

# SSP FOR HUASCAR URBAN PARK

## LIMA, PERU

### CASE STUDY

#### General data

Location	In Villa El Salvador District in South of Lima.
Scope: SSP boundaries and focus sanitation activities	<ul style="list-style-type: none"> <li>Boundaries of the park (approximately 67 ha)</li> <li>Uptake of municipal wastewaters of the district, treatment and use in the irrigation of green areas of the park</li> </ul>
Scale of SSP system	9000 m <sup>3</sup> /day
SSP objectives	Facilitate the assessment and management of the impacts on the health of the direct use of treated sewage for irrigation of green areas of the park
SSP teams	<ul style="list-style-type: none"> <li>SERPAR – Park Service of Lima, park administration</li> <li>SEDAPAL – Water and Sanitation Enterprise of Lima, operator of wastewater treatment plant</li> <li>DIGESA – Environmental Health Division, Ministry of Health (MINSA), which monitored the water, soil and grass</li> <li>MVES – Municipality of Villa El Salvador, which represented the local community</li> </ul>
Key stakeholders	Ensure adequate treatment to maintain the quality of the irrigation water that do not affect the health of the users
SSP timelines	2 years
Lead organizations and supporting agencies	<ul style="list-style-type: none"> <li>SERPAR – Park Service of Lima, park administration</li> <li>DIGESA – Environmental Health Division</li> </ul>



Public gardening in Huascar park.

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Huascar Wastewater treatment plant.

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## Pertinent context

This system was 11 years old and the SSP was performed to validate the WHO PSS Manual.

The treatment plant major process elements consist of:

- Pre-treatment system:
  - A medium grit chamber .
  - Two sand traps.
  - One fine grit chamber.
- Secondary treatment system:
  - One covered anaerobic lagoon.
  - One complete mix aerated lagoon.
  - Three partial mix aerated lagoons.
  - Two polishing lagoons.
  - Two settler tanks.
- Disinfection system: Chlorination chamber.
- Sludge drying system:
  - Sludge pumping chamber.
  - Drying beds

## Key identified risks

A selection of some of the high risks were associated with liquid wastes:

Sanitation step	Hazard and exposure pathway	Existing controls
<b>In the treatment plant</b>		
Spill of raw sewage in the pre-treatment	Contact with solids and proliferation of vectors (flies)	Collection of solid residue in the automatized grille chambers Gloves and boots
Increased of the pathogen load of the effluent	Contact of visitors of the park with irrigated contaminated water	Periodic collection of sludge from the lagoon in order to maintain effluent quality
Emission of gases with unpleasant smells	aerosol and odours to neighbouring communities	Suction of air encapsulated in the plastic cover of the treatment unit, and treatment in a biofilter to eliminate odours
Excessive accumulation of sludge with parasites	Contact with solids and proliferation of vectors (flies)	Transfer of sludge using a sludge pump to the drying beds for dehydration and final disposal of the dry sludge in a special sanitary landfill
<b>In the park</b>		
Deterioration of food consumed by workers and visitors	Episodes of disease gastric and enteric	Maintenance of equipment for food in cold storage Supervision of the quality of the food offered
Contamination of the grass by irrigation with low quality water	Inadvertent contact (hands, feet, moth) of visitors with parasites	Permanent control of the quality of the irrigation water. Suspension of irrigation until the treated water quality improves. Prohibition of access to the public in areas contaminated by a week.
Excessive accumulation of waste solids generated in the park	Proliferation of vectors (flies) and contamination of food consumed by workers and visitors	Regular solid waste pick up, daily spraying and periodic fumigation





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## Key outcomes and benefits

Proper treatment can assure water with the quality required for irrigation of recreational areas used by the public and workers, reducing the risk of disease from the users.

SSP ensure that wastewater can be used safely for irrigation of other green areas of the city.

SSP allows management of efficacy of c risk control s and supervision by health authorities.

## Vision for scaling and next steps

The SSP can be applied to other similar cases, It is therefore expected that the numerous existing cases and new formulated include a SSP in its management.

In 2015 there was a regional meeting to present the SSP to the authorities of 16 regional countries. In 2016 it is planned to commence activities for the promotion and training of several Latin American countries.

## Enabling policy environment linkages and implications

It is expected that this instrument be incorporated into national legal standards in order to all cases of reuse wastewater apply it to your situation.



#### **MORE INFORMATION/REFERENCES**

- SSP manual Example 1.7 and 6.3
- OPS, 2013-1. Plan de Seguridad en Saneamiento para el Estudio de Caso del Parque Huáscar, como parte del Proyecto Prueba del Manual de Planes de Seguridad de Saneamiento en Uso de Aguas Residuales en Lima, Perú. 100 pp. Organización Panamericana de la Salud, Organización Mundial de la Salud, Lima.
- OPS. 2013-2. Manual de Planificación de la Seguridad del Saneamiento: Guía para la gestión de riesgos en el uso seguro de aguas residuales domésticas en América Latina. Equipo Técnico Regional de Agua y Saneamiento (ETRAS), Organización Panamericana de la Salud (OP), Organización Mundial de la Salud (OMS). Lima.
- OPS. 2015. Informe de la Reunión de Expertos para establecer estrategias de adecuación y difusión en las américas del manual de planes de seguridad en saneamiento aplicados al uso de las aguas residuales. Equipo Técnico Regional de Agua y Saneamiento (ETRAS), Organización Panamericana de la Salud (OP), Organización Mundial de la Salud (OMS). Lima.