

Module 1

Sanitation Provider Enterprises' Commercial Management Series

Cadastral
Dynamic Updating



Ministerio
de Vivienda, Construcción
y Saneamiento



Bundesministerium für
wirtschaftliche Zusammenarbeit
und Entwicklung





Sanitation Provider Enterprises'
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Series
Module 01

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Preface

Most Peruvian sanitation provider utilities (EPSs) face serious financial constraints preventing them from growing their business and delivering high quality services to users. Typically, revenues do not cover their costs and even less their investments. This is accounted for by low collections the reasons for which can be grouped under two headings: a) low invoicing compared to actual consumption of drinking water and generally water use, and b) low bill collection.

To mitigate this problem, GTZ and PROAGUA have proposed a number of commercial management steps to increase EPSs collections without making significantly large investments. These measures have been validated during implementation at EPSEL S.A. Lambayeque.

We trust that these measures will be useful for analysis, adaptation and implementation by other EPSs in the country, together with the NGDO Cooperación Técnica Cultural y Ambiental Brüning (COTEC), we have developed a series of handbooks called “Commercial Management Series” where we broadly describe important aspects, procedures and impacts of proposed measures.

Lic. Michael Rosenauer

Drinking Water and Sanitation Program Director.
GTZ/PROAGUA

Introducción

The Client Cadastre is an **extremely valuable tool** EPSs count on to get information about their clients, the characteristics of their connections and their properties. This is information that can be used for service invoicing according to each user's actual status.

Besides, a cadastre allows to efficiently organizing follow-up and inspection of properties and it facilitates analysis of the make-up and behavior of users from different perspectives. This is why it is important to have a cadastre with real and updated client information to guarantee optimum use of this commercial management tool.

It is estimated that companies will recover from **2 to 5%** of total invoicing through these measures to update the cadastre. This handbook will explain the reader the steps to follow towards this aim.

This handbook "Cadastre Dynamic Updating" is part of the handbook series called Commercial Management Series and describes the **procedures** and sequence of a suggested modality to keep a client cadastre updated, by using the personnel in charge of distributing invoices as preliminary information suppliers. This handbook has been prepared based on experiences developed at EPSEL S.A. – Lambayeque.



1

Problem Technical Framework

1.1. General Issues

(1) One of the aspects which constantly worry EPSs is low collection, which in most cases is lower than the monthly company invoicing. This low collection is one of the main causes for the lack of economic liquidity in the company and hence limits optimum execution of company activities such as system operation and maintenance, network expansion, system technical standard, economic obligation compliance, among others.

(2) When low collection is analyzed, the main cause is usually supposed to be high user default and low payment culture. However, this analysis does not sufficiently highlight internal EPS factors. One of these factors is that invoicing to users is not updated according to water use or real consumption in user properties.

(3) This outdated situation is not detected by EPSs, because there is no constant in systematic updating of user cadastre conditions.

Base cadastre

(4) An EPS usually organizes its client general basic cadastre by means of a census including property location and characteristics, as well as sanitation services in each one of them. The result is cadastre plans and IT databases containing cadastre information.

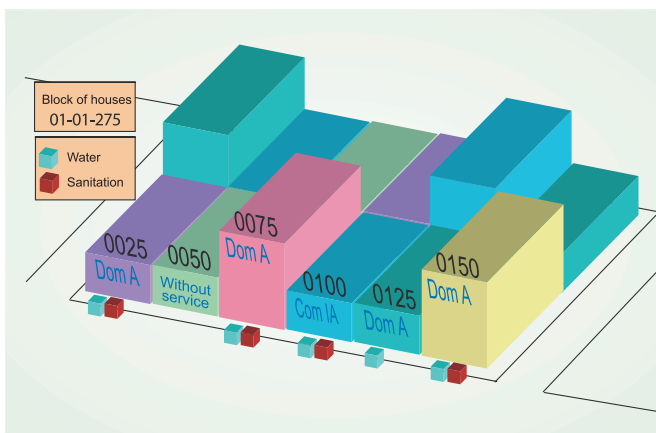


Figure 1: Example of properties in the cadastre census including information on services and corresponding units and tariffs.

When the Basic Cadastre Census is made, blocks of houses and properties are coded. Property data and services are registered. Tariff types, use units, service types, etc. are assigned.

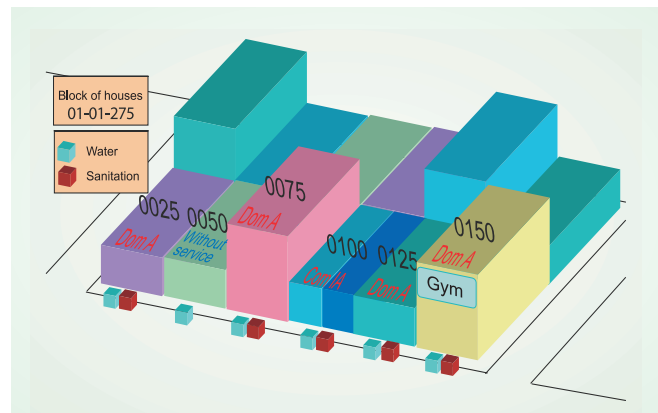
Regular cadastre updating

(5) Then, regular cadastre updating is scheduled. This is done every five years in average. This is a long period to get all the cadastre modifications. This updating requires visits to client properties to record changes made in them since the last updating.

(6) During the period between each cadastre updating, there is no mechanism to record modifications. These delays in cadastre updating prevent companies from invoicing 2 to 5% of total billing.



Figure 2: Commercial use property invoiced as domestic use property.



MODIFICATION
EXAMPLES

- LOT 0050 an illegal connection has been installed
- LOT 0100 has been subdivided
- LOT 0125 its sewerage connection has been installed
- LOT 0150 the property use has changed

Figure 3: the same properties that were the example of Figure 1, two years after the census

Compare figures 2 and 3 and identify differences

(7) Cadastre dynamic updating hence has considerable potential to increase invoicing in most companies.

1.2. How is invoicing calculated at EPSs?

Calculation criteria

(8) Procedures and criteria to calculate invoicing are regulated by **SUNASS** through Superintendence Resolution N° 1179-99-SUNASS dated December 22nd, 1999.

(9) When a property has a service supplied by an EPS, the latter issues a monthly bill for provided services. To determine the monthly amount collected from a user, the following considerations are taken into account:

(10) **The kind of service** provided by the EPS. Services provided by the EPS are: drinking water supply and sewerage disposal and treatment services. Not every property has both services and hence the amount charged to users depends on any active service.

(11) In Peru, the drinking water service amount is calculated first according to the volume of water consumed and the assigned tariff. The sewerage service is fixed according to that amount (a percentage of the amount for water service) if the client already has it. Some eventual side services are added to the addition of these two amounts (cut-off, restoration, etc.), interests, debts and legal taxes.

(12) EPS assigns users a **tariff category** according to a tariff chart approved by SUNASS. This chart establishes differentiated tariffs according to:

- The **use** given to the property (domestic, commercial, industrial, state, social).
- Drinking water household connection **diameter**.
- Water consumption ranges. There are consumption **ranges** with differentiated unit prices for each type of tariff.

(13) Measured or assigned drinking water consumption. Some percentage of the properties has a **water meter** which registers real water consumption at each individual property. The EPS measures to determine monthly consumptions based upon which the water service is invoiced.

(14) In properties without an installed meter, the EPS assigns some consumption according to their tariff category and number of use units the property has. **Assigned consumption** according to each tariff category is also approved by SUNASS together with the tariff structure chart.

CALCULATION EXAMPLE:

- A property has two floors: the ground floor is rented to an Internet public booth establishment. The first floor is inhabited by the property owners. Both floors have differentiated access to the street.
- Both floors have water and sewerage installations that are served from a common water supply entry and its common sewerage exit.
- There is no water meter. The drinking water connection measures ½ inch.



CONSIDERATIONS

- According to **SUNASS** Regulations, this property has two use units, since they are two differentiated spaces with different uses. This is why it is necessary to calculate consumption for each use unit.
- Use Unit 1 (First Level). Due to its commercial use, tariff **COM I.A.** will be assigned. Since there is no meter, assigned consumption will be 35 m³ per month with the fixed tariff of S/. 1.0213 / m³.
- Use Unit 2 (Second Level). It has a residential use. This is why the **DOM A.** tariff is assigned. Consumption assigned due to lack of a meter is 20 m³ at a cost of S/. 0.5974 / m³.

*COM I.A.
Commercial tariff
=S/. 35.76 per month*

*DOM A.
Domestic tariff
=S/. 11.95 per month*



Amount for Drinking Water Services

Use Unit 1: 35 m³ x S/. 1.0213 / m³ = S/. 35.7455
Use Unit 2: 20 m³ x S/. 0.5974 / m³ = S/. 11.9480
Addition: Use Unit 1 + Use Unit 2 = S/. 47.69



Amount for Sewerage Service (45% of water)

47.6935 x 0.45 = 21.46



Amount for Drinking Water and Sewerage Services

S/. 69.15)
IGV (19%) = 0.19 x 69.15 = S/. 13.14



TOTAL INVOICING AMOUNT = S/. 82.29

1.3. What information is recorded in the client cadastre of an EPS?

(15) An EPS scope is constituted by thousands of properties in one or several cities in a determined territorial extension. Each one of these properties has individual physical characteristics, and is inhabited by a variable number of persons and families who carry out different activities in the property.

(16) Among other data, the client cadastre has basic information to correctly bill users as can be observed in the following chart:

Cadastre Code

The screenshot shows a software window titled 'SISTEMA CONTROLADO' with a sub-window 'CONTROL DE CLIENTES - DATOS BASICOS'. The form contains the following fields and sections:

- Personal Data:**
 - Nombre (Name): [Field]
 - Apellido (Surname): [Field]
 - Fecha de Nacimiento (Date of Birth): [Field]
 - Sexo (Sex): [Field]
 - Estado Civil (Marital Status): [Field]
 - Ocupación (Occupation): [Field]
- Property Data:**
 - Dirección (Address): [Field]
 - Código Postal (Postal Code): [Field]
 - Tipo de Propiedad (Type of Property): [Field]
 - Superficie Construida (Built Area): [Field]
 - Superficie Total (Total Area): [Field]
 - Valor de la Propiedad (Property Value): [Field]
- Service Data:**
 - Tipo de Servicio (Type of Service): [Field]
 - Estado del Servicio (Service Status): [Field]
 - Fecha de Instalación (Installation Date): [Field]
 - Medidor (Meter): [Field]
 - Marca del Medidor (Meter Brand): [Field]
 - Número del Medidor (Meter Number): [Field]
 - Fecha de Lectura (Reading Date): [Field]
 - Valor de la Lectura (Reading Value): [Field]
- Table:**

Nombre	Apellido	Fecha de Nacimiento	Sexo	Estado Civil	Ocupación	Dirección	Código Postal	Tipo de Propiedad	Superficie Construida	Superficie Total	Valor de la Propiedad	Tipo de Servicio	Estado del Servicio	Fecha de Instalación	Medidor	Marca del Medidor	Número del Medidor	Fecha de Lectura	Valor de la Lectura
[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]	[Field]

Red circles highlight the following fields: 'Dirección', 'Código Postal', 'Tipo de Propiedad', 'Superficie Construida', 'Superficie Total', 'Valor de la Propiedad', 'Tipo de Servicio', 'Estado del Servicio', 'Fecha de Instalación', 'Medidor', 'Marca del Medidor', 'Número del Medidor', 'Fecha de Lectura', and 'Valor de la Lectura'.

Figure 4. Client basic information cadastre card

(17) **Type of services in the property.** Drinking water service, sewerage service or both. It also includes main connection characteristics: (a) location of inspection boxes, (b) location, type and diameter of pipes, (c) connection installation dates.

(18) **Connection status.** Active, cut-off or suspended.

(19) **Meter data.** Meter existence, status, type, brand, series number, code, installation date.

(20) **Number of property use unit.** This piece of information is important since water consumption assigned to the property is proportional to the number of use units (for properties with no meter). More than one use unit is applied for the case of multi-family properties (with vertical or horizontal subdivisions).

(21) **Use or activity developed in the property.** The tariff category is assigned according to this, following the company's tariff structure chart.

1.4. Why does a cadastre become outdated?

(22) The cadastre prepared by the EPS is a “snapshot” of the service and property characteristics which is valid only when it is taken and not for the following five years which the period approximately lasts until the next cadastre updating. Many **properties change** one or more characteristics that are relevant to calculate service invoicing during this term.



(23) **For example**, there are users who are invoiced just with domestic tariffs when they are actually using water for merely commercial or industrial users. Likewise, there are properties with subdivisions or rentals for parts of the house and are only invoiced as a single use unit.



A property with commercial use pays an average almost thrice as much as a domestic use house, which is a loss for the company.

(24) Although it is true that the EPS detects some of these occurrences, they are not always considered. This is why **most** users still receive invoicing according to the last cadastre or regular cadastre updating.

(25) Updating in all those years is not done due to **limited** human resources and logistic **availability** for these tasks. Besides, unbilled consumption has not been estimated. EPS Client Cadastre offices usually have field personnel (verifiers, cadastre inspectors) devoted to routine tasks such as responding to requests, complaints or eventually inspect some detected premises.

1.5. What are the main changes?

(26) Outdating in the use of services along time usually relates to:

A Service Type Change:

(27) This occurs when a property is recorded in the cadastre and commercial information as having **only one of the two** services, either the drinking water service or the sewerage service, while it actually has both. This happens for example in areas where there were initially only water networks and this is why the user only had one drinking water connection.

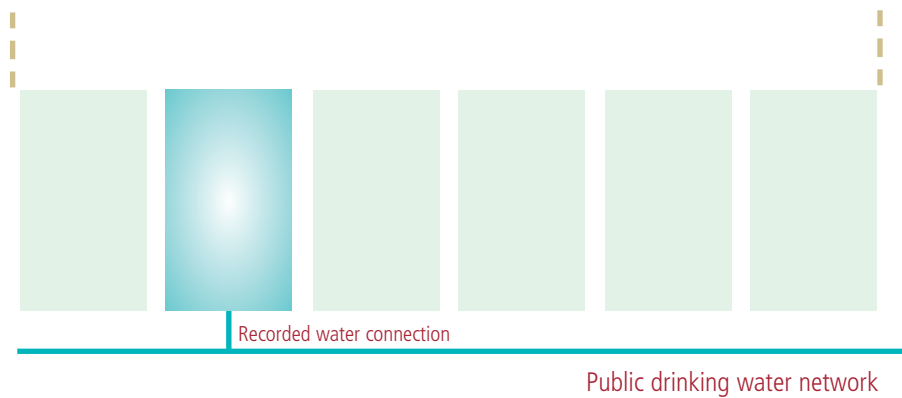


Figure 5: Service type changes

(28) Then, sometime later, sewerage networks are installed, as the user connects to the network by hiring an informal plumber without informing the EPS. The situation may go undetected for a long time. Consequently, one of the services is not billed.

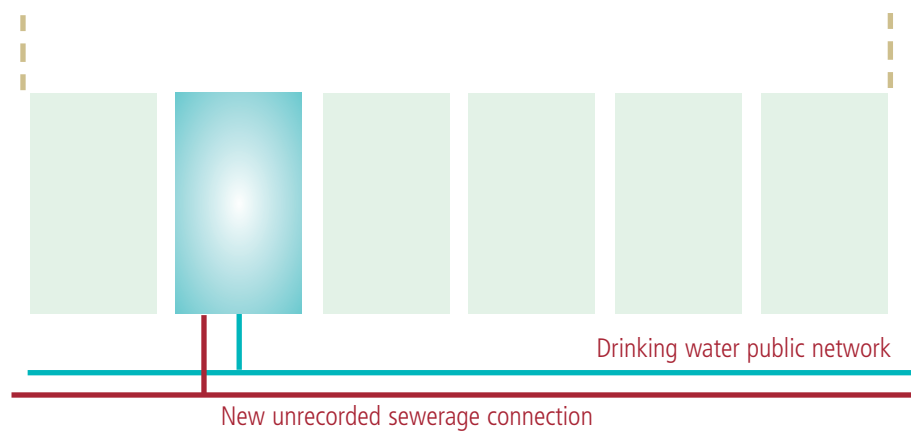


Figure 6: Changes in the type of service, not recorded sewerage connection

B Tariff Type Change

(29) This occurs when a property is included in the cadastre and is billed at a lower rate than the one which truly corresponds according to the currently developed activity. For example: a property which develops an activity as restaurant or hotel is only billed with a domestic tariff, although a commercial tariff would correspond.



Figure 7: Public Local. Internet booth service

C Use Unit Change

(30) It affects an EPS user property which is subdivided or rents one or several parts of the house to other families. In many cases this kind of property receives invoicing as a single family household (one use unit) in spite of the fact that it should be assigned several use units.

(31) There are frequent subdivisions or horizontal independent separations of an individual property which are physically totally independent and which have different families living in each subdivision. However, a single water or sewerage household connection is still used in all these subdivisions, as it corresponded to the original property.

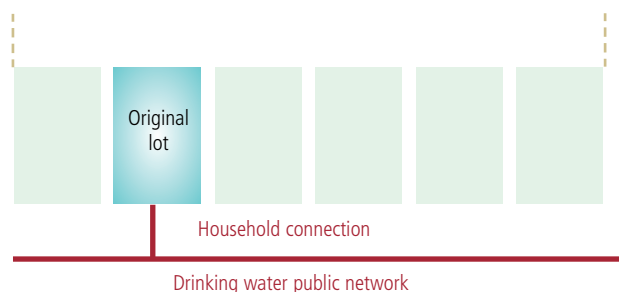


Figure 8. Original drinking water connection.

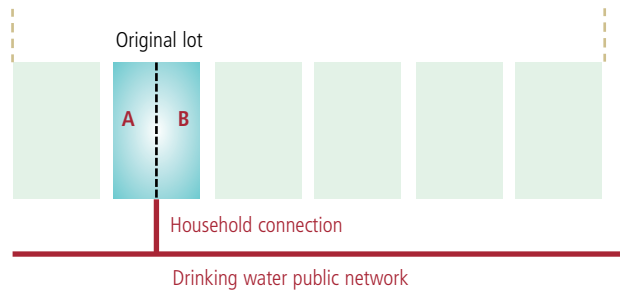


Figure 9. The original lot was subdivided in two lots, A and B, but they still have the original connection which now serves both lots.

(32) Another common case is that in which a single water and sewerage connection serves a property that has several floors with one or more departments per floor, where a **different family** lives in each department.

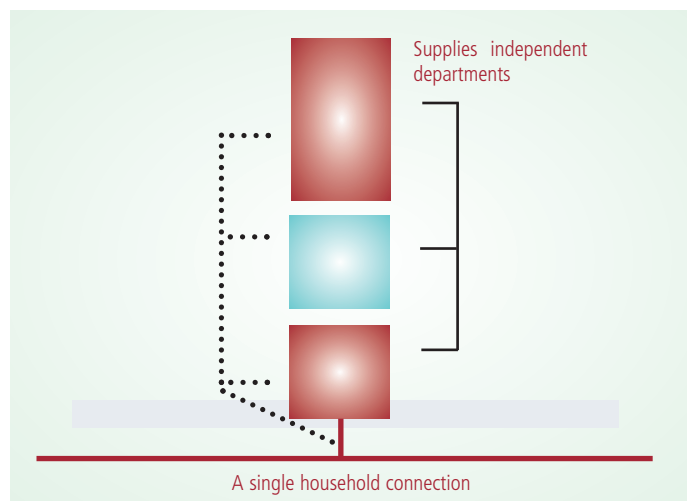


Figure 10. Original drinking water connection supplying independent apartments.

(33) We have also found properties with water and/or sewerage connection providing service to another lot which is **not** a company **user** through interior sanitary connections made by private plumbers. This modality is called "right of way."

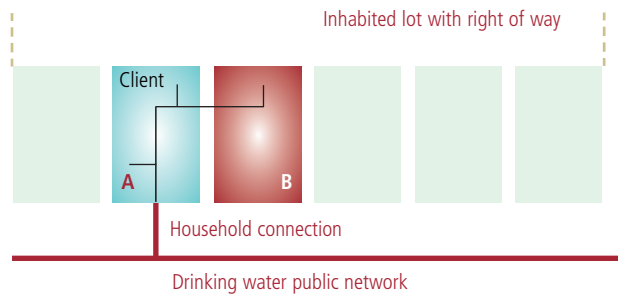


Figure 11. A company client (Lot "A") supplies service to lot "B" through interior connection.

D Clandestine:

(34) A clandestine connection is that which, according to cadastre, **does not have** water and sewerage services. That is, these services are installed and used without EPS knowledge. A clandestine connection can be of drinking water, sewerage or both services.

(35) These cases often occur in urban developments that are becoming consolidated where **new properties** are built and inhabited on a monthly basis and they connect to existing networks although the EPS does not know it.



Figure 12. A clandestine sewerage connection found while being installed.

E Arbitrary Restorations:

(36) Arbitrary users are those clients who following default got a drinking water or sewerage service suspension and then arbitrarily restored services themselves without the company knowing it. Thus, they use unbilled services and the company incurs in losses.

1.6. Why does the cadastre become outdated and damage the EPS?

Rhetorical Hypothesis

(37) When there are still changes in the property characteristics, they may lead both to reduction or increase of invoicing for that property. Then, in the EPS client universe one should think these changes sometimes favor and other times go against invoicing and that they should be compensated even if the company does not detect them, therefore having little importance for global invoicing.

(38) However, it has been confirmed that when clients observe there is an excessive invoiced amount because the tariff or consumption does not correspond to their current situation they try to immediately correct it. The user will complain and ask the company to make any relevant arrangements to get their invoice reduced, either because there was a change in property characteristic or because an EPS administrative error was identified.



Figure 13. User requesting a tariff change.

(39) In **very few** cases they request the company a change leading to an invoicing increase. This is why cadastres tend to become outdated, affecting EPS invoicing.

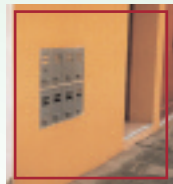


Figure 14. This property was initially owned by a single family and several independent apartments are being built on top of it. As shown by the group of water meters. The owner had not reported this and was billed as a single use unit.



RESUMEN



PREGUNTAS



TAREAS



RECOMENDACIONES

- EPS companies include clients in cadastres at different points in time.
- Cadastre outdating prevents EPS from invoicing between 2% and 5% of its total invoicing.
- The commercial tariff is thrice the domestic one. If we give users the advantage of our ignorance, they will seek to keep a low tariff or a free service.
- When was the last cadastre made in your EPS?
- What is the current tariff structure in your EPS?
- What is the number of clients with assigned consumption tariffs and how many have micrometers?
- Check the EPSEL S.A. tariff chart in Annex I and compare!
- Estimate how many visits, how many forms and how much money the user spends to change his/her cadastre status and corresponding invoicing.
- Find out how many cadastre and invoicing changes have been made in your EPS in the last three months.
- It is suggested to hold meetings with the field personnel to know what kind of cadastre changes they find in the field, how often and why they do not report them.



Cadastre Dynamic Updating Process

2

2.1. Actors of the proposed solution

(40) Based upon our experience with EPSEL S.A. in Lambayeque, a procedure has been developed which is called Cadastre Dynamic Updating. It proposes the use of human resources existing in the company to previously identify clients which might have a different cadastre status than the one shown in the invoice they are distributing. So, invoice distributors are proposed as the ones to perform this job.

(41) This cadastre updating methodology aims at permanently detecting service use changes, proper economic activity shifts, new service connections, etc.

A Invoice Distributors

Why Invoice Distributors?

(42) Invoice Distributors: These are the company employees who are in charge of the monthly distribution of a number of invoices corresponding to clients in a certain sector served by the company.

(43) Generally, distributors know their route because they usually go through it for a long time, which allows them to **detect** any change in the properties.



Figure 15. The Invoice Distributor collaborates to detect any change in the property.

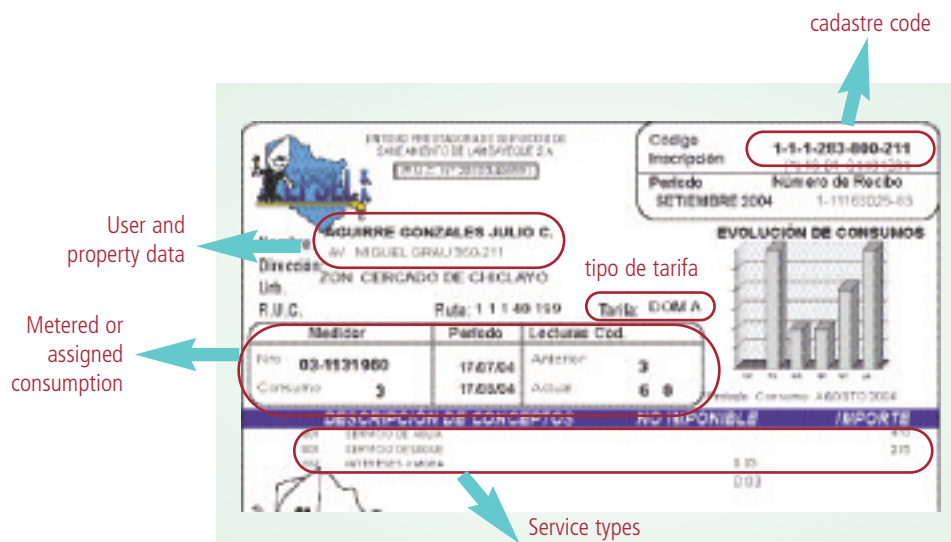


Figure 16. Data on the monthly invoice

Invoices

(44) The invoice contains relevant cadastre information to calculate invoicing to the property which may be **compared** with what the distributor sees is the actual condition in the field.

(45) Invoice Distributors may check if the corresponding change was made in the following month. If not, they can **repeat** their information so it is taken into account by the cadastre inspector.

(46) To make sure invoice distributors record more relevant information, an economic incentive will be given them for every piece of information they provide, which is later validated. This will also help to truly verify if the changes have been made and so they are interested in repeating their report if need there be.

An economic incentive is justified and is essential to achieve distributor decided participation.

(47) However, the information supplied by invoice distributors is preliminary and will be evaluated by the cadastre inspector who will decide if the cadastre status is to be **changed or not**.

B Cadastre Inspectors

(48) Cadastre Inspectors are company employees charged with performing inspection of the property and certifying the necessary specific conditions to **make decisions** concerning cadastre data (consumption assignment, tariff type, among others), as required by the company following a claim by the user. This inspector notifies the user about the decision made.



(49) Cadastre Inspectors perform tasks that aim at solving user complaints or requests which have administrative terms favorable for users. It is recommended to assign a cadastre inspector, whose **priority** is to dynamically update the cadastre, promoting cadastre changes and their effect in invoicing. These tasks are commissioned by the EPS Cadastre Office.

Figure 17. The Cadastre Inspector performs tasks commissioned by the Cadastre Office

C Office Evaluators

(50) Office Evaluators are responsible for receiving cards filled in by invoice distributors and for entering this data in the system. It should be someone skilled in software (spread sheets or databases) and who has access to the EPS commercial IT system to make inquiries.



Figure 18. The Office Evaluator feeds the system with data.

(51) They need these tools because they will have to refine received data, **crossing it** with that recorded in the company's cadastre database and to prepare verification lists stemming from it that will be given to Cadastre Inspectors.

(52) When cadastre inspectors finish their tasks, they pass their results to office evaluators. They record them in their follow-up system to thus be able to program timely changes which will be communicated to system operators following Cadastre Area Head authorization.

(53) Likewise, Office Evaluators will follow up any complaints submitted by users and will record the outcomes. Finally, they will calculate the increased amount of changes, the amount of bonuses for information suppliers, efficiency indicators for all system stages, consolidated reports, etc.

D The Cadastre Area Head:

(54) The Cadastre Area Head is responsible for conducting the whole process, including result analysis and valuation. He/she will distribute tasks among the personnel and information suppliers to ensure understanding of a process. He/she will also make reports, request necessary resources and personnel, request bonuses for information suppliers and provide any information related to other company areas.



Figure 19. The Cadastre Area Head is responsible for the entire process.

E Other Agents

(55) This handbook recommends that Invoice Distributors be information suppliers as already mentioned. However, there are other workers at the EPS who can also be used for the **same end**, as for example those who read the meters, because identifying delays in cadastre updating is a usual part of their activities.

2.2. Process Description

(56) We have divided the Cadastre Dynamic Process into two **sub-processes**:

Identification of clients that may undergo cadastre information changes.

- Pre-identification (information by Invoice Distributors)
- Contrasting and refining of information at the office (client cadastre offices).

Cadastre status change to clients

- Cadastre inspection of properties
- Increase of changes in the cadastre (when it so corresponds).

The following scheme shows the process sequence:

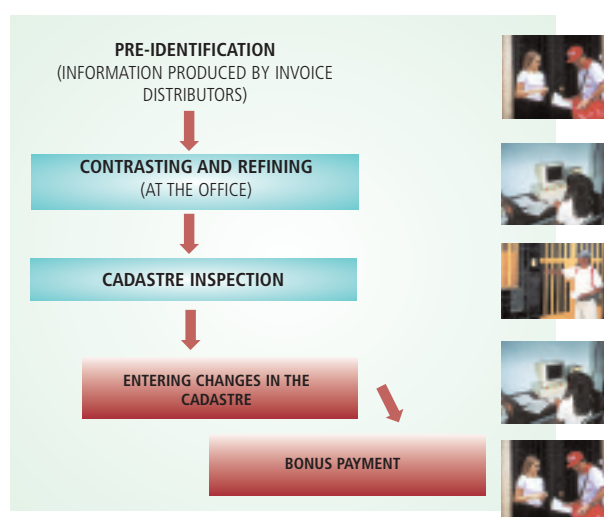


Figure 20. Cadastre Dynamic Updating Process

2.3. Selection of Implementation Sectors or Zones

A pilot test

(57) The most advisable and convenient goal is to carry out the cadastre dynamic updating job every month in every EPS sector. So the job is done in an agile and efficient way, cadastre offices must establish the necessary procedures and have the right capacities to operate.

Old cadastre or company dynamism

(58) However, a **pilot test** of this strategy is performed to be able to verify yield, adjust procedures and information flux modality. Besides, it allows justifying the optimum incentive amount to be paid to information suppliers at pre-identification level and also assignment of Cadastre Inspectors for these works. The pilot should preferably be made in some sectors with very old cadastre updating which are commercially or entrepreneurially dynamic, which will permit to test all the process elements. Both characteristics mean that a high degree of outdated will be found and will imply multiple possible cadastre change cases.

2.4. Study Materials and Training Preparation

A Information Gathering Form

(59) The first task is to design a form to gather information (Chart N°1). This form should preferably be simple and should have spaces for general information (distributor name, district, and information gathering date) as spaces for specific information detected when distributing bill invoices (user cadastre code, address, detected fact, observation).

(60) This information gathering form must be attached to a guide to instruct invoice distributors in filling in these forms (Annex N°3). This fill-in guide must be clearly and simply drafted so information suppliers understand it easily.

PROAGUA

FORMATO DE INFORMACIÓN CATASTRAL
Plan 10000 conexiones

NOMBRE DEL REPARTIDOR: FECHA: DISTRITO:

CODIGO				DIRECCION	cambio de tipo de servicio	cambio de tarifa	cambio de unidades de uso	clandestino	otros (indicar en observación)	OBSERVACIONES
sector	Mz	Lotes	Sub Lotes							

Figure 21. Cadastre Information Form

B Training Invoice Distributors

(61) An important and complementary step is training invoice distributors in the field information gathering procedure. This training must be led by the EPS Client **Cadastre Office**. It refers to pertinent aspects and criteria for tariff changes, use units or service types.

(62) This is important so as to standardize criteria concerning corresponding tariff categories and identification of households with more than one use unit to be assigned.

(63) This training aims at exchanging experiences on indexes or ways to presume existence of an illegal connection. Besides, criteria to be established need to conform to Superintendence Resolution 1179-99-SUNASS "Guideline on Amount to Bill and Drinking Water and Sewerage Service Proof of Payment" (See Guidelines in Annex N°9)





SUMMARY



QUESTIONS



TASKS



RECOMMENDATIONS

- EPSs may permanently update their client cadastre by using the information gathered by the field personnel, specifically Invoice Distributors.
- Cadastre dynamic updating is first implemented in a pilot zone.

- What procedures does your EPS currently use to detect cadastre changes?
- What personnel are in charge of this process?

- Prepare a process organization scheme with the current EPS personnel.
- Select a pilot sector in your locality and establish selection criteria.

- Invoice Distributors will be permanently assigned to a work area to guarantee process sufficiency. Besides, you should analyze if there is another group that is capable of getting field information as meter readers, water cutters, etc.
- The bonus should correspond to the economic outcome for the EPS.
- A very entrepreneurially dynamic zone and/or an old cadastre zone must be selected for the pilot.



3

Identification of Clients who Might Change Cadastre Status

(64) This stage comprises several steps from gathering information in the field by Invoice Distributors generating lists to be handed to the Cadastre Inspector for field verification.

3.1. Pre-Identification by Invoice Distributors

A Pre-Identification Process

(65) As mentioned before, EPS Invoice Distributors are the right people to identify new occurrences from one month to the other, because they usually work in the same sector of the city. Each distributor will take several forms to gather information on which he/she will write down any necessary data and observations.

FORMATO DE INFORMACION CATASTRAL									
PLAN 19915 CONDOMINIOS									
PROAGUA S.A. E.T.E.									
Nombre del receptor: <u>Se guardo Juan Diego</u> Fecha: <u>15/08/2017</u> Cuentas: <u>Cuentas de agua</u>									
U.T.	M.	L.A.	Parcela	Propiedad	Características	Características	Características	Características	Características
7	310	415	0	V. de la Vega 318	X				Electricidad
7	333	350	12	Leoncio Prado 405	X				Cables de Internet y Gas
7	333	855	0	R. Pedro Ruiz 550		X			Se eleva el 2° y 3° Pisos
7	369	415	0	Bolívar 797		X			Casa Sotomayor, 2a. planta de la misma casa. Tiene agua, electricidad
7	369	—	—	Bolívar 797			X		
7	369	620	—	R. Bolívar 557	X				Piso 110°
3	497	350	0	Dr. San Victoria 170	X				Tiene agua y electricidad y solo se le fact. Agua
3	289	125	0	San Martín 210	X				Filipino en construcción (5 niveles, tiene agua)
7	361	950	0	9 de Octubre 390	X				Chickarra 2° piso
7	333	1000	0	Arduo González 1185	X				Gran Sipa Hotel

Figure 22. Information card filled-in by an Invoice Distributor

(66) At this stage, Invoice Distributors will not make inspections or additional confirmations in the property. They should be based in **external** and visible **observations** or on information directly obtained from neighbors. Direct contact between users and Invoice Distributors will make the distributors work too slow and costly and also give way to users offering them incentives so the case is not reported by the distributors.

(67) The fact that the distributor does not make additional confirmations means that **not all** the written down information will be totally valid. Only when the cadastre inspection is made, will it be determined if any characteristic should be made to the property.

Information collection

(68) The Cadastre Inspector validates the information provided by the Invoice Distributor. Their efficiency should be improved through monthly coordination meetings between these two groups of employees.

Coordination meetings

(69) These coordination spaces should be used to **exchange experiences**: describe typical spaces, criteria for assigning tariff categories, use units, suggestions to determine suspicion on illegal clandestine installations, etc. to then get greater uniformity on pre-identification criteria.



Figure 23. Organized meetings

B Most Frequent Errors

(70) During the implementation of the Cadastre Dynamic Updating of the pilot stage in Chiclayo, some errors in the data pre-identification work were detected, which greatly decreased after the second month thanks to more precision in instructions concerning these deficiencies. The most frequent errors are:

- Not very explicit observations which do not precisely show the reason for which the property was noted. This makes cadastre inspection work difficult.
- Clandestine user cases with few references concerning location, without specifying the code corresponding to sector and block of houses. This information is easy to deduct according to neighbor codes. In some cases, the notes were not understandable.
- Clandestine user cases without detailed information on the type and location of services that had been found as evidently active.
- Clients with micrometers that had been pre-identified for the increase of use units, something which does not agree with SUNASS regulations.
- Large houses and/or having several floors which had been pre-identified for the increase of use units without subdivision evidences and which in the cadastre inspection were shown to be single family houses. A single use unit corresponds to this kind of property.

C Incentives to Information Suppliers

(71) Invoice Distributors will not usually make an effort if the **additional task** is not awarded in money. The idea is to incentivize any personnel member who may pre-identify cases to get all the necessary information that may result in larger collection for the EPS.

(72) If the information is valid, the EPS will give a bonus to the employee who got it. This acknowledgement must be directly related to the value of the information for the EPS.

(73) Based upon the experience of EPSEL S.A. from July to September 2004, the following incentive scale **is proposed**:

	INFORMATION CHART	BONUS (S/.)
A	Change of Service Type	1.00
B	Tariff Change	3.00
C	Use Unit Change	2.00
D	Clandestine Connection	2.00

(74) Incentive scale and payment modality will be appropriate to local conditions.

3.2. Information Verification and Refining

(75) With the pre-identification cadastre information, the office analysis work will be done to refine inconsistent information that unnecessarily complicates field work. To do so, all the commercial information of pre-identified users is extracted from the database to then collate it with the information gathered in the field by the distributor.

I.T. Application (76) At this stage, a small **I.T. application** should be designed that allows extracting necessary information by only answering identified users' codes. The minimum information required for each user from the database is:

- Client name
- Exact address
- Type of services (water, sewerage, both).
- Service status (active, cut-off, suspended)
- Type of tariff assigned
- Number of assigned use units
- Types of assigned tariff






Refining of Inconsistencies

(77) **When crossing** this data with field information, the following should be refined, among others:

- Properties that have been pre-identified for use unit change, but which already have corresponding use units assigned or have an active meter.
- Properties that are pre-identified for tariff change but the database shows that the tariff change has already been made.
- Pre-identified properties for service type change (from one to both services), but the database shows that both services are already being billed
- Properties pre-identified as clandestine but it is really users whose water was cut off or service suspended who have reconnected arbitrarily. Although this piece of information does not affect cadastre information, it is useful to be derived to the cut area so that appropriate action is taken.
- Properties pre-identified as clandestine but which are already regularized -this data should be crossed with the files being processed to prevent double notifications to users- or are already entered in the database.
- Mistaken codes and addresses which are not in the database and therefore will be hard to locate.

(78) As per refining at the office, reports are prepared for field verification charged to Cadastre Inspectors. Based upon verification results, the inspector will decide if the client cadastre information change will be made or not.

(79) It is convenient to write down the causes for having amended data so as to inform invoice verifiers about them at a later stage, which can help them correct their mistakes in the following reports. An example of verification list for cadastre inspection (EPSEL S.A. August 2004) is filed in **Annex 5** "Process Follow-up Form Specimen"

	<ul style="list-style-type: none"> ■ The information collected by distributors is not necessarily correct. ■ The pre-identification work is only through external observation. When data is crossed with the cadastre, cases to be resolved are filtered, eventually correcting interpretation.
<p>SUMMARY</p> 	<ul style="list-style-type: none"> ■ How many Invoice Distributors work at the EPS? ■ What kind of errors has been found in this pilot stage during the pre-identification stage?
<p>QUESTIONS</p> 	<ul style="list-style-type: none"> ■ Calculate the increase experienced in invoicing with cadastre changes made during the pilot. ■ Organize a workshop with distributors and supervision personnel to exchange experiences obtained in the process.
<p>TASKS</p> 	<ul style="list-style-type: none"> ■ Exchange of experiences in organized meetings helps improve the quality of observation.
<p>RECOMMENDATIONS</p> 	



4

Change of Client Status in the Cadastral

4.1. Field Cadastral Inspection

(80) This phase consists in visiting the properties that were reported after refining. Visits will be made by Cadastral Inspectors who will be in charge of analyzing the property's situation according to supplied information.

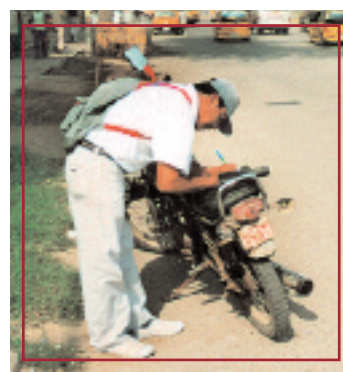
(81) If during their visit Cadastral Inspectors deem that the change in any cadastral status is justified, they will notify users about the change that will affect future invoicing. These cadastral conditions are for example: tariff type, number of assigned use units, types of service, and regularization of a clandestine connection or an arbitrary restoration of same.



Figure 24. Inspectors in the field

(82) Cadastre Inspectors need to have broad experience on EPSs and should have a good knowledge of assignment criteria for different cadastre characteristics to then prevent later complaints from clients.

(83) Likewise, notification to clients should be sufficiently clear to make them understand the reasons for the change and prevent any malaise when the change is made. (Annex N°6 shows the suggested Notification Module.)



4.2. Cadastre Information Change Procedure

(84) We now describe suggested procedures to change cadastre characteristics that will lead to increased invoicing to users.

A Service Type Change

(85) At EPSEL S.A., the service type change procedure (from water to water and sewerage or from sewerage to water and sewerage) is immediate. You only need to verify that the service is active to automatically update the property's cadastre characteristics without too much red tape.

(86) This change consists in directly updating the information in the I.T. database. This will be automatically taken into account in the following invoicing. In case the system is not computerized, the change will be made in the cadastre card or similar document and then the changes will be reported to the invoicing area.

The cadastre change is direct according to contract with the company for one of the services.

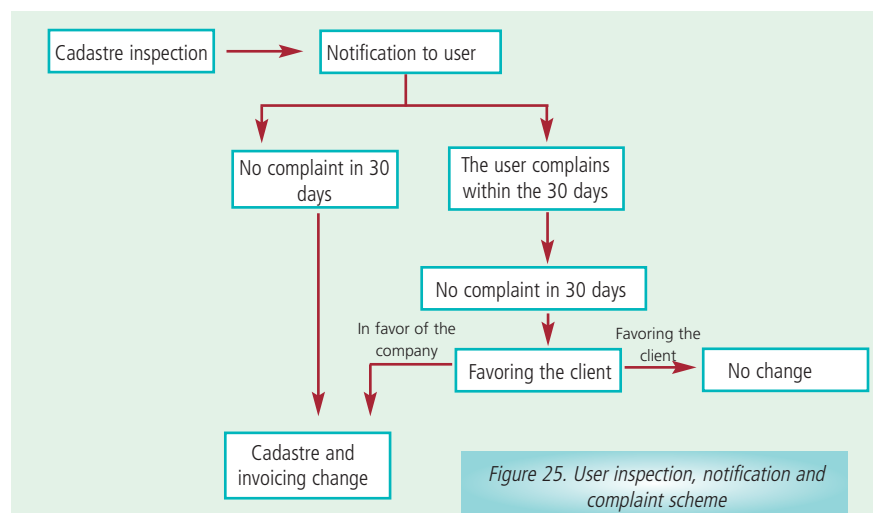
(87) Procedures should be adapted to each EPS internal policies and regulation. However, the procedures described above seem to be the most appropriate and agile.

B Tariff Type or Use Unit Change

(88) In these cases, the EPS may not immediately make the client cadastre information change after notification. It will have to wait for some time in which affected users may complain. The time between notification and database change is at least 30 days as established by SUNASS (See Annex N°9).

(89) If the client files a complaint within the established term, a Cadastre Office representative will go to his domicile to make a final decision. If no complaints are submitted, it is considered the client does not oppose the notification content.

User complaints



(90) Once the term for complaints elapses, the EPS will enter the cadastre information changes in the database, which will cause an increase in the invoice.

(91) When the EPS detects right-of-way cases, these must be prioritized to organize the placement of a micrometer and thus bill real consumption. Unfortunately, because of lack of money, this procedure is not implemented in every case. The alternative solution is to assign the property to a consumption that corresponds to several use units according to cadastre inspection.

C Clandestine Connection Incorporation

(92) The objective is to have clandestine users and users with arbitrary restorations regularize their situation and be included in the data to increase EPS invoicing.

(93) Identified clandestine connections should be reported to personnel that have been trained in regularizing services. They inform users about the advantages of becoming formalized and will contact clandestine users by making the procedure in their own domicile. These users will be provided any forms and documents required by the EPS.

(94) If clandestine users do not accept to formalize their situation, they will be notified and their connection will later be suspended.

(95) GTZ/PROAGUA has edited a manual called Module II – Massive Regularization of Clandestine Users within the framework of the EPS Commercial Management series concerning specific clandestine user regularization procedures.

Module II “Massive Regularization of Clandestine Users”

D How to Deal with Arbitrary Restoration

(96) When an arbitrary restoration is identified and confirmed, the user should be notified and cut-off services should be activated so that his/her debt becomes updated from the cut-off date to the current date. At the same time, specialized collection agents should visit the user to inform him/her about facilities provided by the EPS and to pay their debt in installments.

(97) If the dweller incurs in default in the following months, he/she will be subject to a more drastic cut-off and suspension of his/her service connection.

(98) In many companies, the cut-off and collection tasks are organized at specialized and separate offices. Therefore, to achieve an efficient process, it is necessary to do appropriate coordination and to have a good exchange of information between both offices. Page 41



SUMMARY



QUESTIONS



TASKS



RECOMMENDATIONS

- The information is reviewed by the office evaluator, who will point out to the inspector all the properties with a high likelihood for change.
- Cadastre Inspectors verify the information in the field and notify users subjected to changes.
- If there is no complaint within 30 days, the EPS will proceed to enter the changes into the I.T. commercial system so that they are included in the following month invoice.
- If the user submits a complaint within the established term, a new cadastre inspection is made.
- Some cadastre changes are immediate.
- Which are the current procedures in your EPS to enter cadastre changes into the I.T. support?
- What is the current procedure for complaints submitted by clients subjected to cadastre changes?
- Calculate the increase experienced by EPS invoicing with cadastre changes made during pilot development.
- Find out the commercial complaint statistics corresponding to cadastre changes and how many have been in favor of users.
- Consult Module II in this handbook commercial series explicitly devoted to clandestine regularization.
- The client service area must have a cadastre inspector exclusively devoted to responding to complaints.
- We suggest preparation of pre-defined response forms to commercial claims frequently submitted to the client service office which must be substantiated on the EPS legal base.
- Remember an unfair notification leads you to lose resources and harms the EPS image.



5

Instructions for Process Implementation

5.1. Pre-Requirements

(99) It is very advisable to design an I.T. application to follow up the process in all its phases. To do so, it is necessary to have a specialized programmer who achieves good interaction with the EPS commercial database. In case the EPS does not have commercial and cadastre information in I.T. media, the process will be probably slower and demand more human effort.

(100) Before preparing the software, it is necessary to fulfill the following requirements: defining the process structure and sequence, determining the pertinent information in each sub-process, identifying sources and means to obtain required data, as well as defining the type, format and quality of information expected from the system.

(101) This data not only makes up the base to prepare the software but also for any provisional alternative solution, be it a semi-automated system or a completely manual procedure.

(102) We now recommend tools for follow-up processes to be used in any modality.

5.2. Filling-In the Cadastre Information Form

(103) The number of forms to gather information given to each invoice distributor must be based on between 2 and 5% of all the lots in his/her zone.

Remember 2.4, Preparation of teaching materials and training

(104) The distributor will fill-in these forms according to the filling guide in Annex N°3 and will hand them to the cadastre department. The addressee of these forms is the person in charge of maintaining and following-up the system, that is, the office evaluator.



FORMATO DE INFORMACION CATASTRAL PLAN 11.019 CONEXIONES				PROAGUA g(t)		EoTcE	
Número del registro: Segundo Juan Arce				Fecha: 15/08/2017		Municipio: CAYLASH	
CANTON				CANTON		CANTON	
DISTRITO				DISTRITO		DISTRITO	
DISTRITO				DISTRITO		DISTRITO	
7	310	485	0	V. de la Vega 368	X		Electricidad
7	333	350	0	Leonino Prado 405	X		Cámaras de Internet 9 horas
7	333	855	0	Dr. Pedro Ruiz 550		X	Se cierra el 2° y 3° Pisos
7	364	415	0	Bolivia 797		X	Casa subdividida, se atiende de la misma conex. Tiene agua, electricidad
7	369	-	-	Bolivia 799		X	
7	369	620	-	Pj. Bolívar 557	X		Plantación "BAT110"
3	497	350	0	Av. San Victoria 170	X		Tiene agua y electricidad y solo se le fact. Agua
3	289	125	0	San Martín 210	X		Edificio en construcción (5 niveles, tiene agua)
7	361	950	0	9 de Octubre 390	X		chichería 2° piso
7	333	1000	0	Av. Luis Compadre 1105	X		Gran Super Hotel

Figure 26. Filled-in pre-identification form (example)

5.3. Entering the Information

(105) The Office Evaluator will transcribe the information provided by the invoice distributors to the system's entry forms or spread sheets. To optimize entering, this form will have a similar structure as the field report. Please notice the distributor code is entered together with each piece of information to then be able to distinguish data individually.

INVOICE DISTRIBUTOR REPORT

N°	Cod. Rep	Código						Dirección	Propietario	cambio de tipo de servicio	cambio de tarifa	cambio de unidades de uso	clan destino	OBSERVACIONES
		prov	loct	sect	Mz	Lte	Sub lote							
1	10	01	01	7	310	485	0	Vte. de la Vega 318	Electronorte		X			Electronorte
2	10	01	01	7	333	050	0	Lcio. Pdo 487	Placencia Villa David		X			Venta de computadoras
3	10	01	01	7	333	350	0	Lcio. Pdo 405	Sampén Samillán Luis		X			Cabinas de Internet 401 esq.
4	10	01	01	7	333	800	0	Diego Ferré 568	Vásquez Acuña María			X		4 pisos
5	10	01	01	7	335	855	0	Pedro Ruiz 550	Francisco Díaz Aldana	X				tiene desagüe y no factura
6	10	01	01	7	367	425	0	Bolívar 774	Chávez Meregildo Felipe		X			aserradero Chávez
7	10	01	01	7	367	435	0	Bolívar 774-A	Ocaña Izquierdo Oscar		X			carpintería

Figure 27. Pre-identification report form (digitalized data) example

5.4. Obtaining Information from the Database

(106) It is necessary to have additional information from the database to get to know the current status of user services. It is automatically obtained through the cadastre code link when field pre-identification data are entered. Additional information consists in:

- 1** Types of recorded services (water and/or sewerage)
- 2** Current service status
- 3** Number of use units assigned to the property
- 4** Type of tariff assigned to the property
- 5** Meter presence and condition

OFFICE INFORMATION

N°	Facturación de servicios		UNIDAD DE USO	TARIFA	DESC. TARIFA	CON MEDIDOR		OBSERV. MEDIDOR	EN CORTE O LEVANTADO	
	A	D							A	D
1		X		011	DOM A					
2	X	X		021	DOM B					
3	X	X		011	DOM A					
4	X	X	1	011	DOM A	NO				
5	X	X		021	DOM B					
6	X	X		021	DOM B					
7	X	X		011	DOM A					

Figure 28. Office basic data form

(107) this information is also found in the invoice, but **it is not advisable** for the distributor to pick it up from there because it will demand more work and mean a greater source of mistakes. In case an I.T. program permitting to obtain this information automatically is not implemented, the Office Evaluator must enter it into the system through cadastre codes and obtain data manually to then insert it in the spread sheet. As it can be noticed, this task will cause unnecessary delays and hence is not considered the optimum.

5.5 Contrasting the Information

(108) The following task will be to compare the cadastre database information with the information gathered by Invoice Distributors, aiming at detecting likely mistakes in the field data collection. To do so, some control variables are recommended so as to refine the cases that show the following inconsistencies:

Distributor information	Database information	Recommendation
Use unit change	Use unit change	Use unit change
Tariff change	Already has commercial or industrial tariff	Refine from the list if the database tariff corresponds to the distributor observation
Service type change	Both services are already recorded	Refine the list
Restored	Users with cut-off or suspended services	Derived to the cut-off and restoration area
Clandestine	User in process of regularizing already registered client	Refine the list
Mistaken codes and addresses		Refine

Figure 29. Frequent contrasting / refining and their management

(109) Control comparisons can be made automatically through the I.T. program or through formulas in the spread sheet. If these tools are not available, it will be done manually, which will take very long and cause mistakes.

(110) Likewise, it will be necessary to write down in the system why the data was amended to be able to supply the information to Invoice Distributors together with their liquidation and prevent the repetition of mistakes.

Information transparency keeps distributor trust in the system

(111) **The report** for field verification to be delivered to the Cadastre Inspector will be prepared after this refining. This report must contain the information provided by Invoice Distributors in the same form, as well as the information obtained from the database and the blank spaces to write down data and observation.

(112) These field verification forms must be **ordered** so that they facilitate cadastre inspection work such as reading by route or cadastre code.

5.6 Field Verification Forms by Cadastre Inspector

(113) The Cadastre Inspector will fill in the form according to his/her judgment during the inspection and will note down his/her decision in the observations and the reasons for it.

(114) This is necessary to be able to inform Invoice Distributors about the results and transmit the reasons for the non-validity of some of their information so they can keep track of the corresponding incentives.

FIELD VERIFICATION

N°	Servicios en uso		NUEVA TARIFA	N-unidades de uso	FECHA	OBSERVACIONES
	A	D				
1			COM II A		12-08-04	NOT. N° 1254
2					12-08-04	No ser amerita un cambio de tarifa, no usa agua para negocio
3			COM I A		12-08-04	NOT. N° 1255, Punto de agua para atención al público
4				2	12-08-04	NOT. N° 1256, Alquila un piso completo a otra familia
5	X	X			12-08-04	Desague Activo, Cambiar servicio : de agua -> agua/desagüe
5			COM I B	2	13-08-04	NOT. N° 1257, Tiene baños para sus trabajadores varios
6					13-08-04	No amerita cambios

Figure 30. Example for the verification report form filled in by the Cadastre Inspector

(115) Forms filled in the field by Inspectors will be given to the Office Evaluator to enter them to the follow-up system (I.T. application or spread sheet) and thus be able to calculate yields, process efficiency, distributor incentives and total invoicing increase resulting from changes made. Besides, they will permit to keep track of the dates in which they must be entered in the cadastre database and have actual effect in invoicing.

(116) These follow-up forms in all their phases must be validated with the people who manage them. Suggestions must be continuously received to improve them and make them more useful and practical.

5.7. Cadastre Database Change Forms

(117) The Cadastre Inspector will hand in a copy of his/her reports to the Cadastre Area Head, who will authorize the necessary cadastre database and the dates within legal terms (See Number 4.2 of this module).

(118) Eventual successful user claims should also be recorded in this form following Cadastre Inspector notification so the change is not applied.

5.8. Liquidation Report for Invoice Distributors

(119) Invoice Distributors will assume their role in the system with some interest provided they perceive that the EPS administration is appropriately **complying** with paying proposed incentives.

(120) Information transparency will help to keep trust in procedures and ensure that liquidation corresponds to reality. Likewise, it will promote better recording of the information by realizing about the observations.

(121) Besides, when distributors learn about the Office or Cadastre Inspector Observations, they will have the chance to evaluate them and oppose them by identifying **non-validated information** they do consider correct. This case can occur because of two reasons:

- Cadastre Inspectors may have received incentives by users to find no grounds to the information.
- Distributors may have based their information in observations and indexes they have not conveyed in their information form and the inspector has not been able to notice them.

(122) In any of the two cases, it is useful for distributors to be informed so they can **reiterate their information** with greater clarity and thus decrease the occurrence of these cases in the future.

RELACION DE REPARTIDORES		IDENTIFICADAS					VERIFICADOS				
Cód.	Nombre y Apellido	cambio de tipo de servicio	cambio de tarifa	cambio de unidades de uso	clandest.	TOTAL	cambio de tipo de servicio	cambio de tarifa	cambio de unidades de uso	clandest.	TOTAL
10	Segundo Jara Asenjo	6	74	52	4	136	6	74	47	4	131
11	Edguer Sampén Jimenez	0	4	17	20	41	0	4	16	19	39
12	Francisco Terneró Llontop	3	24	30	2	59	3	24	9	2	38
13	Nolberto Enriquez	0	11	1	0	12	0	11	0	0	11
14	Juan Pinillos Velasquez	0	52	49	1	102	0	50	20	1	71
15	Miguel A. Vera Díaz	0	34	0	1	35	0	34	0	1	35
		9	199	149	28	385	9	187	92	27	325

RELACION DE REPARTIDORES		INFORMACION EFECTIVA					
Cód.	Nombre y Apellidos	cambio de tipo de servicio	cambio de tarifa	cambio de unidades de uso	clandest.	TOTAL	monto incentivo s/.
10	Segundo Jara Asenjo	4	34	19	0	57	72.00
11	Edguer Sampén Jimenez	0	1	3	9	13	13.50
12	Francisco Terneró Llontop	2	10	5	0	17	21.00
13	Nolberto Enriquez Fuentes	0	4	0	0	4	6.00
14	Juan Pinillos Velasquez	0	13	12	2	27	32.50
15	Miguel A. Vera Díaz	0	14	0	0	14	21.00
		6	76	39	11	132	166.00

Figure 31. Liquidation report summary model

(123) To calculate distributor liquidation, it is necessary to verify if the information they provided generated a favorable change for EPS invoicing. This incentive liquidation must be done monthly to keep them motivated in their work.

(124) The liquidation report for Invoice Distributors must include **all the information** they got and the respective Office Evaluator and Cadastre Inspector observations. This is how they will have knowledge of each one of their pieces of information: if it has been refined at the Office, if it has been considered as lacking grounds by the Cadastre Inspector or if it has been valid information. An example of valid report can be seen in **Annex N°7**.

(125) Again, it is convenient to automate these tasks to guarantee reliability, precision and quickness of calculations.

	<ul style="list-style-type: none">■ In the contrasting/refining phase, only cases submitted for change are filtered.■ The area head is the last instance and makes the definitive decision about the change.
SUMMARY	
	<ul style="list-style-type: none">■ How are cadastre changes currently recorded in your EPS, manually (preparing cadastre forms) or only entering data in the commercial I.T. system?■ What have been the complaints most frequently submitted by clients during the pilot phase implementation? Which have favored the user?■ If you were the distributor, what information would you like to have on reported cases that are not subjected to a cadastre change?
QUESTIONS	
	<ul style="list-style-type: none">■ Calculate the costs/benefit of the EPS for the cadastre dynamic updating system implementation, comparing only distributor liquidation with monthly invoicing increase.
TASKS	<ul style="list-style-type: none">■ Prepare an I.T. application linked with the EPS database and automate data extraction to work more efficiently.■ In the digitalized pre-identification form, the respective distributor who provided data should be noted down for future procedures.■ Each case that is refined from the list reduces distributor bonuses. Therefore, this should be very transparent. This very much affects distributors' motivation.
	
RECOMMENDATIONS	



6

Instructions for Result Follow-up and Control

6.1. Rationale

(126) Once the cadastre and invoicing system changes are made, an evaluation of the impact of the measures taken, yield and efficiency of agents participating as Invoice Distributors, Cadastre Inspectors and office personnel has to be made. Besides, the behavior of users who were subjected to some kind of cadastre change need to be observed both concerning complaints and compliance with payments.

(127) In this way, there will be timely information for each measure that will allow decision-making to improve in necessary aspects and show its effectiveness to top managers.

(128) This chapter does not detail an evaluation and follow-up plan, because that would be too ambitious and even not applicable for all the users of this manual, so we will only mention some considerations about aspects we consider important for this suggested analysis.

6.2. Information Needed for the Analysis

(129) The cadastre office head or someone he delegates should be responsible for this analysis because he/she will directly make decisions and implement improvements according to processed statistics.

(130) The analyst must get information from every process phase:

- Gathering information in the field
- Refining at the office
- Cadastre inspection
- Generated complaints
- Results on these complaints
- Changes made

(131) Information must be detailed and digital (spread sheets or databases) to facilitate analysis.



6.3. Information Analysis

(132) This data will be used to prepare **statistic charts** among which we suggest the following:

- Determine in which sectors of the city the gap between the invoicing and collection has increased or decreased as a result of cadastre changes.

A representative sample every 6 months

(133) This piece of information is important to know if there are negative effects, such as default increase because invoice amounts increased for users after cadastre updating. To do so, a representative sample among users who have been subjected to some cadastre change every six months is considered sufficient.

(134) Through the history of these users' payment, their default factor is compared with the company's average default factor, verifying if there is a significant difference between both. If possible, these factors should be compared with the former situation six months before, both concerning the general average and the same sample users.

(135) If said **cadastre changes** increase default and in order to minimize this effect, communication with the user should be intensified at the moment of notification and change implementation.

■ Determine the efficiency level in collecting field information (by Invoice Distributors).

(136) The first indicator to measure this efficiency level is the **percentage** of provided information over total property number in the intervened sector. This will show the dedication and interest that the field informant has and will allow to detect workers who do not contribute with significant information.

(137) A second indicator, perhaps more important than the first, is the percentage of information that finally **results in** a cadastre **change** over the total information provided by the informer. These efficiency percentages must be calculated on a monthly basis to measure their evolution.

■ Determine the Cadastre Inspector efficiency level.

(138) An indicator of cadastre inspection reliability will be the percentage of **claims** that favor users. If the cadastre inspector notifies a user pointing at a change of some cadastre factor and it is found incorrect after the complaint, he/she is evidently making appreciation mistakes. So as to verify this, a column should be included in the follow-up sheet to include complaint cases that favor users.

(139) Another efficiency factor that can be evaluated is the **average time** spent by the Cadastre Inspector to visit the property in the list he/she has received, calculating for example the number of properties visited per day.

■ Showing operation validity from an economic point of view.

(140) A global indicator is the economic calculation of the invoicing increase thanks to cadastre changes made in comparison with monthly expenditures generated by the EPS Cadastre Dynamic Updating, taking into account remunerations to the involved personnel (Invoice Distributors, Office Personnel, Cadastre Inspectors, etc.) In this way, the **profitability** of the implemented mechanism will always be demonstrated.

6.4. Decisions to be Made According to the Specific EPS Situation

(141) According to analyses made, the person who is responsible for the cadastre area may determine which are the process aspects that need to be adjusted or who are the people that participate in the process without contributing with expected results.

(142) Starting from this, reinforcing some stages can also be suggested, such as for example the information to users notified when there are many complaints or defaults after a change or after a decrease of cadastre inspection personnel or office personnel when verification and processing terms are too long.



RESUMEN

- Every machine requires maintenance.
- To measure system impacts, the entire process results are analyzed.
- Structure and personnel yield and efficiency are verified.
- Effects are analyzed according to service sectors, distributors and temporary intervals.
- Possible modifications are decided based upon their positive effect for the company.



RECOMENDACIONES

- Results should be analyzed at least every six months.
- When effects are not controlled, the effect of possible improvement is lost.
- Statistic charts facilitate comparison.
- Possible factors are
 - Area budget
 - Personnel number
 - Personnel qualification
 - Communication with users
- Personnel performance has to be analyzed according to population and industrial growth in the assigned area, since they can be misinterpreted by the analyst.

ANNEXES

ANNEX 1	<u>TARIFF STRUCTURE FOR THE DRINKING WATER SERVICE</u>
ANNEX 2	<u>CADASTRE INFORMATION FORM</u>
ANNEX 3	<u>GUIDE FOR FILLING-IN THE CADASTRE INFORMATION FORMS</u>
ANNEX 4	<u>SERVICE INVOICE SPECIMEN</u>
ANNEX 5	<u>PROCESS FOLLOW-UP FORM SPECIMEN</u>
ANNEX 6	<u>SUGGESTED NOTIFICATION SPECIMEN</u>
ANNEX 7	<u>EXAMPLE OF FINAL REPORT FOR DISTRIBUTORS</u>
ANNEX 8	<u>MODULE PLANNING FORM</u>
ANNEX 9	<u>SUPERINTENDENCE RESOLUTION 1179-99-SUNASS "GUIDELINE ON AMOUNT TO BILL AND INVOICE FOR DRINKING WATER AND SEWERAGE SERVICES"</u>
ANNEX 10	<u>USE UNIT CLASSIFICATION FOR THE DRINKING WATER AND SEWERAGE SERVICE (CUU, IN SPANISH)</u>

ANNEX N° 1

Tariff Structure for the Drinking Water Service Consumption Comparative Chart

Category	Tariff Code	Code Description	Minimum Consumption with Meter	Consumption Assignment without Meter	Consumption Ranges	TARIFF
			(m ³)	(m ³)	(m ³)	(S/. / m ³)
Domestic	011 - 081	DOM A	8	20	0 a 20	0.5974
	021	DOM B		30	21 and more	1.1948
Commercial	161	COM I A	14	3	0 a 35	1.0213
	091	COM II A		45		
	171	COM I B		60	36 and more	1.7435
	101	COM II B		95		
	301	COM III A		100		
	311	COM III B		200		
STATE	371	EST II A		100	0 a 50	0.5974
	381	EST II B		200	51 and more	1.1948
	441	EST I A		50		
	451	EST I B		100		
SOCIAL	581	SOC A	4	10	0 a 10	0.1804
	591	SOC B		20	11 and more	0.3607
INDUSTRIAL	711	IND A	40	100	0 and more	3.5209
	721	IND B		200		

Lambayeque EPSEL S.A. Tariff Structure

ANNEX N°2

Cadastre Information Form

FORMATO DE INFORMACION CATASTRAL									
PLAN 18.000 CONEXIONES									
Nombre del repartidor: <u>Segundo Jesus Argon</u> Fecha: <u>15/07/2004</u> Municipio: <u>CANCAR</u>									
CANTON				Dirección	Código de Tipo de Servicio	Código de Calle	Código de Edificio de Calle	Lugar	Observaciones
Distrito	Barrio	Calle	Número						
7	310	485	0	V. de la Vega 318		X			Lectricidad
7	333	350	0	Leoncio Prado 405		X			Cabina de Internet B/ano
7	333	855	0	Av. Pedro Ruiz 550			X		Se alquila el 2° y 3° Pisos
7	364	415	0	Bolivar 797			X		Casa subdividida, se atiende de la misma conex. Tiene agua, activa
7	369	-	-	Bolivar 799				X	
7	369	620	-	Pj. Balaraso 557		X			Protección "BAT110"
3	497	350	0	Av. Sta. Victoria 170	X				Tiene agua y cloacas y solo se le fact. Agua
3	289	125	0	San Martín 210		X			Edificio en construcción (5 niveles, tiene agua)
7	361	950	0	9 de Octubre 390		X			Chichería 2° piso
7	333	1000	0	Av. Luis Gonzales 1185		X			Gran Sipa Hotel

Reproduction of a Form Filled-In by an Invoice Distributor of EPSEL S.A. July 2004.

ANNEX N°3

Guide for Filling-In the Cadastre Information Forms

PLAN «10,000» CONNECTIONS Pilot Phase of the "Cadastre Dynamic Updating" Program GUIDE TO FILL-IN THE "CADASTRE INFORMATION FORM"

■ INTRODUCTION:

The "Cadastre Dynamic Updating" program aims at permanently updating the cadastre information of EPSEL S.A. users. This will cause a decrease of commercial losses, increasing company invoicing and collection.

A pilot phase will be implemented in July in Sectors 1, 3 and 7 in Chiclayo and in the Pimentel district. Based upon results of this phase, this activity will be expanded as from August.

■ INVOICE DISTRIBUTOR WORK

Taking into account that Invoice Distributors are EPSEL personnel who are in monthly contact with every water and sewerage user, these are the right workers to provide the cadastre office with useful information to update user cadastre forms.

This information will be collected when the distributor is delivering the invoices corresponding to his/her sector. Information will be recorded in "CADASTRE INFORMATION FORMS."

■ INDICATION TO FILL- IN THE FORMS

Initial Data: The whole distributor name should be written as well as the corresponding district on top of each form to control and identify the information.

Filling-in the Information: User information will be filled-in only when there is some situation which does not agree with user invoice information and that will permit an increase in his/her invoicing.

The form considers five different situations that may be marked with an (X) in the corresponding box. These five situations are:

1. Service Type Change: When the invoice only bills one of the services but observation in the field shows that the property has both services.

2. Tariff Change: When observation in the field shows that there is a different activity in the property than the one mentioned in the invoice. For example:

a) When the invoice points at a domestic category but it is a commercial, industrial or state premise with the presence of a water point in the business or it is evident that the owner uses water for his/her business.

b) When the invoice points at a commercial category but observation shows that it is an industrial premise with water use for business.

Industrial premises: restaurants, canteens, internet booths, private schools, public restrooms in shopping centers, houses or buildings in construction.

Industrial premises: factories,

State premises: local schools, public institutions.

3. Use Unit Change: When the property is subdivided in two or more parts or has several floors with independent departments.

4. Clandestine: When there is a property with water or sewerage connection and no services are being billed to that property.

5. Arbitrary: When there is a property with water or sewerage connection even if service had been cut-off by the company.

*The Invoice Distributor who observes that a property shows one or more of the former situations will write down in the **FORM** the use cadastre code (according to the invoice) his/her exact address (Street/Number of block of houses/lot). He/she will mark an (X) in one or more of the four boxes according to the detected situation and he/she will write in the observations box some useful comment that substantiates or describes the findings.*

The FORMS will be delivered to the clients at the Client Cadastre Office for their verification.

Incentives: When the information distributors collect is confirmed by the cadastre area and causes an increase in the user's invoice, distributors will receive an incentive per each confirmed piece of information, as follows:

■ Cambio de Tipo de Servicio	S/. 0.50 por información confirmada
■ Cambio de Tarifa	S/. 1.50 por información confirmada
■ Cambio de unidades de uso	S/. 1.00 por información confirmada
■ Clandestino / Arbitrario	S/. 1.00 por información confirmada

These incentives will be valid for this pilot phase (July) and can be modified for the following months.

Note: According to the experience in Chiclayo, incentives are recommended to be twice as much as those provided which would be a fairer award for the information.

PLAN «10,000» CONNECTIONS

Pilot Phase of the "Cadastre Dynamic Updating" Program

ADDITIONAL OBSERVATIONS TO FILLING-IN IN THE "CADASTRE INFORMATION FORM"

INTRODUCTION

During the invoice distribution period between July and August 2004, information on cadastre updating was gathered by filling in the "Cadastre Information Forms".

RECOMMENDATIONS

Generally, the results achieved in this phase have been successful; however, we think it is necessary to give some recommendations that will help improve the quality of information gathered by invoice distributors and that will minimize cadastre inspectors field work.

The main observations are:

1. Every information must be delivered in time, because if not processing and verification will be delayed.
2. In the case of clandestine users, include the code corresponding to the sector and block of houses, which can be obtained from neighbor codes. Besides, point out precisely the lot address or references to easily locate it.

3. For clandestine users point out which of the two services has been found as active.
4. The relevant information that causes the note must always be included in the observations box. Many forms have been found without any information in this box which makes cadastre inspection work harder.
5. In the Case of use unit change, it must be checked in the invoice that the property does not have a meter or that use units corresponding to it are not being billed.
6. Likewise, it is necessary to record the properties that show evidence of subdivisions in one or more floors or horizontal subdivisions in the case of use unit change. Not all the two or three story houses hold several families. If a house is very big, it does not necessarily mean it corresponds to two use units.

In the case of rent, note down when the rent corresponds to a part of the house and other families live in another part of the house. If the rent is for the entire house, then a single use unit corresponds and in this case it should not be noted down.


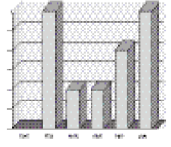
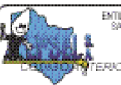
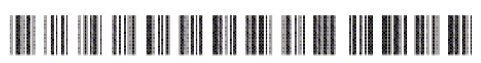
7. In case of service type change, write down in the observations box which service has been found.

NOTE: A box named "others" has been added to the data collection form. An "X" will be marked in this box when there is some situation which has not been considered but which merits a cadastre change. This should be clearly written down in the observations box. The following cases may be noted down:

1. Houses or premises with a meter showing very low readings as compared to the size and use of the property (only write down the very evident cases where it is known that they have another unrecorded connection or that they manipulate the meter).
2. Properties where they are billed as fi" connection and where it is known that they have an fl", 1" or larger connection.

ANNEX 4

Service Invoice Specimen

 ENTIDAD PRESTADORA DE SERVICIOS DE SANEAMIENTO DE LAMBAREQUE S.A. R.U.C. N° 20103448591		Código Inscripción 1-1-1-283-800-211 (*) 18.01 01481281																															
Nombre: AGUIRRE GONZALES JULIO C. Dirección: AV. MIGUEL GRAU 360-211 Urb. ZON. CERCADO DE CHICLAYO R.U.C. Ruta: 1 1 1 40 199 Tarifa: DOMA		Período Número de Recibo SEPTIEMBRE 2004 1-11163025-83																															
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ESTIMADO USUARIO: nuestro objetivo es atender cada día mejor con nuestros servicios. visita nuestra Página Web: www.epsel.com (*) Ahora sus pagos pueden efectuarse al Banco de Crédito y vía Internet en la página: www.viabcp.com																																	
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ANNEX 5 Process Follow-Up Form Specimen

ACTUALIZACION DINAMICA CATASTRAL : FASE PILOTO

Chadaya - Sección 1, 3 y 7
Julio de 2024

15/11/04
SECCION DE VERIFICACION

Nº	Hº	CENSO					DIRECCION	PROYECTO	Cadastral en el año de verificación	Cadastral en el año de verificación	Observaciones	INFORMACION DE GAVINETE					VERIFICACION DE CAMPO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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Example of a checklist for cadastre inspection (EPSEL S.A. August 2004)

[illegible]


Example of a Summary Final List with cadastre inspection results (Part 1)

VERIFICABLES										ACTUALIZACIÓN CATASTRAL										DISPONER DE ACTUALIZAR										LECCIÓN DE INFORMADORES					Instrumento de Producción mensual																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
Gr	Ord	CERDAS							Corte	Medida	Comunidad	Comunidad de Usuarios			Actividad	Clasificación	Porcentaje de Bienes		Tipo de Bienes	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	Uso	U

Example of a Summary Final List with cadastre inspection results (Part 2)

ANNEX 6

Suggested Notification Specimen



NOTIFICATION **N° 007551**


Cadastre Code:
Name:
Address:
Ref:

Having confirmed that the drinking water service in the above-mentioned address is aimed at different ends and uses than was initially requested from the company, you are notified that as from this date, according to our Service Supply Regulation, approved by Superintendence Resolution N° 015-97-SUNASS-INE, your drinking water tariff will be classified in a higher category.

Approved
Chiclayo, date

Inspector Signature

Tariff change modification specimen



NOTIFICATION **N° 000018**

Cadastre Code:
Name:
Address:
Ref:

Having confirmed that the drinking water service in the abovementioned address is aimed to supply more than one use unit from the company, you are notified that as from this date, according to our Service Supply Regulation, approved by Superintendence Resolution N° 015-97-SUNASS-INE, your drinking water tariff will be classified in a higher category. And pursuant to the guideline "Amount to Bill and Invoice Payment for Drinking Water and Sewerage Services" approved by Superintendence Resolution N° 1179-99-SUNASS, your assigned drinking water consumption will be calculated according to the multiple use units.

Approved
Chiclayo, date

Inspector Signature

Use unit increase notification specimen



NOTIFICATION

N° 000321

Cadastre Code:

Name:

Address:

Ref:

Having confirmed that you are using the () drinking water () sewerage service without authorization, you are required to come to our offices at Av. Grau 451 to regularize your situation within a 48 hour term. If not, your connection (s) will be suspended, according to service supply regulation, approved by Superintendence Resolution N° 015-97-SUNASS-INF.

User Signature
DNI N° _____

Notifying Official Signature
Chiclayo, date

Notification specimen for arbitrary
or clandestine connections



NOTIFICATION

N° 02457

Cadastre Code:

Name:

Address:

Ref:

User Signature
DNI N° _____

Notifying Official Signature
Chiclayo, date

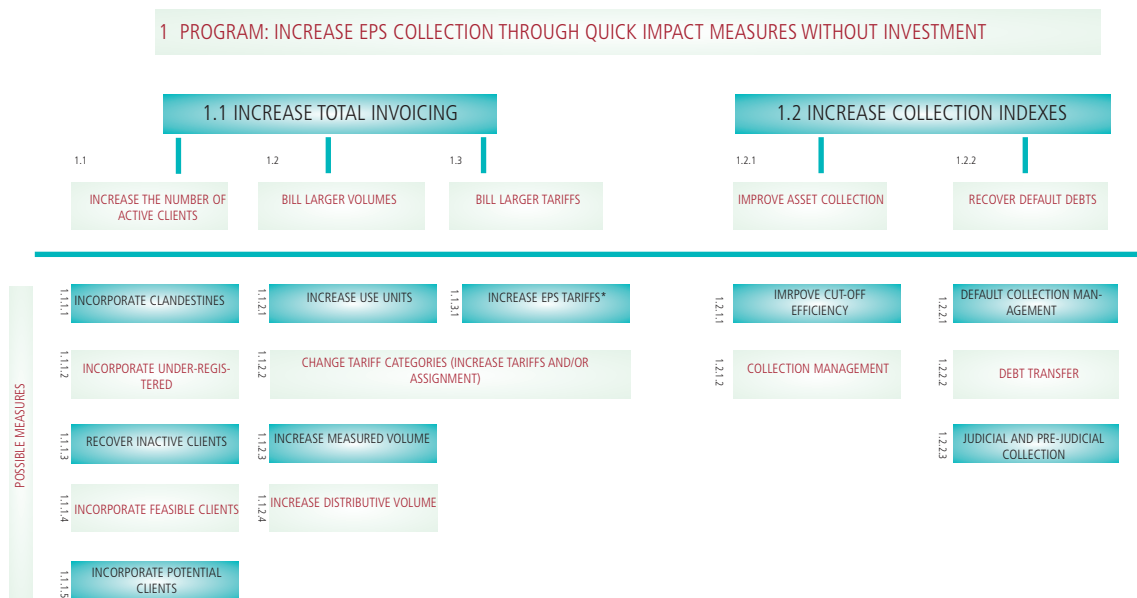
Notification specimen for varied cases

ANNEX 8

Module Planning Form (FPM, in Spanish)

CADASTRE DYNAMIC UPDATING MODULE

Module Location within the Program: Measure Tree



* Do not correspond to the commercial area

TARGET GROUP DEFINITION

MAIN TARGET GROUP

COLLATERAL TARGET GROUP

- COMMERCIAL MANAGEMENT
- CLIENT CADASTRE
- MEASUREMENT AND INVOICING
- CLIENT SERVICE

Objective definition and document general structure:

MODULE TERMINAL OBJECTIVE

Once trained and/or advised, the EPS implements a cadastre dynamic updating program.

PARTIAL OBJECTIVES

■ The Target Group reinforces the importance of keeping an updated cadastre and the foundations for increasing invoicing. Likewise, it understands the causes of out datedness and the problems it causes.

■ The Target Group comprises the conception of Cadastre Dynamic Updating and its consequences.

■ The Target Group knows the procedures to identify the properties to which some cadastre change might be applied and the identified property inspection and cadastre phase.

■ The Target Group understands the information flow sequence and considers it is feasible to implement it in its EPS.

■ The Target Group knows the follow-up and control procedures for implemented processes.

DOCUMENT GENERAL STRUCTURE

1.Problem Description

- 1.1 General Problems
- 1.2 Background (Invoicing Calculation, Cadastre, Cadastre Out datedness)

2.Cadastre Dynamic Updating Process

- Background (Invoicing Calculation, Cadastre, Cadastre Out datedness)
- 2.1 Proposed Solution – introduction
- 2.2 Process Description of the General Dynamic Cadastre Updating.
- 2.3 Selection of sectors or zones for implementation.
- 2.4 Preparation of teaching materials and training.

3. Identification of Clients that Might Undergo Change

- 3.1 Pre-identification by invoice distributors
- 3.2 Information verification and refining.

4. Cadastre Status Change

- 4.1 Field Cadastre Inspection.
- 4.2 Cadastre Information Change Procedure

5.Implementation Instructions

- 5.1 Implementation flow description
- 5.2 Annexes

6.Instructions for Result Follow-Up and Control

- 6.1 Information Collection
- 6.2 Data Analysis
Improvement Proposal

ANNEX N°9

Superintendence Resolution 1179-99-SUNASS “Guideline on Amount to Bill and Invoice for Drinking Water and Sewerage Services”

SUPERINTENDENCE RESOLUTION N° 1179-99-SUNASS

The Guideline “Amount to Bill and Invoice for Drinking Water and Sewerage Services”

Published: December 25th, 1999.
Lima, December 22nd, 1999

WHEREAS:

SUNASS establishes the principles and procedures to apply the tariff system as sanitation service supply regulator;

Article 8 subsection b) of Law N° 26284 establishes that the National Sanitation Service Superintendence issues any required complementary provisions concerning the Tariff System;

Superintendence Resolution N° 920-98-SUNASS started the tariff reordering process at municipal EPS aiming at simplifying the service supply invoicing process and making it transparent.

Within said process, principles and procedures have been established to determine the amount to be billed which must be included in a comprehensive regulation on said matter which should contain the Use Unit Classification Table used by EPS, as well as the information that shall be included in the invoices pursuant to Law N° 26284 and Law N° 26338 and their respective regulations.

THEREFORE:

Article 1. The guideline “Amount to Bill and Invoice for Drinking Water and Sewerage Services” is approved. The guideline is included in an annex that makes part of the Resolution herein.

Article 2. Abolish every provision opposing the Resolution herein.

To be recorded, notified and published.

ENRIQUE MONCADA MAU
Superintendent

GUIDELINE. "AMOUNT TO BILL AND INVOICES FOR DRINKING WATER AND SEWERAGE SERVICES".

1. OBJECTIVE

Establish the criteria and procedures that sanitation service suppliers, hereinafter EPS, should apply in their invoicing for said services.

This guideline is aimed at defining:

1.1 Classification of drinking water and sewerage service use units.

1.2 The procedure to determine the amount to bill for the supply of drinking water and sewerage services.

1.3 The elements that must be included in the invoice as communication and relation mechanism means between the EPS and the user.

2. OBJECTIVE

To guarantee simplicity and transparency in the invoicing process for EPS drinking water and sewerage service.

3. SCOPE

The guideline herein is mandatory for every EPS in the country.

4. LEGAL GROUNDS

4.1 Law N° 26284, National Sanitation Service Superintendence Law.

4.2 D.S. N° 24-94-PRES, Regulation of the National Sanitation Service Superintendence General Law.

4.3 Law N° 26338, General Sanitation Service Law.

4.4 D.S. N° 09-95-PRES, Regulation of the General Sanitation Service Law.

4.5 R.S. N° 019-96-PRES-VMI-SUNASS, Guidelines for the Formulation of the EPS Drinking Water and Sewerage Service Supply Regulation.

4.6 R.S. N° 920-98-SUNASS, EPS Tariff Reordering Guideline. SUPERINTENDENCE RESOLUTION N° 1179-99-SUNASS, Published in El Peruano, the Official Gazette, on December 25th, 1999.

4.7 R.S. N° 765-99-SUNASS, Sanitation Service User Complaint Response Procedural Guideline.

4.8 Decree Law N° 25632, which establishes obligation to issue invoices in any transfer of goods, whether in property or use, or in service supply of any kind.

4.9 R.S. N° 007-99-SUNAT, Invoice Regulation.

5. RATIONALE

Simplicity and transparency are two of the main tariff system ruling principles, as established by Law N° 26338 and its Regulation. In compliance with said principles, it is necessary to establish standardized criteria and procedures for the invoicing for services provided by EPS, gradually eliminating deficiencies that are still found in this respect.

For example, the user classification tables EPSs are applying for invoicing for their services have been prepared by the EPS using different criteria. This decreases the objectivity and transparency of said classification and is a source of permanent conflict.

In this regard, the tariff system established by Law N° 26338 and its regulation foresees gradual reduction of discriminatory treatment to different kinds of users in the application of tariffs. However, tariff structure complexity after long decades as well as the differences between tariffs applied to different kinds of users determine that the elimination of said differences cannot be made automatically but along a gradual albeit clearly conducted process which has been started through Superintendence Resolution N° 98-SUNASS.

In this regard, taking into account what has already been foreseen by specific Resolutions for each company within the framework of said process, it is necessary to establish general procedures that EPSs should use to determine the amount to bill for drinking water and sewerage services, as well as the information that should be contained in the respective invoices, because that will contribute to making the invoicing process more transparent and will clearly establish what is being charged for.

6. GENERAL PROVISIONS ON THE AMOUNT TO BE BILLED ON DRINKING WATER AND SEWERAGE SERVICES

6.1 The following criteria shall be taken into account in the process of determining the amount to be billed for drinking water and sewerage services:

6.1.1 Services will be billed only if they are effectively supplied. If a user has one of both basic services (drinking water and sewerage), he/she should be billed only for the service he/she has.

6.1.2 Household connections will be billed only if they are active. Those which have been closed by the company or by user request will not be billed, except for restoration when it occurs.

6.1.3 The base for invoicing both services will be the consumed or assigned drinking water volume. It should be duly authorized by SUNASS. The basic payment will be applicable only by companies that have totally eliminated the “minimum consumption” system according to Superintendence provisions.

6.1.4 Invoicing for supplied services will be made at use unit level in each property. If there is one or more than one units served by a household connection, the volume and amount for each one of those units will be determined according to the procedure in section 7 herein.

6.1.5 Use unit is a property or section (physical space) of a property that has independent use and a water and/or sewerage point. Independent use means employing the drinking water and/or sewerage service autonomously from other sections. Use Unit Classification (CUU, in Spanish) will be made according to provisions in this Guideline.

6.1.6 Determining the volume to bill will be made through different readings of the respective consumption meter. If there is no meter, the EPS may use maximum consumption assignments according to regulations and limits established by the Superintendence.

6.1.7 The modality used to determine the volume to be billed must be fully known by the user. Any user who, as to the issuance date of the Guideline herein, has been billed for a reading difference cannot be changed to the maximum consumption assignment modality, except for special circumstances and for a limited time, as pointed out by subsection 7.1 of the Guideline herein.

6.2 The following are phases of the procedure to determine the amount to be billed for drinking water and sewerage services.

6.2.1 Use unit classification, following provisions in the Annex of the Guideline herein, said classification will be used to apply tariffs established for each category and to determine volumes to be billed in case the connection does not have a consumption meter.

6.2.2 Determination of the volume to be billed for drinking water corresponding to each use unit (hereinafter VAF for water) using the CUU in cases where it corresponds.

6.2.3 Determination of the amount to be billed for drinking water corresponding to each use unit (hereinafter amount for water) based upon VAF for water and corresponding tariffs.

6.2.4 Determination of the amount to be billed for sewerage (hereinafter, amount for sewerage).

6.2.5 Determination of the total amount to be billed for drinking water and sewerage services.

6.3 To determine the amount to bill for the drinking water and sewerage service, two possible situations should be considered:

- That properties have a drinking water connection.
- That properties have several drinking water connections.

6.4 In the case of properties with a single drinking water connection, the following cases can occur:

- The property has only one use unit.
- The property has more than one use unit.

6.5 In case of properties with more than one drinking water connection, the following cases can occur:

- The property has one single use unit.
- The property has more than one use unit.

(*) Section included by Article 3 of Resolution N° 005-2003-SUNASS-CD, published on 24-04-03, with the following text:

"6.6 Invoicing based upon difference of consumption meter readings will take the following into account:

6.6.1 The EPS that installs consumption meters in the already installed drinking water household connections shall, within 30 to 60 days, inform the user through communication in writing, attached to the invoice, about the approximate date of meter installation, and shall send the user an information guide on invoicing based upon different readings, which minimum content shall be defined by SUNASS.

6.6.2 In case of connections that have been billed by consumption assignment and if a meter is installed, invoicing by difference of readings will be gradually applied according to the following:

i) On the first month, the volume to be billed will correspond to the lesser value between comparing the reading difference and consumption assignment.

ii) In the second month, the volume to be billed will correspond to the lesser value comparing the reading difference and one and a half of the consumption assignment.

iii) As from the third month, the volume to be billed will correspond to the difference between readings.

Notwithstanding the aforementioned, the EPS may establish another gradualist scheme provided it is more favorable to the user, which will be informed to the user and SUNASS in writing.

6.6.3 In case the new household connections are installed with their respective consumption meter, the invoicing based in reading difference will be made from the first month. The EPS will also give these users the information guide referred to in subsection 6.6.1 when they request a connection.

6.6.4 In what concerns consumption invoicing, the meter reading will be monthly and the period between readings will not be less than 28 nor more than 32 calendar days. Such reading will be considered as a valid reading difference. If exceptionally said period is longer, the volume to be billed in said month will be limited to the part that corresponds to 30 calendar days and the difference must be included in the following invoicing, applying the tariff of the first range that was current in the month before.

6.6.5 Once the consumption meter is installed, it may only be removed following communication in writing to the user at least two working days before. This responds to three reasons: (i) to give it maintenance, (ii) to do Contrasting at the lab, and (iii) to be replaced by another meter.

In the first case, the meter will be reinstalled in a maximum term of five working days as from the date of its removal. In the second case it will be reinstalled at most the next working day after Contrasting and in the last case the EPS shall install the new meter in no more than three months as from the date it was removed.

If the EPS does not reinstall the meter in the mentioned terms, it will be sanctioned according to current regulations.

While the meter is not reinstalled, the EPS shall bill the lesser volume between the applicable consumption assignment and the consumption historical average, understood as the average of the six last valid reading differences or those existing.

6.6.6 When, as a consequence of a complaint, average invoicing is applied, it will not include the claimed month or months.

6.6.7 In case the EPS has certified deliberate alteration of the consumption meter measuring mechanisms, the EPS may remove the meter and bill the user the historical consumption average for a maximum of six months after the fact has been confirmed.

Once that term elapses, the EPS shall install a new consumption meter.

Application of the provision herein will be made pursuant to the drinking water meter contrasting Guideline in the section referred to actions by EPS initiative.

6.6.8 EPSs are obliged to permanently control the quality of invoicing based upon reading differences, detecting atypical ones so as to rule out reading deficiencies or distorting factors of the consumption record, such as service interruptions in the zone, in which case the difference will be let aside and the consumption historical average will be billed.

Atypical invoicing is that which exceeds the user's consumption historical average by more than 100%.

EPSs shall keep record of atypical invoicing, as well as of the actions provided to this end so that it may be controlled."

7. DETERMINATION OF THE VOLUME TO BE BILLED FOR DRINKING WATER

7.1 A property with a single use unit, served by a drinking water connection with a meter. In this case, VAF for water will be determined from the reading meter of the respective consumption meter.

7.2 A property with a single use unit, served by a drinking water connection without a meter. In this case, the VAF for water will be the consumption assignments established by SUNASS for the corresponding user category. The EPS can apply a lower consumption assignment than established to population sections with supply restrictions.

7.3 A property with several use units, served by drinking water connection with a meter. In this case, the total water consumption volume recorded by the water consumption meter will be determined. Then, said consumption volume will be divided among the number of use units, no matter what their class or category is, which results in the VAF corresponding to each use unit.

In replacement of the aforementioned method, users can agree together with the EPS a different distribution, in which case it will be applied as from the month that follows notification hereof to the EPS.

7.4 A property with several use units, served by a drinking water connection without a meter. In this case, the VAF for water in each use unit will correspond to the lower consumption assignment established in the corresponding category.

7.5 A property with a single use unit served by one or more drinking water connections served by or without a meter. In this case, VAF for water corresponding to said use unit will equal the addition of VAF determined independently for each drinking water connection pursuant to subsection 7.1 and 7.2, as the case may be.

7.6 A property with several use units served by one or more drinking water connections. In case there is a consumption meter in each one of the connections serving the property but water consumption corresponding to each use unit cannot be told apart, consumption recorded by each one of the meters should be added and the total addition must be divided among the corresponding use units, as pointed out in subsection 7.3 of the Guideline herein.

In case the connections do not have their respective consumption meters, the VAF will be determined for each use unit by applying the lower consumption assignment corresponding to the respective category, according to the current user classification.

8. DETERMINATION OF THE AMOUNT TO BE BILLED FOR DRINKING WATER

The amount to be billed for drinking water will be obtained as a result of applying the tariffs established to each consumption level over the VAF for water. In case the tariff structure that should be applied considers a single tariff for the category to which the corresponding use unit belongs, said tariff will be applicable to the VAF, resulting in the amount to be billed for drinking water to said use unit.

In case the tariff structure considers different tariffs for consumption ranges, the tariff corresponding to said range will be applied to the volume comprised within the first range. The tariff corresponding to the second range will be applied to the volume comprised within the second range and thereon until completing VAF. The addition of partial results will determine the amount to bill for drinking water to said use unit.

9. DETERMINATION OF THE AMOUNT TO BILL FOR SEWERAGE

The determination of the amount to bill for the sewerage service will be made by applying the overcharge percentage established by SUNASS to the amount to be billed for drinking water in the corresponding tariff structure.

In the case of properties with their own water source and if they only use the sewerage service, the EPS may only bill for that service, previously determining the volume used by said user through a meter installed at the source or through its capacity, which will be considered as VAF.

Based upon said volume, and using previously established procedures, the amount to be billed by the drinking water service will be determined as if it were provided. The corresponding percentage for sewerage will be applied to said amount. The result is the amount to be billed for said service. This procedure will be applied even if the property has several sewerage connections.

10.DETERMINATION OF THE TOTAL AMOUNT TO BILL FOR DRINKING WATER AND SEWERAGE SERVICES

Determination of the total amount to bill will be made by adding amounts to bill for the Drinking Water and Sewerage Service plus the charge for basic payment if it corresponds.

The IGV percentage will be added to the resulting amount according to the regulations issued on this matter.

11. PROVISIONS ABOUT THE INVOICE

11.1 Billed items are the following:

11.1.1 Drinking water and sewerage service.

11.1.2 Side service.

11.1.3 Another item authorized by SUNASS, the user, or stemming from an express legal provision.

11.1.4 General Sales Tax (IGV, in Spanish).

11.2 Billed concepts must be duly differentiated. The service should be detailed in the EPS Service Supply Regulations, as well as Article 80 of the new Complaint Response Procedural Guide approved by Superintendence Resolution N° 765-99/SUNASS.

11.3 The invoice for the drinking water and/or sewerage service supply will include, if it so corresponds, at least the following information:

- Company name, address, telephone and other EPS data.
 - Proof of payment Number
 - User name or company name.
 - User identification code.
 - Supplied services data:
 - Supplied services (drinking water and/or sewerage).
 - Number of use units according to category.
 - Supply schedule
 - Issuance data:
 - Invoice issuance date
 - Modality to determine the drinking water volume (difference between readings, reading difference average or consumption assignment).
 - Period corresponding to the drinking water determined volume.
 - Consumption in cubic meters (m3) according to the drinking water volume determination modality.
 - Last invoice payment day.
 - Meter data and reading:
 - Meter number
 - Current reading and reading date
 - Former reading and reading date
 - Reading difference
 - Tariff structure corresponding to categories to which considered use units belong.
- Amounts to pay:
- Amount for drinking water and sewerage service supply
 - Amount for side service supply
 - Amount for IGV
 - Rounding up adjustment
 - Amount for rounding up effect
 - Charge or deposit authorized by SUNASS, the user and/or express legal provision.
 - Unpaid balances from former months
 - Default interests calculated as from maturity dates.
 - Total to be paid.
- Messages:
- oGeneral: Recommendations to users about service use, information about the Authorized Collection Centers and conditions for closing the connection.
- oIndividual: Information about the invoice maturity date. Number of unpaid invoices and their amount; likely service cut-off date, if the case may be; service center corresponding to the user's residence zone, invoicing frequency.

11.4 Invoice Issuance per Property, Connection or Use Unit.

The invoice issuance may be done (i) per property or (ii) per connection. In the case of properties with several use units, invoices may be issued per each use unit following request by the Owners Board or similar organization.

11.5 Issuance Time

Drinking water and/or sewerage services invoice issuance will be done on a monthly basis after the service has been supplied. The periodicity of invoice due date will be previously defined by the EPS and communicated to users.

11.6 Invoice Delivery

11.6.1 Domicile and Term:

The EPS will deliver the invoice at the user's domicile no less than ten (10) calendar days before due payment.

11.6.2 Non-Delivery

When exceptionally and in a justified way the invoice is not delivered, the EPS will make it available to the user at the authorized office.

Non-delivery of the invoice does not suspend the user's obligation of paying for service supply on the date previously established by the EPS and known by the user.

11.6.3 Delivery and Payment

The facility granted users of paying in banks or authorized agencies does not exempt the EPS from its obligation of delivering the invoice at the user's domicile.

12.FINAL PROVISIONS

12.1 EPS companies should issue their invoices according to section 11 of the Guideline herein no later than January 1st, 2001.

12.2 The application of the Use Unit Classification Table established by the Guideline herein should start on January 1st, 2001 at the latest. Meanwhile, the EPS may continue using the current water use classification tables except specific corrections SUNASS may make in concrete cases.

12.3 The application of the guideline herein will be made taking into account Superintendence Resolution N° 640-99-SUNASS and Superintendence Resolution N°920-98-SUNASS.

12.4 EPS SEDAPAL will continue applying the tariff per volume for the sewerage service supply to users who have their own source. The following procedure is valid in this case: the volume used by said user will be previously determined through a meter installed at the source or through its capacity. Said volume will be applied a discharge factor of 0.80%. The result is a volume that will be considered as volume discharged to sewerage, which will be multiplied by the respective tariff to obtain the amount for the use of sewerage.

In case the user shows disconformities with the discharge factor, he/she may request its amendment to the EPS. To do so, it will submit a technical study to substantiate his/her petition. The study cost will be assumed by the applicant and approval corresponds to the EPS.

12.5 In cases when the connection has a meter and it is temporarily out of order, the EPS is obliged to install a new consumption meter in a term of no more than six months. During that term, the EPS may bill the average of at least six former valid reading differences or if not, the assignment of corresponding consumption. The meter reading will be monthly and the period between readings will be between 28 and 32 calendar days.

13 TRANSITORY PROVISIONS

As long as the “minimum consumption” invoicing system continues temporarily in effect, in the case of users with consumption meter whose measured consumption is less or equal to the minimum, the minimum consumption volume established by SUNASS when approving tariff structures of each one of the EPS will be used as VAF.

ANNEX 10

Use Unit Classification for the Drinking Water and Sewerage Service (CUU, in Spanish)

1. To classify use units to which service is supplied, the EPS must supply the criteria and procedures pointed out in the annex herein.
2. Use unit classification will be made per Class and category, according to service use unit code and as a function of the activity made in them.
3. The EPS will keep their use unit connection cadastre updated with information on activities performed and service conditions.
4. Use unit classification will be made according to the activities developed in each one of them. The classification encompasses the following classes and categories.

CUU	CLASS/CATEGORY
100	Residential class
101	Social category
102	Domestic category
200	Non-residential class
201	Commercial category
202	Industrial category
203	State and other categories

5. Use units that are regularly used as a house will be considered within the residential class. The residential class comprises two categories: the domestic category and the social category.

a) The social category includes use units inhabited by families who receive the drinking water and sewerage service outside their households, as a “collective service” as well as those in charge of social service institutions where abandoned persons are sheltered or where people who support society live. Tenements, alleys and closes supplied through a collective service source and/or public fountains are comprised in this category. Others included are asylums, hospices, shelters, daycare centers, orphanages, rehabilitation centers and other establishments managed by duly acknowledged social support institutions, including Mother Clubs, Soup-Kitchens and other similar institutions.

This category also includes churches of different creeds, parishes, monasteries, convents, boarding schools as well as the general Firefighter Corps Barracks.

b) The domestic category includes use units that are regularly used as family homes which have their own toilet inside the house.

6. The non-residential class includes use units which have a water and/or sewerage point, devoted to a certain economic activity considered in the International Standard Industrial Classification (ISIC) for all kinds of economic activities. The Non-Residential Class comprises the following categories: Commercial, Industrial and State and Others.

The Commercial Category includes those use units where goods are traded which appear in Section G of the ISIC or where services comprised in sections H, I, J, K, M, N, O of the ISIC are included except for Divisions 75 and 81 and Group 923 of said classification, as well as education and house service supply in charge of the State. Artisanal bakeries that sell other products as retail at the same time will be included within that Category.

The Industrial Category comprises use units where extraction, manufacturing and physical transformation of materials are developed and which are comprised in ISIC Sections A, B, C, D, E and F.

The State and others category includes use units aimed at the operation of Central Government, Regional Government, Local Government and other entities and agencies, as well as the operation of civil institutions with a social aim not classified within the other categories. This Category comprises ISIC sections L and Q, Division 91 and Group 923, including State education and health activities.

7. So as to correctly classify a certain use unit, a reference table is attached. It is organized according to the International Standard Industrial Classification (ISIC) for all economic activities in its third Revision. The company and user may refer to said classification. Any disagreement on the matter will be resolved by SUNASS within complaint procedures.
8. The user must inform EPS about the change of property use, same which should be verified by the EPS to change category. The EPS shall, in turn, regularly check if the referred use unit still keeps the category where it was classified. In case a different use is detected, the EPS will inform the user about the corresponding category change through a notification 30 days in advance.

REFERENCE TABLE TO CLASSIFY USE UNITS FOR THE DRINKING WATER AND SEWERAGE SERVICE

C.U.U DESCRIPTION 100 RESIDENTIAL CLASS

This class includes use units that are utilized as homes. The categories to be considered are: Social and Domestic.

C.U.U. DESCRIPTION

101 SOCIAL CATEGORY

This category includes residential users who are provided a collective service outside their homes and those buildings under the charge of social service institutions where low income people get shelter or which are the residence of institutions providing social support. This category includes the following:

Asylums, Shelters and Similar Institutions

They comprise buildings managed by social service institutions where low income people are sheltered.

1. Asylums and hospices.
2. Child Centers, Daycare Centers, Rehabilitation Centers and orphanages managed by institutions which protect minors.
3. Shelters and Homes managed by Youth and Adult Protection Institutions.

Tenements and the Like

Buildings with more than one household unit with common sanitary installations and supplied through a connection.

Churches, Parishes, Monasteries, Convents and Boarding Schools

Use units utilized as houses by religious orders.

General Voluntary Firefighter Corps Stations or Barracks

Public Source and/or Fountain

Drinking water connection on the street for the provisional supply of low income populations who still do not have drinking water household connections.

Social Aid Activities

It is applicable to mother clubs, Soup Kitchens and other institutions acknowledged by Ministry Resolution or competent authority which make part of social compensation programs on food, health, education and/or employment.

C.U.U. DESCRIPTION

102 DOMESTIC CATEGORY

It comprises use units utilized as homes. This category includes the following:

Homes

It comprises use units utilized as family homes.

Foreign Legations

These are use units utilized as homes by foreign diplomatic personnel accredited before the Foreign Affairs Ministry.

C.U.U. DESCRIPTION
200 NON-RESIDENTIAL CLASS

These are use units devoted to activities that differ from service to homes.

Categories to be considered are: Commercial, Industrial, State and Others, according to the International Standard Industrial Classification – ISIC REVISION 3.

C.U.U. DESCRIPTION
201 COMMERCIAL CATEGORY:

It is applicable to every use unit where goods are sold and purchased and services are supplied. This category considers the following activities:

Wholesale and Retail Trade and Others

Section G, division 50 to 52 of ISIC. This includes artisanal bakeries which additionally trade other products as retail. It also includes large markets, municipal markets, private markets and the like.

Hotels and Restaurants

Section H, division 55, ISIC.

Transportation, Storage and Communications

Section I: division 60 to 64, ISIC.

Financial Intermediation

Section J: division 65 to 67 of ISIC. Real Estate and Renting Activities: Section K: division 70 to 74, ISIC.

Teaching Activities (By private parties)

Section M: division 80, ISIC

Social and Health Services (by privates)

Section N: division 85: group 851 and 852, ISIC.

Other Community, Social and Personal Service Activities

Section O: division 90, 92 (Group 921, 922 and 924) and 93, ISIC

Electricity, Gas and Water Supply

Section E: division 40 and 41, ISIC.

Private Cemeteries

Other Shops and Services

C.U.U. DESCRIPTION
202 INDUSTRIAL CATEGORY

It includes use units that manufacture and/or chemically or physically transform materials and components into new perishable or non-perishable goods. The International Standard Industrial Classification – ISIC REVISION 3 will be used.

This category includes users with the following characteristics:

Agriculture, Cattle Raising, Hunting and Forestry

SECTION A: DIVISION 01 TO 02, ISIC

Fishing

SECTION B: DIVISION 05, ISIC

Manufacturing Industries

SECTION D: DIVISION 15 TO 37, ISIC

Construction

SECTION F: DIVISION 45, ISIC

Other Industrial Activities

C.U.U. DESCRIPTION
203 STATE AND OTHERS

Use units aimed at the operation of Central Government, Regional Government and Local Government entities and agencies are considered here, as well as the operation of civil institutions that pursue a social or community objective which are not classified within the social, domestic, commercial or industrial categories. This category considers users with the following characteristics:

Public Administration and Others

ISIC – REVISION 3 – SECTION I, DIVISION 75

It includes buildings and use units where Central Government, Regional Government and Local Government entities and agencies operate without taking into account state companies that develop commercial, industrial and service activities.

Social Rehabilitation Centers

Applied to buildings where people are locked-up by judicial order.

State Hospitals and Healthcare Centers

It comprises buildings aimed at supplying medical and hospitalization services by the State.

State Schools, Universities and Higher Education Entities

It comprises Learning Centers depending on the State, including national Nursery, Music and Other schools.

Libraries, Archives, Museums and Other Cultural Activities

ISIC REVISION 3, SECTION O, DIVISION 92, GROUP 923

This comprises buildings aimed at libraries and archives, museums, botanic and zoological gardens and national parks.

Parks and Gardens

This is applicable to public green areas, including berms.

Cemeteries

This comprises cemeteries, cemetery parks, crematoria and alike managed by the municipality and charities.

Other Premises

It will include other buildings with national, regional or local government representative offices.

Others

This includes use units utilized by non-profit civil organizations.

Association Activities

ISIC REVISION 3, SECTION O, DIVISION 91

Buildings which are the headquarters of entities incepted for a non-profit specific objective of common interest for their associates. These comprise sports associations (offices and meeting places), NGOs and Non-Profit Cultural Associations, duly acknowledged by the National Culture Institute.

Extra-Territorial Organizations and Institutions

These are buildings where foreign diplomatic legations exercise jurisdiction, comprising only the administrative offices. Also considered are buildings which house international entities, included in ISIC REVISION 3, SECTION Q, DIVISION 99.

BOARD RESOLUTION N° 005-2003-SUNASS-CD

Published: April 24th, 2003

Lima, April 11th, 2003

SCOPE:

Drafts for "Regulation on Commercial Complaints by Sanitation Service Users", "Drinking Water Meter Contrasting Guidelines," and "Amendment to the Guideline on Amount to Bill and Invoice Sanitation Service Payment;"

WHEREAS:

Through Superintendence Resolution N° 1179-99-SUNASS published on December 25th, 1999, the "Guideline on Amount to Bill and Invoice for Drinking Water and Sanitary Sewerage Service" was approved;"

Superintendence Resolution N° 244-2000-SUNASS, amended by Board of Directors Resolution N° 059-2001-SUNASS-CD -published on November 24th, 2000 and October 31st, 2001, respectively- specific provisions were issued concerning sanitation service invoicing in consumption micro-metering conditions;

Through Board of Directors Resolutions N° 033 and 034-2001-SUNASS-CD, the "Regulation on Commercial Complaints by Sanitation Service Users" and the "Drinking Water Meter Contrasting Guideline," were approved and published on July 9th, 2001;

The evaluation of these regulations, which currently rule service invoicing and complaint procedure, has shown they need amendment to offer more guarantees to sanitation service users.

Articles 3° of the Framework Law on Private Investment and Utilities Regulation Organs – Law N° 27332 published on July 29th, 2000, amended by Law N° 27631 published on January 16th, 2002- and 20° of the SUNASS General Regulation – approved by Supreme Decree N° 017-2001-PCM published on February 21st, 2001- authorized this Superintendence Board of Directors to issue regulations within its competence.

Board of Directors Resolution N° 055-2002-SUNASS-CD, which approved the aforementioned drafts, was published on "El Peruano", the official gazette, on October 13th, 2002 pursuant to Article 23 of the SUNASS General Regulation, in order to receive comments from the interested parties,.

Once the comments are received and the definitive texts are prepared, it is necessary to approve the new regulations which will rule the sanitation service user complaint procedures and the drinking water meter contrasting tests. It is also necessary to amend the regulation that rules the invoicing process for the referred services.

It is necessary to give Sanitation Provider Enterprises an appropriate deadline so they can adopt the necessary measures for adequate implementation and dissemination of the new regulations that will rule the complaint procedures and the drinking water meter contrasting tests.

So as to achieve an orderly transition, it is necessary to establish that the current complaint procedures and those starting before the new complaint regulation comes into effect will continue to be ruled by the regulation that was current when the complaint was filed.

Regarding contrasting tests, they will be ruled by the contrasting guideline which was current when the complaint was filed.

On its March 28th session, the Board of Directors resolves;

THEREFORE:

Article 1°. To approve the "Regulation on Commercial Complaints by Sanitation Service Users", which makes part of the resolution herein as an annex.

Article 2. To approve the "Drinking Water Meter Contrasting Guideline," which makes part of the resolution herein as an Annex.

Article 3. To include subsection 6.6 to the "Guideline on the Amount to be Billed and Invoices," approved by Superintendence Resolution N° 1179-99-SUNASS, as follows:

"6.6 Invoicing based upon differences in consumption meter readings will take into account the following:"

6.6.1 The Sanitation Provider Enterprise that installs consumption meters in the already existing drinking water household connections shall inform the user in writing together with the invoice, from 30 to 60 days in advance, about the approximate date for meter installation, delivering an information sheet on invoicing based upon reading difference which minimum content will be defined by SUNASS.

6.6.2 In case of connections that have been billed through consumption assignment and where a meter is installed, invoicing by or reading difference will be gradually applied as follows:

*i) On the first month, the volume to be billed will correspond to the lesser value between comparing the reading difference and consumption assignment.
ii) On the second month, the volume to be billed will correspond to the lesser value between comparing the reading difference and one and a half times the consumption assignment.
iii) As from the third month, the volume to be billed will correspond to the reading difference. Notwithstanding the abovementioned, the Sanitation Provider Enterprise may establish another graded scheme provided it is more favorable to the user, which will be reported to the user and SUNASS in writing.*

6.6.3 In case there are new domicile connections installed with their respective consumption meters, invoicing based in reading difference will be made as from the first month. The Sanitation Provider Enterprise will also provide these users with the information sheet referred to in number 6.6.1 when they request a connection.

6.6.4, The meter reading will be monthly and the period between readings will not be less than 28 nor more than 32 calendar days in order to bill consumption. This reading will be considered as a valid reading difference. If, exceptionally, said period is longer, the volume to be billed in said month will be restricted to the part that is proportional to 30 calendar days, and the difference should be included in the following invoicing, by applying the first range tariff which was current in the former month.

6.6.5 Once the consumption meter is installed, it can only be removed –following communication in writing to the user at least two days in advance- for three reasons: i) for maintenance, ii) for lab contrasting, and iii) for replacement by another meter.

In the first case the meter will be reinstalled in the maximum term of five working days as from the date of its removal. In the second case, it will be reinstalled on the next working day after contrasting at the latest. In the third case, the Sanitation Provider Enterprise shall install the new meter in a term no longer than three months as from the date of its removal.

If the Sanitation Provider Enterprise does not reinstall the meter in the aforementioned terms, it will be sanctioned according to current regulations.

As long as the meter is not reinstalled, the Sanitation Provider Enterprise will bill the lesser volume resulting from comparing the applicable consumption assignment and the consumption historical average, understood as the average of the last six valid reading differences or the existing ones.

6.6.6 When, as a consequence of a complaint, average invoicing is provided, it will not include the month or months referred to the complaint.

6.6.7 In case, due to an initiative by the Sanitation Provider Enterprise, a deliberate alteration of the consumption metering mechanism has been certified, the Sanitation Provider Enterprise may remove the meter and bill the user the consumption historical average for a maximum of six months after the occurrence was confirmed. Once said term elapses, the Sanitation Provider Enterprise will install a new consumption meter.

The application of what is provided in this subsection will agree to stipulations in the Drinking Water Meter Contrasting Guideline in the section referred to the actions taken by initiative of the Sanitation Provider Enterprise.

6.6.8 The Sanitation Provider Enterprises are obliged to permanently control the quality of invoicing based upon reading difference, detecting those which are atypical so as to rule out deficiencies in reading or the presence of factors distorting consumption recording, such as service interruptions in the area, in which case said difference will be left aside and the historical consumption average will be billed.

Atypical invoicing is that which exceeds the user's historical consumption average by more than 100%.

Sanitation Provider Enterprises will keep a record of atypical invoicing, as well as of actions taken in connection to them so they can be tracked."

Article 4. The following provisions are to be repealed:

- a) The Regulation on Commercial Complaints by Users of Sanitation Services approved by Board of Directors Resolution N° 033-2001-SUNASS-CD.
- b) The Drinking Water Meter Contrasting Guideline approved by Board of Directors Resolution N° 034-2001-SUNASS-CD.
- c) Subsection 12.5 of the Guideline on Amount to be Billed and Invoices Billed for Sanitation Services approved by Superintendence Resolution N° 1179-99-SUNASS.
- d) Articles 2°, 4° and 5° of Superintendence Resolution N° 244-2000-SUNASS amended by Board of Directors Resolution N° 059-2001-SUNASS-CD

Article 5. Provide for the publication of the resolution herein, its annexes and the corresponding recitals in "El Peruano", the official gazette, and in SUNASS's website (www.sunass.gob.pe) so that the text is permanently available for its stake holders.

Article 6. Provide for the coming into effect of the regulations, amendments and repeals, approved in the resolution herein sixty (60) calendar days as from their publication.

Article 7. Establish that complaint procedures started before the "Regulation on Commercial Complaints by Users of Sanitation Services" comes into effect as approved in the Resolution herein will be ruled until they are completed by the regulation approved through Board of Directors Resolution N° 033-2001-SUNASS-CD.

Article 8. Establish that contrasting tests will be ruled by the contrasting guideline which was current when the complaint was filed.

To be recorded, published and applied.

SERGIO SALINAS RIVAS
Chairman of the Board

BOARD OF DIRECTORS RESOLUTION N° 023-2003-SUNASS-CD

Publicada: 07 de setiembre de 2003

Amendment to the Guideline on Amount to be Billed and Invoices for Sanitation Services

Lima, August 20th, 2003

SCOPE:

The draft of the amendment to the "Guideline on Amount to be Billed and Invoices for Drinking Water and Sanitation Services," submitted by the Policies and Regulations Division;

WHEREAS:

The "Guideline on Amount to be Billed and Invoices for Drinking Water and Sanitation Services," approved by Superintendence Resolution N° 1179-99-SUNASS, and amended by Board of Directors Resolution N° 005-2003-SUNASS-CD, establishes the procedure that Sanitation Provider Enterprises shall follow to determine the amount to be billed to their users for supply services;

For better application, it is necessary and urgent to take some provisions that will allow clarifying the application of said Guideline.

Pursuant to Articles 5 and 23 of the SUNASS General Regulation, approved by Supreme Decree N° 017-2001-PCM, the Board of Directors, in its August 15th, 2003 session.

RESOLVES:

Article 1. Amend the Guidelines on Amount to be Billed and Invoices for Sanitation Services approved by Superintendence Resolution N° 1179-99-SUNASS and amended through Board of Directors Resolution N° 005-2003-SUNASS-CD with the following text:

"6.1.6 Determination of the volume to be billed will be made through reading difference of the consumption meter. If not, it will be billed according to the following order: a) the average of the last six valid reading differences or, if there are less, those existing, and b) consumption assignment."

"6.6.7 In case the consumption meter is stolen or its recording mechanisms are tampered with, the Sanitation Provider Enterprise will replace the meter in a term no longer than six months as from confirmation of the occurrence. In said period, the Sanitation Provider Enterprise will bill according to the average of the last six valid reading differences or if there were less, those existing. Once said term elapses without meter replacement, the rule established in the last paragraph of subsection 6.6.5 will apply."

Confirmation of metering mechanism tampering will be made according to stipulations in the Drinking Water Meter Contrasting Guideline in the section referred to contrasting by initiative of the Sanitation Provider Enterprise.

The application of this article will be made notwithstanding any actions that can be adopted by the Sanitation Provider Enterprise so it is reimbursed for the cost of repairing or replacing the meter in addition to the corresponding administrative and criminal accountability."

"6.6.8 Sanitation Provider Enterprises are obliged to carry out a permanent quality control of invoicing based upon reading difference, detecting atypical ones so as to rule out the reading deficiencies or the presence of factors that distort consumption recording. Atypical reading difference is that which exceeds the user's historical consumption average by more than 100%. In the aforementioned cases of atypical reading differences, the following will be applied:

- a) In case reading errors are detected, they will be corrected before the respective bill is issued.*
- b) In case the presence of distorting factors regarding the recording of consumption is attributable to the Sanitation Provider Enterprise responsibility, the reading difference will be left aside and the historical consumption average will be billed.*

Sanitation Provider Enterprises will keep record of atypical invoicing, as well as of actions taken in connection with it, so that it can be controlled."

Article 2. In the case of meters removed from household connections before June 23rd, 2003, establish that Sanitation Provider Enterprises may continue invoicing for said connections by applying the historical consumption average as to December 23rd, 2003.

As from that date, in case a new meter is not installed, the rule established in the last paragraph of subsection 6.6.5 of the Guideline on Amount to be Billed and Invoices for Sanitation Services will be applied.

To be recorded, notified and applied.

SERGIO SALINAS RIVAS
Chairman of the Board

Glossary

CADASTRE DYNAMIC UPDATING

■ Procedure permitting to obtain permanently updated cadastres through pre-identification by invoice distributors.

IT APPLICATION

■ IT software design to allow automatic processing and reporting of a group of specific instructions in a quick and certain way.

DATABASE

■ Data group structured according to a specific design which is processed by IT software.

EPS CLIENTS CADASTRE

■ Descriptive list of a certain population or graphic statistics of properties, whether they are houses, lots, etc., which contain actual information on the current or future client market.

TARIFF CATEGORY

■ It is the type of tariff assigned to a property according to the use or activity given to the property and to water. The cost for the water cubic meter depends on the category assigned to the property.

CADASTRE CODE

■ It is the single identification of a property (client or not client) within the EPS jurisdiction.

CLANDESTINE CONNECTION

■ Connection made without company knowledge and which uses EPS's services.

WATER HOUSEHOLD CONNECTION

■ Set of accessories and pipes that go from the public network to the user's meter box and which allow supplying a property with drinking water.

SEWERAGE HOUSEHOLD CONNECTION

■ Set of accessories and pipes that go from the public network to the user's meter box which allow evacuating waste water from the property.

ASSIGNED CONSUMPTION

■ It is the amount of water cubic meters the EPS monthly assigns as estimated consumption to a property that has no meter.

OFFICE EVALUATOR

SPREADSHEET

CADASTRE INSPECTOR

MICROMETERING

MICROMETER

NOTIFICATION

PROPERTY

INVOICE

INVOICE DISTRIBUTOR

SUPPLIED SERVICES

SERVICE TYPE

■ An EPS employee in charge of following-up the cadastre dynamic updating process through an IT tool.

■ IT tool allowing processing of a large amount of information and permitting to automate some operations and tasks but not the entire process.

■ EPS employee who performs inspections in properties about cadastre issues.

■ Domicile metering
Consumption metering
Set of actions aimed at quantifying and recording Drinking water volumes supplied to household connections and entering the property by means of a Micrometer.

■ Meter = hydrometer
Mechanic or magnetic equipment that does Micro metering.

■ A document, through which the cadastre inspector informs users about the reason for the inspection, announces the cadastre change and justifies said decision.

■ Realty plot, estate, property, land or possession.

■ Invoice issued by the EPS to each client for supply services.

■ EPS employees who monthly distribute invoices.

■ Services supplied by the EPS to their clients according to a contract.

■ It is the set of cadastre characteristics concerning the service the EPS provides the client with:

1. Drinking water and sewerage
2. Only drinking water
3. Only sewerage

USE UNIT

■ Section (physical space) that is used independently with its own drinking water and/or sewerage point.

Bibliography

SUNASS

Resolución de Superintendencia N° 1179-99-SUNASS "Directiva Importe a Facturar y Comprobantes de Pago de los Servicios de Agua Potable y Alcantarillado (Superintendence Resolution N° 1179-99-SUNASS "Guideline on Amount to be Billed and Invoices for Drinking Water and Sewerage Services,") December 1999

PROAPAC GTZ

Catastro de Clientes, Sistema Modular de Capacitación (Client Cadastre, Training Modular System), La Paz, July 2003.

Acronyms and Initials

"

Av.

Cáp.

COM

COTEC

DOM

EPS

EPSEL

EST

Fig.

Etc.

IND

GTZ

GmbH

Loc.

M3

Mz.

No

Not.

ONGD

NGDO

Pág.

Párr.

PROAGUA

Prov.

PVC

Inches

Avenue

Chapter

Commercial Tariff

Brüning Technical, Cultural and Environmental

Cooperation

Domestic Tariff

Sanitation Provider Enterprises

Lambayeque Sanitation Provider Enterprise

State Tariff

Figure

Etcetera

Industrial Tariff

German Technical Cooperation

German Technical Cooperation

Locality

Cubic Meter(s)

Block of houses

Number

Notification

Non Governmental Development Organization

Page

Paragraph

Drinking Water and Sanitation Program

Province

Polivinilo Cloruro

<u>S/.</u>	<u>Nuevos Soles (Peruvian Currency)</u>
<u>Sect.</u>	<u>(Commercial) Sector</u>
<u>Serv.</u>	<u>(Water and/or Sanitation) Service</u>
<u>SOC</u>	<u>Social Tariff</u>
<u>SUNASS</u>	<u>National Sanitation Service Superintendence</u>
<u>Vº Bº</u>	<u>Approved</u>

VMCS – DNS

Peru's sanitation agencies are under the Ministry for Housing, Construction and Sanitation (MVCS is the Spanish acronym). This is the governing state agency for sanitation service issues and it operates through the Vice-Ministry for Construction and Sanitation (VMCS in Spanish) and the National Sanitation Directorate (DNS). VMCS is the government agency charged with designing and adopting general sanitation policies pursuant to the guidelines set forth by the Minister. DNS is the line body charged with preparing the policy guidelines, plans, programs and regulations concerning basic sanitation services.

In addition, there are other bodies and organizations that also perform functions indirectly related to this mandate, such as the Ministry of Economy and Finance, the National Superintendence of Sanitation Services (SUNASS), the Environmental Health General Directorate (DIGESA), the local and regional governments, grassroots organizations, the water and sanitation utilities and several international cooperation agencies.

GENERAL OBJECTIVE

To contribute to expanding the coverage and improving the quality and sustainability of drinking water, sewerage, waste water treatment and excreta disposal services.

VMCS is the governing authority for sanitation policy and as such it has set itself the objective of expanding coverage, assuring system sustainability and improving the quality of sanitation services by accomplishing economic and business efficiency and protecting the environment and people's health. To accomplish such general objective, it has identified the following specific goals:

SPECIFIC GOALS

1. Modernizing the sanitation industry's management.
2. Enhancing service sustainability.
3. Improving service quality.
4. Making service suppliers financially viable.
5. Expanding access to services.

STRATEGIC GUIDELINES

- To improve the industry's legal and institutional framework.
- To strengthen the providers' capacities to accomplish effective decentralization.
- To make the best possible use of the sector's (DNS-PARSSA-PRONASAR, and other agencies and organizations) internal capacities to expand local capacities and reach decentralization goals.
- To improve the service suppliers' management capacities by, among other tools, introducing management contract schemes in these utilities.
- To funnel investment resources through the Sanitation Social Investment Fund – INVERSAN.
- To involve the private sector in this industry's management and investment projects.

GTZ/PROAGUA

Technical cooperation agreement signed between Germany and Peru.	Political agreements governing the support provided by German Technical Cooperation.
Technical Cooperation Agency: GTZ	Delivery of technical assistance, advice and training.
Financial Cooperation Agency: KfW	Investment financing for water and sanitation infrastructure
Counterparty: VMCS-DNS	General coordination of programs supported by KfW and GTZ.
Implementing bodies: 12 sanitation services supplier utilities (EPS)	Stewards for individual project implementation
Life of present phase: 2008 – 2011	

GTZ/PROAGUA OBJECTIVE

Contributing to ensure sustainability of water and sanitation services in selected cities pursuant to this industry's policy framework.

GOALS SUPPORTED BY GTZ/PROAGUA

1. Increasing drinking water and sanitation service coverage.
2. Increasing drinking water and sanitation service quality.
3. Enhancing service delivery efficiencies.

COMPONENTS

1. Improving framework conditions in the sanitation sector.

- Improving governance in water and sanitation services.
- Fostering economic incentives for sustainable sanitation.

2. Water and Sanitation Training Program

- Strengthening this industry's training structures.
- Improving management skills and technical knowledge for industry staff.

3. Rapid Impact Measures Program (PMRI in Spanish)

- Improving the EPSs' economic and financial standing.
- Improving the coverage, quality and continuity of drinking water services.

ANEPSSA

The National Association of Sanitation Service Provider Entities (ANEPSSA PERU is the Spanish acronym) is a non-profit civil society organization governed by Peru's Civil Code and its own bylaws. It brings together all recognized sanitation service provider entities (EPS) of Peru. Its main objective is to strengthen the sanitation industry by improving EPS's management for the benefit of Peruvians.

MISSION

To promote excellence in management of sanitation services delivered by its members through training, coordination, cooperation and experience and knowledge exchanges and thereby contribute to improving the people's quality of living.

VISION

The Association will be recognized as sanitation industry's key actors and related institutions as an efficient and effective organization focused on meeting its associates and the population's needs.

INSTITUTIONAL VALUES

- Team work
- Transparent management
- Continued improvement of service quality
- Equity and solidarity
- Contributions from its members
- Consistent management and acceptance of regulations

STRATEGIC OBJECTIVES

- Improving the Association's management
- Improving coordination with government agencies with an emphasis on regulatory and standardization issues
- Increasing its membership
- Improving relations between its members and users
- Providing training and technical skills to its members
- Promoting experience and knowledge exchanges among its members and with sister organizations

ACTION LINES

- Proposal of and participation in regulatory improvement efforts
- Support to human resource and management development within EPSs
- Strengthening the Association's management unit

SANITATION PROVIDER ENTERPRISES' COMMERCIAL MANAGEMENT SERIES

- MODULE N°1 CADASTRAL DYNAMIC UPDATING
- MODULE N°2 MASSIVE CLANDESTINE USER REGULARIZATION
- MODULE N°3 SALE OF NEW CONNECTIONS
- MODULE N°4 PAST-DUE COLLECTION AND EFFECTIVE CUT-OFF MANAGEMENT
- MODULE N°5 TOOLS FOR OPTIMIZING METERED CONSUMPTION

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