

**APPENDIX 1**

**CATAHOULA AQUIFER SUMMARY  
BASELINE MONITORING PROJECT, EPA FY'98  
(July 1997 Through June 1998)**

**PART V  
OF  
TRIENNIAL SUMMARY REPORT  
FOR THE  
WATER QUALITY MANAGEMENT DIVISION  
OF  
LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY**

**PARTIAL FUNDING PROVIDED THROUGH CWA 106 GRANT**

# CATAHOULA AQUIFER SUMMARY

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## **BACKGROUND**

To better assess the water quality of a particular aquifer at a given point in time, an attempt was made during the project year to sample all project wells producing from a common aquifer in a narrow time frame. Also, to more conveniently and economically promulgate those data collected, these aquifer summaries will make up the project Triennial Summary Report.

Figure V-1 shows the geographic locations of the Catahoula Aquifer and the associated project wells, whereas Table V-1 lists the wells in the aquifer along with their total depths and the use made of produced waters and the date sampled.

These data show that in February 1998, six project wells were sampled which produce from the Catahoula Aquifer. Of these six wells, five are classified as Public Supply and one is Domestic. The wells are located in five parishes spread across the central part of the state.

## PROJECT FIELD AND ANALYTICAL PARAMETERS

The field parameters that are checked at each sampling site and the list of water quality parameters that are analyzed in the laboratory are shown in Table V-2. Those project inorganic (total metals) parameters analyzed in the laboratory are listed in Table V-3. These tables also show the field and analytical results determined for each analyte.

In addition to the analytical parameters mentioned above, a list of project analytical parameters include three other categories of compounds: Volatiles, Semi-volatiles, and Pesticides/PCB's. Due to the large number of analytes of these three categories, tables were not prepared for each well. However, in order for the reader to be aware of the total list of analytes, Tables V-4, V-5, and V-6 were included in this summary. The tables list the project analytes along with their Practical Quantitation Limits (PQLs) used during processing.

## DISCUSSION OF WATER QUALITY DATA

**FEDERAL PRIMARY DRINKING WATER STANDARDS:** Laboratory data show that no project water wells of the Catahoula Aquifer exceeded any Federal Maximum Contaminant Level (MCL).

Those project wells reporting Turbidity levels of >1 NTU, do not exceed the MCL of 1.0, as this primary standard applies to surface water systems only.

**FEDERAL SECONDARY DRINKING WATER STANDARDS:** Secondary standards are defined as non-enforceable taste, odor or appearance guidelines. Field and laboratory data contained in Tables V-2 and V-3 show that three of the wells sampled in the Catahoula Aquifer, and a duplicate of one of the wells, exceeded the Secondary Maximum Contaminant Levels (SMCL) for one analyte in this category.

### IRON (SMCL=300 ppb):

CT-119 exceeded this secondary standard with a reported concentration of 478 ppb.

LS-278 exceeded this secondary standard with a reported concentration of 633 ppb.

SA-442 exceeded this secondary standard with a reported concentration of 774 ppb.

The duplicate sample of SA-442 exceeded this secondary standard with a reported concentration of 845 ppb.

### SELECTED WATER QUALITY MAPS

For the reader's convenience, maps showing the contoured values for pH, TDS, Chloride, and Iron are included in this summary report in Figures V-2 through V-5.

## **SUMMARY AND RECOMMENDATIONS**

In summary, the analytical data show the ground water from this aquifer to be of good quality.

It is recommended that the several project wells assigned to the Catahoula Aquifer be re-sampled as planned, in approximately three years. In addition, several wells should be added to those currently sampled to increase the well density for this aquifer.

**Table V-1 List of Project Wells Sampled**

<b>CATAHOULA AQUIFER PROJECT WELLS</b>							
<b>PROJECT NUMBER</b>	<b>PARISH</b>	<b>PARISH WELL NO.</b>	<b>DATE SAMPLED</b>	<b>WELL OWNER</b>	<b>DEPTH (feet)</b>	<b>WELL USE</b>	<b>AQUIFER</b>
9507	CATAHOULA	CT-119	02/09/1998	CITY OF JONESVILLE	800	PUBLIC SUPPLY	CATAHOULA
9311	GRANT	G-295	02/09/1998	POLLOCK AREA WATER SYSTEM	188	PUBLIC SUPPLY	CATAHOULA
9509	GRANT	G-WELLAN	02/09/1998	PRIVATE OWNER	<50	DOMESTIC	CATAHOULA
9508	LA SALLE	LS-278	02/09/1998	ROGERS WATER SYSTEM	352	PUBLIC SUPPLY	CATAHOULA
9219	SABINE	SA-442	02/10/1998	SABINE RIVER AUTHORITY	210	PUBLIC SUPPLY	CATAHOULA
9801	VERNON	V-656	02/10/1998	EAST CENTRAL VERNON WATER SYS.	1477	PUBLIC SUPPLY	CATAHOULA

Table V-2 Summary of Water Quality Data

<b>CATAHOULA AQUIFER WATER QUALITY PARAMETERS</b>																		
<u>Field Parameters</u>																		
WELL NUMBER	TEMP °C	pH SU	COND. mmhos/cm	SAL. ppt	TSS ppm	TDS ppm	ALK. ppm	HARD. ppm	TURB. NTU	COND. umhos/cm	COLOR PCU	Cl ppm	SO <sub>4</sub> ppm	NITRITE-NITRATE (as N) ppm	TOT. P ppm	TKN ppm	TOC ppm	NH <sub>3</sub> (as N) ppm
CT-119	23.68	6.31	0.237	0.13	8.0	298.0	114.0	<5.0	<1.0	319.0	5.0	21.90	14.10	0.02	0.11	0.02	<2.00	0.10
G-295	19.67	6.67	0.316	0.15	6.0	328.0	172.0	<5.0	1.9	362.0	5.0	9.90	1.50	0.02	0.59	0.30	<2.00	0.30
G-WELLAN	20.35	6.74	0.440	0.21	8.0	176.0	176.0	5.3	1.2	502.0	5.0	48.20	<0.04	0.02	0.17	0.40	<2.00	0.40
LS-278	21.32	6.30	0.184	0.09	8.0	176.0	98.0	<5.0	<1.0	211.0	5.0	3.90	5.10	0.02	0.33	0.07	<2.00	0.10
SA-442	21.47	5.50	0.075	0.03	6.0	390.0	27.3	<5.0	<1.0	86.2	5.0	5.00	5.60	0.02	0.05	<0.02	<2.00	<0.10
SA-442*	21.47	5.58	0.075	0.03	<4.0	190.0	28.2	<5.0	<1.0	85.4	5.0	4.90	5.40	0.02	0.06	<0.02	<2.00	<0.10
V-656	29.19	7.08	0.282	0.13	<4.0	300.0	152.0	<5.0	<1.0	314.0	5.0	9.10	0.23	0.03	0.25	0.46	6.30	0.10

\* Denotes Duplicate Sample

**Table V-3 Summary of Inorganic Data**

<b>CATAHOULA AQUIFER INORGANIC (TOTAL METALS) PARAMETERS</b>															
WELL NUMBER	ARSENIC ppb	SILVER ppb	BARIUM ppb	BERYLLIUM ppb	CADMIUM ppb	CHROMIUM ppb	COPPER ppb	IRON ppb	MERCURY ppb	NICKEL ppb	ANTIMONY ppb	SELENIUM ppb	LEAD ppb	THALLIUM ppb	ZINC ppb
CT-119	<5.0	<2.0	<10.0	<2.0	2.9	<5.0	<5.0	478.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	14.3
G-295	<5.0	<2.0	<10.0	<1.0	3.1	<5.0	<5.0	35.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	20.7
G-Wellan	<5.0	<2.0	13.8	<1.0	2.9	7.9	<5.0	49.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	153.0
LS-278	<5.0	<2.0	<10.0	<1.0	3.1	<5.0	<5.0	633.0	<0.55	<5.0	<5.0	<5.0	<10.0	<5.0	34.8
SA-442	<5.0	<2.0	394.0	<1.0	<2.0	5.3	<5.0	774.0	<0.05	<5.0	6.0	<5.0	<10.0	<5.0	28.9
SA-442*	<5.0	<2.0	17.2	<1.0	<1.0	<5.0	<5.0	845.0	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	28.0
V-656	<5.0	<2.0	<10.0	<1.0	<2.0	<5.0	<5.0	74.7	<0.05	<5.0	<5.0	<5.0	<10.0	<5.0	15.5

\* Denotes Duplicate Sample.



**Table V-4 List of VOC Analytical Parameters**  
**BASELINE MONITORING PROJECT**

**VOLATILE ORGANICS BY EPA METHOD 8260**

COMPOUNDS	PQL (ppb)
DICHLOROFLUOROMETHANE	5
CHLOROMETHANE	5
VINYL CHLORIDE	5
BROMOMETHANE	5
CHLOROETHANE	5
TRICHLOROFLUOROMETHANE	5
1,1-DICHLOROETHENE	5
METHYLENE CHLORIDE	5
TRANS-1,2-DICHLOROETHENE	5
1,1-DICHLOROETHANE	5
2,2 DICHLOROPROPANE	5
CIS-1,2 DICHLOROETHENE	5
BROMOCHLOROMETHANE	5
CHLOROFORM	5
1,1,1-TRICHLOROETHANE	5
1,1 DICHLOROPROPENE	5
CARBON TETRACHLORIDE	5
BENZENE	5
1,2-DICHLOROETHANE	5
TRICHLOROETHENE	5
1,2-DICHLOROPROPANE	5
BROMODICHLOROMETHANE	5
DIBROMOMETHANE	5
CIS-1,3-DICHLOROPROPENE	5
TOLUENE	5
TRANS-1,3-DICHLOROPROPENE	5
1,1,2-TRICHLOROETHANE	5
1,3--DICHLOROPROPANE	5
TETRACHLOROETHENE	5
1,2-DIBROMOETHANE	5
DIBROMOCHLOROMETHANE	5
CHLOROBENZENE	5
ETHYLBENZENE	5
1,1,1,2-TETRACHLOROETHANE	5
P&M XYLENE	10
O-XYLENE	5
STYRENE	5
BROMOFORM	5
ISOPROPYLBENZENE	5

**Table V-4 (Cont=d)**  
**Volatile Organic (VOC) Parameters**

COMPOUNDS	PQL (ppb)
1,1,2,2-TETRACHLOROMETHANE	5
1,2,3,-TRICHLOROPROPANE	5
BROMOBENZENE	5
n-PROPYLBENZENE	5
2-CHLOROTOLUENE	5
4-CHLOROTOLUENE	5
1,3,5-TRIMETHYLBENZENE	5
TERT-BUTYLBENZENE	5
1,2,4-TRIMETHYLBENZENE	5
SEC-BUTYLBENZENE	5
P-ISOPRPLYLTOLUENE	5
1,3-DICHLOROBENZENE	5
1,4-DICHLOROBENZENE	5
n-BUTYLBENZENE	5
1,2-DIBROMO-3-CHLOROPROPANE	5
NAPHTHALENE	5
1,2,4-TRICHLOROBENZENE	5
HEXACHLOROBUTADIENE	5
1,2-DICHLOROBENZENE	5
1,2,3-TRICHLOROBENZENE	5

PQL = Practical Quantitation Limit  
 ppb = parts per billion

**Table V-5 List of Semi-volatile Analytical Parameters  
BASELINE MONITORING PROJECT**

**SEMIVOLATILE ORGANICS BY EPA METHOD 8270**

COMPOUNDS	PQL (ppb)
N-Nitrosodimethylamine	10
2-Picoline	10
Methyl methanesulfonate	10
Ethyl methanesulfonate	20
Phenol	10
Aniline	10
Bis(2-chloroethyl)ether	10
2-Chlorophenol	10
1,3-Dichlorobenzene	10
1,4-Dichlorobenzene	10
Benzyl alcohol	10
1,2-Dichlorobenzene	10
2-Methylphenol	10
Bis(2-chloroisopropyl)ether	10
4-Methylphenol	10
N-Nitroso-di-n-propylamine	10
Hexachloroethane	20
Acetophenone	10
Nitrobenzene	10
N-Nitrosopiperidine	20
Isophorone	10
2,4-Dimethylphenol	10
2-Nitrophenol	10
Benzoic acid	50
Bis(2-chloroethoxy)methane	10
2,4-Dichlorophenol	10
a,a-Dimethylphenethylamine	10
1,2,4-trichlorobenzene	10
Benzidine	50
Pyrene	10
p-Dimethylaminoazobenzene	10
Butylbenzylphthalate	10
Bis(2-ethylhexyl)phthalate	10

**Table V-5 (Cont=d)**  
Semivolatile Parameters

COMPOUNDS	PQL (ppb)
3,3'-Dichlorobenzidine	20
Benzo(a)anthracene	10
Chrysene	10
Di-n-octylphthalate	10
7,12-Dimethylbenz(a)anthracene	10
Benzo(b)fluoranthene	10
Benzo(k)fluoranthene	10
Benzo(a)pyrene	10
3-Methylcholanthrene	10
Dibenz(a,j)acridine	10
Indeno(1,2,3-cd)pyrene	10
Dibenz(a,h)anthracene	10
Benzo(g,h,i)perylene	10
Napthalene	10
4-Chloroaniline	10
2,6-Dichlorophenol	10
Hexachlorobutadiene	10
N-Nitrose-di-n-butylamine	10
4-Chloro-3-methylphenol	20
2-Methylnapthalene	10
Hexachlorocyclopentadiene	10
1,2,4,5-Tetrachlorobenzene	10
2,4,6-Trichlorophenol	10
2,4,5-Trichlorophenol	10
2-Chloronapthalene	10
1-Chloronapthalene	10
2-Nitroaniline	50
Dimethylphthalate	10
2,6-Dinitrotoluene	10
Acenaphthylene	10
3-Nitroaniline	50
4-Nitrophenol	50
2,4-Dinitrophenol	50
Acenaphthene	10

**Table V-5 (Cont=d)**  
Semivolatile Parameters

COMPOUNDS	PQL (ppb)
2,4-Dinitrotoluene	10
Pentachlorobenzene	10
Dibenzofuran	10
1-Naphthylamine	10
Diethylphthalate	10
2,3,4,6-Tetrachlorophenol	10
2-Naphthylamine	10
4-Chlorophenyl phenyl ether	10
4-Nitroaniline	50
Fluorene	10
4,6-Dinitro-2-methylphenol	50
4-Aminobiphenyl	20
1,2-Diphenylhydrazine	10
Phenacetin	20
4-Bromophenyl phenyl ether	10
Hexachlorobenzene	10
Pronamide	10
N-Nitrosodiphenylamine/Diphenylamine	10
Pentachlorophenol	50
Pentachloronitrobenzene	20
Phenathrene	10
Anthracene	10
Di-n-butylphthalate	10
Fluoranthene	10

**Table V-6 List of Pesticide and PCB Analytical Parameters  
BASELINE MONITORING PROJECT**

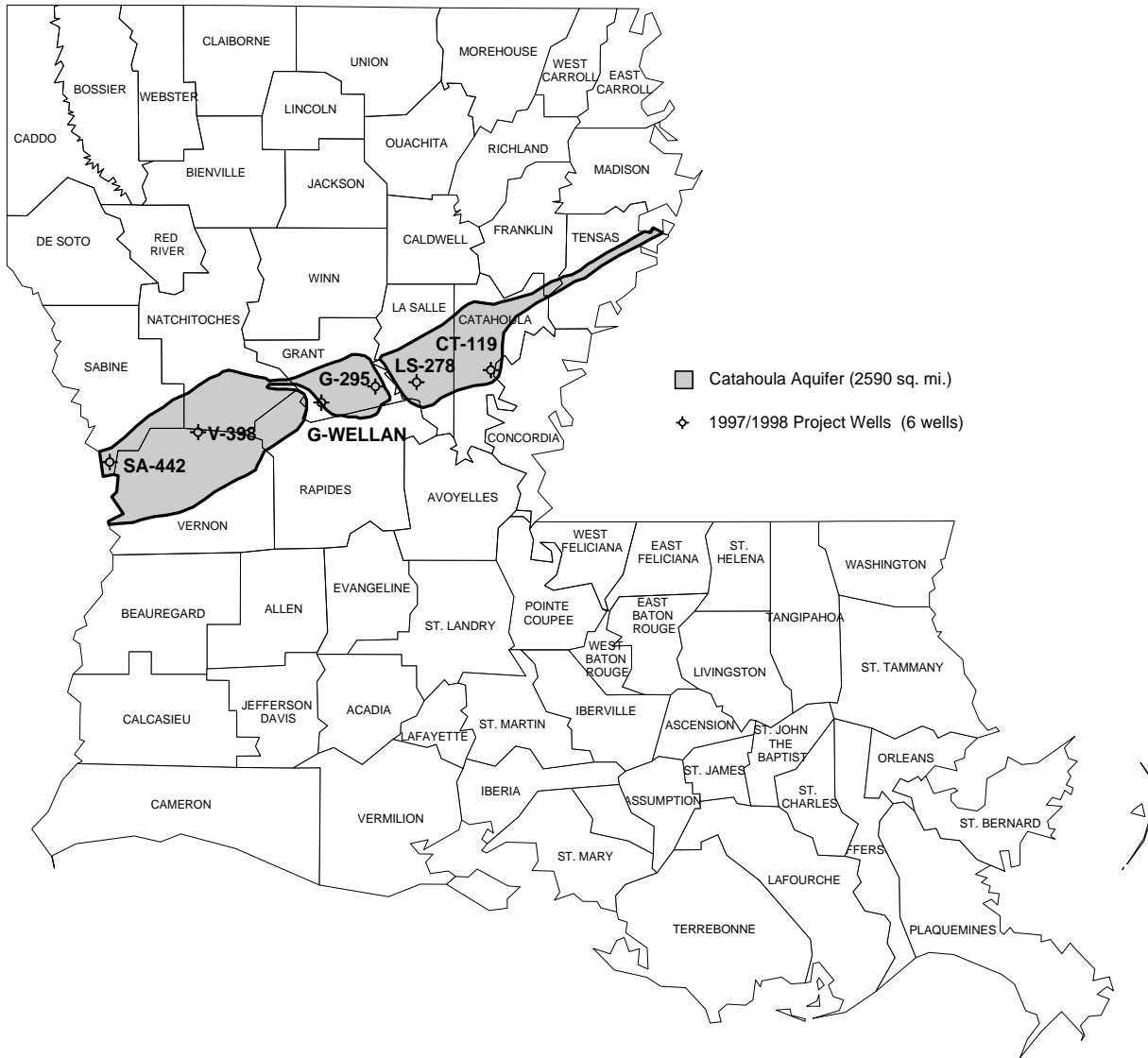
**SEMIVOLATILE ORGANICS BY EPA METHOD 8270**

COMPOUNDS	PQL (ppb)
Alpha BHC	2
Beta BHC	2
Gamma BHC	2
Delta BHC	2
Heptachlor	2
Aldrin	2
Heptachlor epoxide	2
Chlordane	2
Endosulfan I	2
4,4'-DDE	2
Dieldrin	2
4,4'DDD	2
Endrin	2
Toxaphene	75
Endosulfan II	2
Endrin Aldehyde	2
4,4'DDT	2
Endosulfan Sulfate	2
Methoxychlor	2
Endrin Ketone	2

**SEMIVOLATILE ORGANICS BY EPA METHOD 8270**

COMPOUNDS	PQL (ppb)
PCB 1221/ PCB 1232	10
PCB 1016/ PCB 1242	10
PCB 1254	10
PCB 1248	10
PCB 1260	10

# BASELINE MONITORING PROJECT WELLS OF THE CATAHOULA AQUIFER

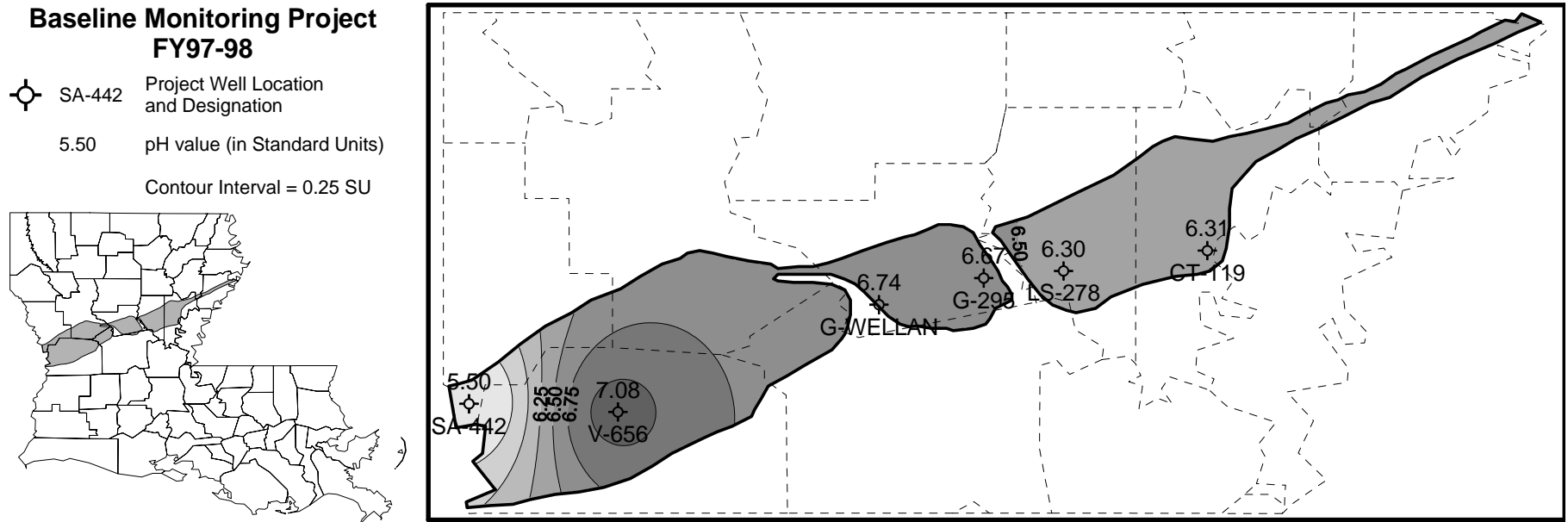


Aquifer boundary digitized from Louisiana Hydrologic Map No. 2: Areal Extent of Freshwater in Major Aquifers of Louisiana, Smoot, 1986; USGS/LDOTD Report 86-4150.

**Figure V-1 Location Plat, Catahoula Aquifer**

07/01/1998

# CATAHOULA AQUIFER - pH (SU)



**Figure V-2 Map of pH Data**



# CATAHOULA AQUIFER - TDS (ppm)

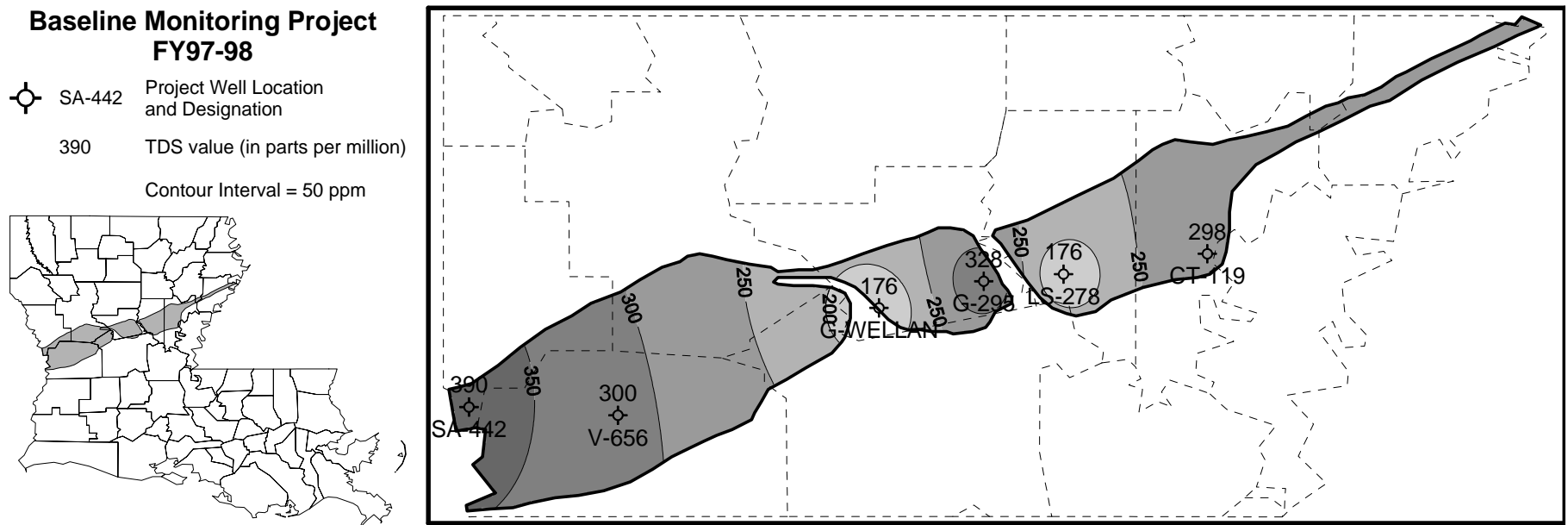


Figure V-3 Map of TDS Data

# CATAHOULA AQUIFER - CHLORIDE (ppm)

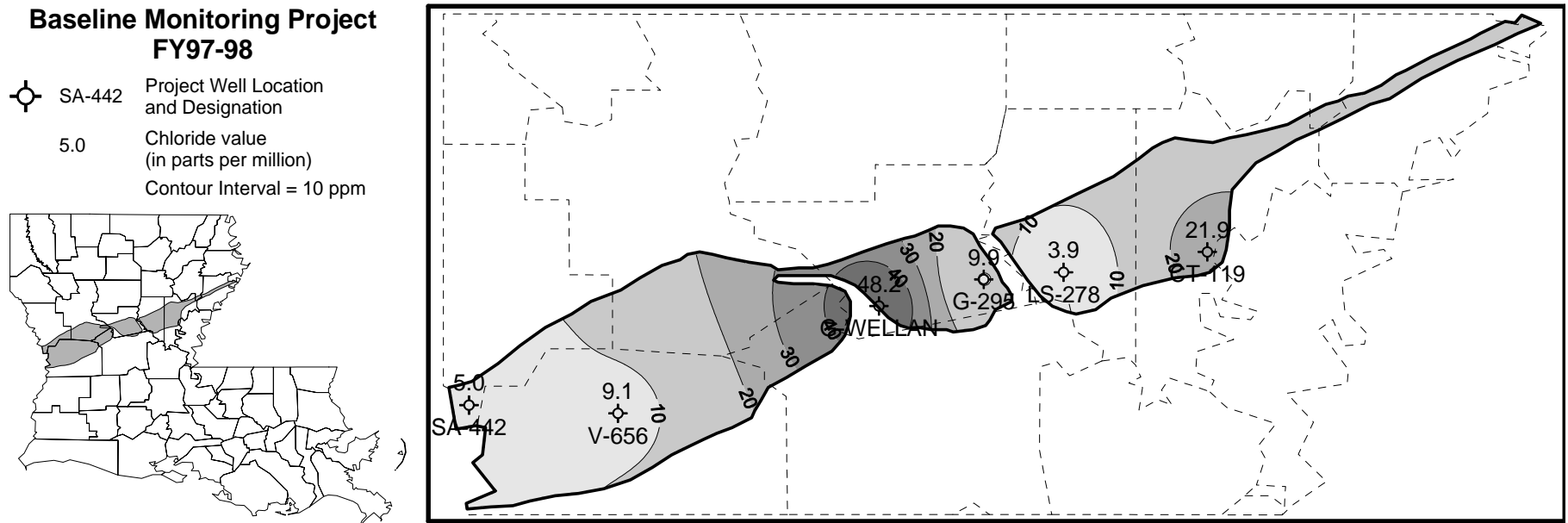


Figure V-4 Map of Chloride Data

# CATAHOULA AQUIFER - IRON (ppb)

## Baseline Monitoring Project FY97-98

- ⊕ SA-442 Project Well Location and Designation
- 774.0 Iron value (in parts per billion)
- Contour Interval = 100 ppm

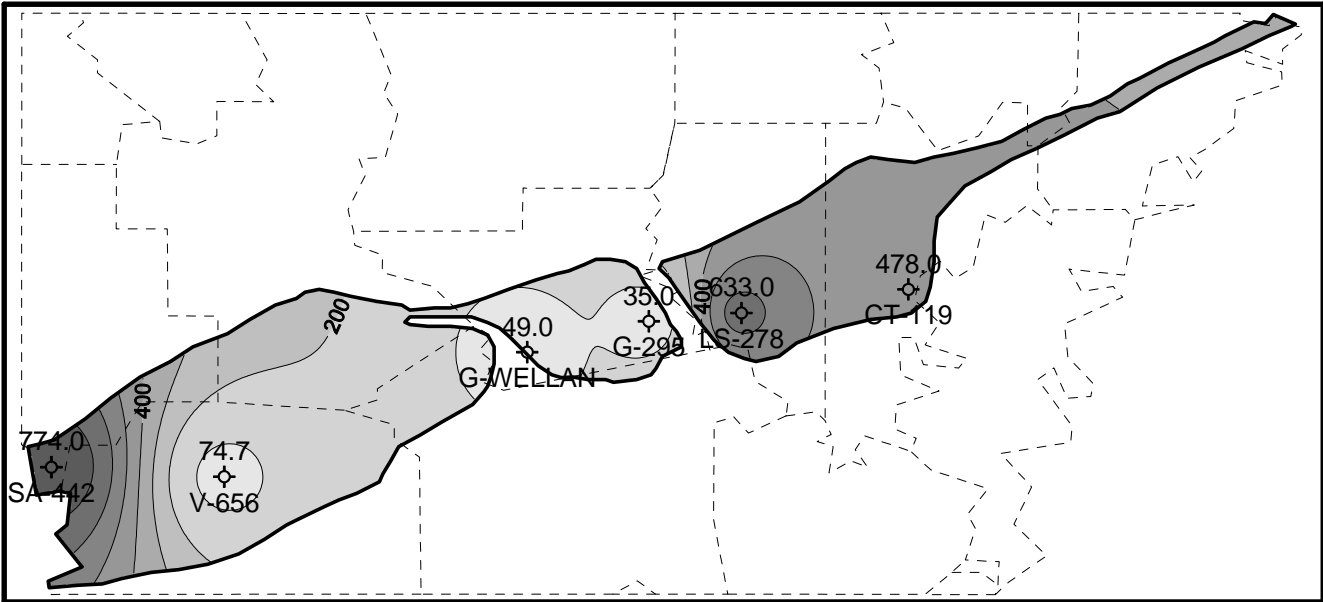
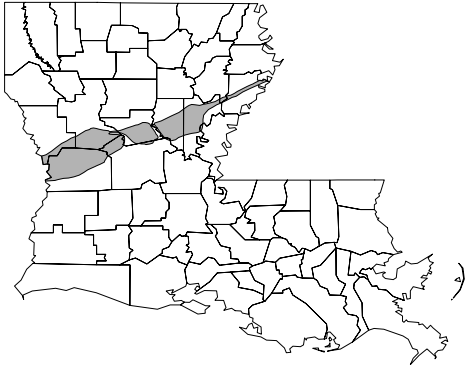


Figure V-5 Map of Iron Data