e.g. drillers location map
SAT	Satellite	Estimated from satellite imagery
SBM	Benchmark survey	Precise survey from a benchmark
SCP	Control point survey	Survey between non benchmark control points
STP	Stereophotogrammetry	Measured from stereopairs of photogrammes
STR	Trigonometric	Trigonometrical levelling

Code	Term	Definition
SVY	Survey	Traditional survey with ground control
UNK	Unknown	Method of location or elevation is unknown
VBL	Verbal	Estimated from verbal reports

8.5. RefElevDesc

Common terms are listed in the table below. Further terms are available from the Australian National Groundwater Data Transfer Standard.

Code	Term	Definition
AIR	Airline	Datum is base of airline
BDG	Bridge	Datum is top of bridge over groundwater feature e.g. lake, river
CAB	Cable	Datum is top of cable access on the cable tool rig
CEL	Element	Datum is construction element of groundwater feature
COL	Collar	Datum is top of hole collar during construction
CON	Construction	Datum is part of construction phase of groundwater feature
COV	Cover	Datum is top of protective cover over groundwater feature
FLR	Floor	Datum is top of floor of groundwater feature e.g. floor of dug well
GBD	Gauge board	Datum is top of gauge board
KLB	Kelly bushing	Datum is top of bushing or insert on rotary table found on rotary drill rigs through which the Kelly passes
NAT	Natural feature	Datum is a natural feature of landscape around site

Code	Term	Definition
NGS	Natural ground surface	Datum is ground surface at site of groundwater feature
PBP	Base plate	Datum is top of base plate for pump
SBM	Benchmark	Datum is top of a permanently established survey point
SMK	Survey marker	Datum is top of an arbitrary and temporary marker
SVY	Survey	Datum is part of survey
TOC	Top of Casing	Datum is top of casing/ standpipe
UNK	Unknown.	Feature that datum relates to is unknown
WEL	Well	Datum is the top of well frame or lining
WIN	Windmill clamp	Datum is top of windmill clamp

8.6. ConstructionType

Common terms are listed in the table below. Further terms are available from the Australian National Groundwater Data Transfer Standard.

Code	Term	Definition
AFIL	Annulus fill	Fill within the annulus between the lining and the surrounding geological material e.g. gravel pack, seal and grout
INLT	Inlet	Part of groundwater feature that allows intake of groundwater e.g. screen and slotted casing
LIN	Lining	Material inserted to line the inside of the void e.g. casing and pipe
PROT	Protection	Fittings used to protect the groundwater feature from damage
UNK	Unknown	The construction component is unknown

VFIL	Void fill	Material reinserted inside the void or existing lining e.g. backfill and packer
VOID	Void	Hole excavated to intercept groundwater

8.7. (Construction) Material

Common terms are listed in the table below. Further terms are available from the Australian National Groundwater Data Transfer Standard.

Code	Term	Definition
ABS	Acrylonitrile Butadiene Styrene	Polymer that has the hardness and strength of a vinyl resin and toughness and impact resistance of the butadiene-acrylonitrile rubber component
AC	Asbestos cement	Mixture of asbestos fibre, cement and water and highly resistant to corrosion
AGGR	Aggregate	Mass of rock particles and or mineral grains
AL	Aluminium	A light metal with high electrical conductivity and good corrosion resistance
BENT	Bentonite	Montmorillonite rich clay with the capability to swell in water and be activated in acid
BRK	Brick	A building material made of clay molded as a rectangular block and kiln fired
BRNZ	Bronze	A copper-tin alloy
BRNZS	Silicone bronze	A copper alloy with 1-5% silicon that is corrosion-resistant and has good mechanical properties
BRS	Brass	A copper-tin alloy
CLY	Clay	Geological material consisting of particles having diameters less than 2-4 micrometres
CMT	Cement	Finely ground powder which when mixed with water makes a plastic mass that will harden

Code	Term	Definition
CN	Concrete	Mixture of cement, an aggregate and water which hardens to a rocklike consistency
FBRG	Fibreglass	Material consisting of glass fibres or flakes reinforcing a matrix typically of polyester and epoxy resins
FRP	Fibreglass reinforced plastic	Plastic with glass fibre or flakes embedded for added strength
GALV	Galvanised iron	Iron with a coating of zinc to provide protection from corrosion
GVL	Gravel	Rock fragments typically rounded and dominated by particles larger than sand (>2mm)
MTL	Metal	An elemental substance usually with good strength, reflectivity and electrical and thermal conductivity properties
NONE	None	No material present
PE	Polyethylene	Thermoplastic material consisting of polymers of ethylene
PLST	Plastic	A polymeric material of large molecular weight which can be shaped by flow
ROCK	Rock	Undifferentiated mineral matter
SND	Sand	Rock or mineral particles having a diameter range of 1/16 to 2mm
SPL	Spoil or cuttings	Geological material excavated from feature
SSTL	Stainless steel	Corrosion resistant iron-chromium alloy
STKM	Mild steel	Carbon steel containing 0.05-0.25% carbon
STL	Steel	An iron base alloy with up to 2% carbon and malleable under proper conditions
STLC	Carbon steel	Steel containing up to 2% carbon

Code	Term	Definition
STLG	Galvanised steel	Steel with a coating of zinc to provide protection from corrosion
UNK	Unknown	Material is unknown
UPVC	Unplasticised polyvinylchloride	Thermoplastic polymer of vinyl chloride that is cheap, lightweight and chemically inert and typically used in molded rigid products
UPVC12	Unplasticised polyvinylchloride Class 12	uPVC with a moderate Class 12 pressure rating which is the recommended minimum casing standard
UPVC15	Unplasticised polyvinylchloride Class 15	uPVC with a high Class 15 pressure rating
UPVC18	Unplasticised polyvinylchloride Class 18	uPVC with a high Class 18 pressure rating
UPVC6	Unplasticised polyvinylchloride Class 6	uPVC with a low Class 6 pressure rating that is typically used in drainage or sewage applications
UPVC9	Unplasticised polyvinylchloride Class 9	uPVC with a Class 9 pressure rating which is the minimum class allowable for shallow bore casing
WOOD	Timber lining for wells	Hard fibrous substance making up the trunks and large branches of trees

8.8. (Construction) Property

Common terms are listed in the table below. Further terms are available from the Australian National Groundwater Data Transfer Standard.

Code	Term	Definition
GSMAX	Maximum grainsize	Maximum grainsize of fill (in mm)
GSMIN	Minimum grainsize	Minimum grainsize of fill (in mm)

GSMOD	Modal grainsize	Modal grainsize of fill (in mm)
PS	Perforation size	Size of perforations (in mm)
SAP	Screen aperture	Width of screen opening (in mm)
SLAP	Slot aperture	Width of individual slots (in mm)
SLL	Slot length	Length of individual slots (in mm)
UNK	Unknown	Construction element is unknown

8.9. DrillMethod

Common terms are listed in the table below. Further terms are available from the Australian National Groundwater Data Transfer Standard.

Code	Term	Definition
AUG	Auger	Drilling where cuttings are mechanically removed from hole without the use of fluids
BHO	Back hole	Hole dug by an excavator with a bucket attached to a hinged arm that is drawn towards the machine
BKT	Bucket Auger	Drilled using a large diameter cylindrical bucket with auger-type cutting blades on base
CBT	Cable Tool	Uses a heavy drilling tool that is raised and lowered with enough force to pulverise the rock, with the debris removed by bailer
CORE	Core	Drilling with an annular-shaped bit to penetrate and produce cylindrical rock cores
DMDC	Diamond Core	Core drilling with a hollow diamond-set bit designed to yield continuous cylindrical rock cores
DOZ	Dozer	Hole dug by a wheeled or crawler tractor equipped with a reinforced curved steel plate
DRGL	Drag Line	Hole dug by an excavator operated by pulling a bucket on ropes towards a jib

Code	Term	Definition
DRL	Drill	Circular hole created or enlarged using a rotating end cutting tool
DRV	Driven	Constructed by driving a length of casing usually of small diameter and equipped with a hardened point to the desired depth
HMR	Rotary hammer	Using a cutting tool powered by compressed air that creates a rapid percussion effect coupled with rotary action to drill hard rocks
JET	Hydraulic jet	Uses a high velocity fluid stream pumped through a pipe with a restricted opening or nozzle to dislodge rock material
MANA	Manual auger	Drilling with an auger that is hand powered
MANX	Manually excavated	Hole manually dug with tools that require human power e.g. pick, shovel
RC	Reverse circulation	Using a technique similar to rotary drilling except that drilling fluid flow down the annular space between the drilling stem and the wall of the hole forcing cuttings up through the drill stem
ROT	Rotary	Using a drill stem equipped with a bit that is rotated to cut and grind the rock with a fluid pumped down the stem to force cuttings up through the annular space between the stem and the wall of the hole
SNC	Sonic	Uses a drilling device that is made to vibrate at sonic frequency
UNK	Unknown	Unknown drilling method

8.10. FTypeClass (NGIS_Bore)

Term	Definition
Water supply	Water supply for a range of purposes (excluding irrigation, stock and domestic, commercial and industrial)
Monitoring	Monitoring of groundwater conditions e.g. water level, salinity

Irrigation	Water supply for irrigation including crops and pasture
Stock and domestic	Water supply for stock watering and domestic activities
Commercial and industrial	Water supply for commercial and industrial activities
Dewatering	Dewatering of an area or structure
Exploration	Exploration or reserach
Other	Other less common uses e.g. Aquifer storage and recovery (ASR)
Unknown	Purpose is unknown

8.11. Variable

Common terms are provided in the table below. Other terms not included in the table should be formatted in a similar manner.

Code	Definition
TOP	Elevation of top of unit
BOT	Elevation of bottom of unit
TOP_D	Depth (from natural ground surface) to top of unit
BOT_D	Depth (from natural ground surface) to bottom of unit
RSWL	Reduced Standing Water Level: elevation of groundwater
SWL	Standing Water Level: depth to groundwater
TDS	Total Dissolved Solids
EC	Electrical Conductivity

8.12. VarUnits

Common units are provided in the table below. Other terms not included in the table should be formatted in a similar manner.

Code	Definition
mAHD	Metres relative to the Australian Height Datum
Metres	Metres
uS/cm	Microsiemens per centimetre
mS/cm	Millisiemens per centimetre
mg/L	Milligrams per litre