



CleanWater
C O A L I T I O N

*Solutions for
Clean Water
Management*

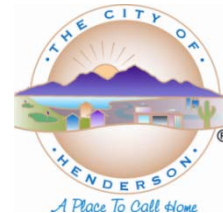
**July 15, 2009 update to
the Lake Mead Water Quality Forum**

Selenium Management Plan

Component of the Boulder Basin Adaptive Management Plan

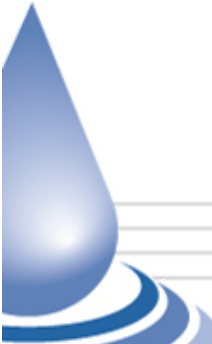


**Clark County
Water Reclamation
DISTRICT**



Background

- Selenium is a mineral in southern Nevada soil that is carried by shallow groundwater into drainage channels flowing into the Las Vegas Wash
- High selenium concentrations are a risk to an ecosystem by bio-accumulating in wildlife tissue
- Treated effluent in Las Vegas Wash has diluted the selenium from groundwater sources for decades



SCOP EIS Records of Decision

- Reduction of Las Vegas Wash flow would result in less dilution of non-effluent parameters such as selenium
- CWC to develop a Selenium Management Plan in coordination with USFWS by June 2009
 - Protect Razorback Suckers in Las Vegas Bay
 - Meet Federal and State regulations (5 µg/L in Las Vegas Wash)
- CWC to work with federal, state and local stakeholders to implement the plan



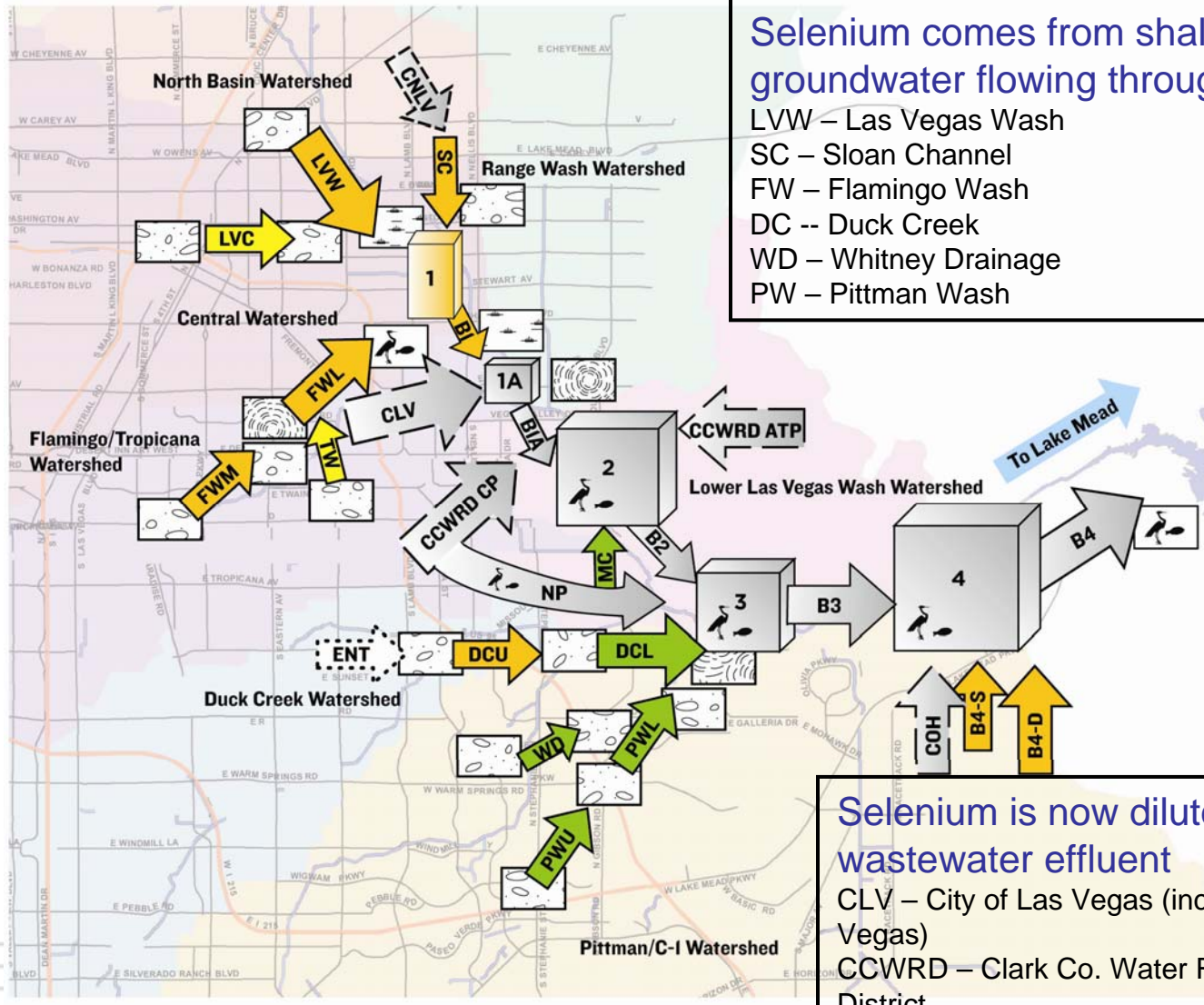
Draft Selenium Management Plan Completed on Time



BBAMP Selenium Management TAT

- Clean Water Coalition (CWC)
- City of North Las Vegas (CNLV)
- City of Henderson (COH)
- City of Las Vegas (CLV)
- Southern Nevada Water Authority (SNWA)
- Clark County Water Reclamation District (CCWRD)
- Clark County Regional Flood Control District (CCRFCD)
- Clark County Parks and Recreation Department
- United States Fish and Wildlife Service (USFWS)
- Nevada Division of Environmental Protection (NDEP)
- Nevada Department of Wildlife (NDOW)

Las Vegas Wash Watershed Today



Selenium comes from shallow groundwater flowing through tributaries

- LWV – Las Vegas Wash
- SC – Sloan Channel
- FW – Flamingo Wash
- DC -- Duck Creek
- WD – Whitney Drainage
- PW – Pittman Wash

Selenium is now diluted by wastewater effluent

- CLV – City of Las Vegas (includes North Las Vegas)
- CCWRD – Clark Co. Water Reclamation District
- COH– City of Henderson

Stages of the Plan

(Year)

(2009 – 2014)

No Action

- Until SCOP in operation
- Continue monitoring

(2015 – 2018)

Stage 1

- SCOP in operation
- Dilution by 85 – 105 mgd effluent to Wash
- Monitoring
 - Water
 - Sediments
 - Biota

(2018 – 2023)

Stage 2

- Divert dry weather flow to CCWRD or CLV sanitary sewer and plant
- Flamingo Wash
- Monson Channel
- 65 - 95 mgd of effluent to Wash

(2024 +)

Stage 3

- Divert more dry weather flow to CCWRD sanitary sewer and plant
- Duck Creek
- Pittman Wash
- 30 – 65 mgd of effluent to Wash

Costs

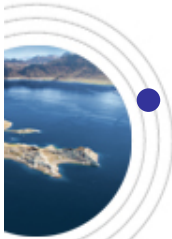
Stage	Project	Approximate Flow Diverted (mgd)	Estimated Capital Cost (\$1,000)	Estimated Annual O&M And Treatment Costs (\$1,000)
Stage 1	Flow reduction and monitoring	0	0	Continued Monitoring
Stage 2	Monson Channel	1	700	500
Stage 2	Flamingo Wash	5	700	2,000
Stage 3	Duck Creek	6	4,900	2,000
Stage 3	Pittman Wash divider	3	2,100	1,000

Regional Benefits

- Maximizing effluent to SCOP
 - Flexible management of Lake Mead water quality
 - Protect Las Vegas Wash and Bay
 - Hydropower generation
- Tributary diversions address non-point pollutants
 - Bacteria
 - Oil and grease
 - Metals
 - Phosphorus
- Regional benefits require development of an equitable cost sharing arrangement

BBAMP Core Management Team Action 6/3/09

- Accepted the Selenium Management Plan as a draft that meets EIS requirements
- Advised the CWC to complete the plan by including implementation factors such as
 - Policies
 - Financial
 - Operation
 - Action triggers
- Requested that CWC report progress to the CMT semi-annually
- Directed TATs to address the bioavailability of Selenium with the SCOP discharge





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**Clark County
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*The "Clean
Water Team"*



A Place To Call Home

