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# 2013 ANNUAL RECLAMATION AND REUSE ACTIVITIES REPORT

CITY OF ELGIN, OR



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*April 2014*

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## PART 1: GENERAL INFORMATION

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The City of Elgin owns and operates a recycled wastewater land application site. The site is approximately 60.75 acres of cultivated alfalfa hay, while the remaining areas are buffer zones, access roads, and structures. The cultivated area is divided into two fields that are irrigated by center pivots; the North Field is 22.5 acres, and the South Field 38.25 acres. The Chandler Ranch of the Grande Ronde Valley leases the property from the City for agricultural purposes.

The land application site is operated under the supervision of the Oregon Department of Environmental Quality (ODEQ). ODEQ issued NPDES (Permit No. 101606) to the City of Elgin for the operation of the site. The Permit has an effective date from November 2004 through October 2009. The purpose of this report is to comply with Section B, Part 3 of the Permit that states the following:

*b. By no later than April 2 of each year, the permittee shall submit to the Department an annual report describing the effectiveness of the reclaimed water system to comply with the approved reclaimed water use plan, the rules of Division 55, and the limitations and conditions of this permit applicable to reuse of reclaimed water.*

Information contained within this Report was collected by the City of Elgin and summarized by J-U-B Engineers, Inc. This Report has been organized in a similar order and format as past Reclamation and Reuse Activities Reports in accordance with ODEQ guidance.

## PART 2: SITE MONITORING AND LOADING

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Sampling and monitoring for the irrigation reuse site were performed in accordance with requirements found in Section B of the Permit. Laboratory results for various sampling and monitoring requirements were included in monthly DMR's, 2013 .

The annual hydraulic loading rate for the site was 6.7 inches/acre for the North Field and 3.2 inches/acre for the South Field. **Exhibit 2.1** provides a summary of the hydraulic loading on the site. The annual total nitrogen loading rate for the site was 11.7 lbs-N/acre for the North Field and 5.6 lbs-N/acre for the South Field. **Exhibit 2.2** provides a summary of the total nitrogen loading on the site. Daily irrigation data forms for each month during the irrigation season are available upon request. No supplemental irrigation or fertilizers were used during the 2013 irrigation season.

## EXHIBIT 2.1 – HYDRAULIC LOADING RATES

Month	North Field			South Field		
	Flow (MG)	Area (acres)	Load (in/acre)	Flow (MG)	Area (acres)	Load (in/acre)
June	0.0	22.5	0.0	0.0	38.25	0.0
July	1.43	22.5	2.3	2.27	38.25	2.2
August	0.671	22.5	1.1	.248	38.25	0.2
September	1.99	22.5	3.3	.831	38.25	0.8
October	0.0	22.5	0.0	0.0	38.25	0.0
<b>Total</b>			<b>6.7</b>			<b>3.2</b>

## EXHIBIT 2.2 – TOTAL NITROGEN LOADING<sup>A</sup>

Month	North Field (lbs-N/Acre)	South Field (lbs-N/Acre)
June	0	0
July	4.1	3.8
August	1.9	0.4
September	5.7	1.4
October	0	0
<b>Total</b>	<b>11.7</b>	<b>5.6</b>

<sup>A</sup> Loading based on single Nitrates sample collected on.

## PART 3: CROP HARVEST

Crop harvest information for the site is summarized in **Exhibit 3.1**.

### EXHIBIT 3.1 – CROP HARVEST SUMMARY

Cutting	\$/Ton	Total Harvest		City Share of Harvest	
		Tons	\$ Value	Tons	\$ Value
1st - Grass	\$150.00	15.33	\$2299.50	5.11	\$766.50
2nd- Alfalfa	\$150.00	73.24	\$10986.00	24.41	\$3661.50
3rd - Alfalfa	\$150.00	0	0	0	0
<b>Total</b>		<b>88.57</b>	<b>\$13285.50</b>	<b>29.52</b>	<b>\$4428.00</b>

## PART 4: COMPLIANCE

During the 2013 irrigation season, no equipment failures or system upsets occurred that resulted in an emergency discharge to unauthorized areas. No known violations to Oregon Reuse Rules occurred during the 2013 irrigation season.

## **PART 5: FORECAST FOR 2013 RECLAIMED SITE**

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### **5.1 QUALITY AND QUANTITY**

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The quality of reclaimed effluent in 2014 is not anticipated to differ from 2013. Residential or industrial growth is not expected in the near future. The quality of effluent in 2014 may be slightly higher due to ongoing treatment facilities optimization and increased system operation and maintenance focus by the City.

### **5.2 WASTEWATER TREATMENT PROCESS**

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The City recently completed the Phase I - Wastewater Treatment Plant Upgrades Project in December 2012, which included the construction of variable level hydraulic transfer structures between lagoons and surface aerators in lagoons #1 and #2. The project was completed to provide City operators with the ability consistently meet the Permit conditions and limits.

No changes to the recycled water system were made in 2013 and no changes are anticipated for 2014.

### **5.3 SITE LOADING AND RESTING SCHEDULES**

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It is anticipated that the irrigation site loadings and resting schedules in 2014 will not change significantly from 2013.

### **5.4 OPERATION AND MAINTENANCE**

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Normal routine operation and maintenance of the irrigation system are schedule for the 2014 irrigation season.

### **5.5 CROP MANAGEMENT AND SCHEDULING**

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The crop management will be similar to that practiced in 2014. The site will be planted in alfalfa hay and grass, and harvested as deemed necessary by the Chandler Ranch.

## **5.6 ANNUAL SOIL NUTIRENT TESTING**

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The site soils will be tested in both fields for nitrate/nitrite, TKN, and ammonia in the spring of 2014.

## **5.7 NON-GROWING SEASON OPERATIONAL STRATEGIES**

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During the non-growing season, the effluent will be discharge to the Grande Ronde River under the City's NPDES Permit.

## **5.8 SUFFICIENT LAND AREA**

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The City does not expect any changes to the area of the land application site or any significant increases in wastewater flows during 2014. No changes in setback separation or buffer zones are anticipated. Therefore, adequate buffer zones shall remain and sufficient land is available to facilitate crop rotation and establishing new crops.

## **5.9 WASTEWATER FLOW CHARACTERISTICS**

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The City does not expect changes in wastewater flow or characteristics during 2014. It is anticipated that the customer base will remain the same. Therefore hydraulic loading and nutrient loading is anticipated to be similar to that of 2013.