February 7, 2013

M E M O R A N D U M

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FROM: Jennifer Wester, P.E.
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SUBJECT: Staff Analysis for Draft Reuse Permit M-156-04, Stanley Sewer Association (Municipal Recycled Water)

1. PURPOSE

The purpose of this memorandum is to satisfy the requirements of the *Recycled Water Rules*, IDAPA 58.01.17.400.05, for issuing reuse permits. This memorandum addresses draft permit M-156-04, for the municipal wastewater reuse facility owned and operated by Stanley Sewer Association. Stanley Sewer Association's reuse facility is currently permitted under the terms of permit LA-000156-03.

2. SUMMARY OF EVENTS

The Department of Environmental Quality (DEQ) issued Wastewater Reuse Permit LA-000156-03 to Stanley Sewer Association (SSA) on December 3, 2007. The permit is for operation of the wastewater reuse system serving the Sawtooth National Recreation Area (SNRA) Redfish Lake area and the City of Stanley (including Lower Stanley and Gateway). Prior to July 31, 2001, SSA and SNRA operated separate wastewater treatment facilities which were combined under LA-000156-02. The current system is operated and maintained by the Stanley Sewer Association through a Special Use Permit with the US Department of Agriculture, Forest Service. These facilities are located approximately 2.3 miles south of Stanley, Idaho in Custer County. The purpose of the draft permit is to renew permit LA-000156-03, which will expire on November 29, 2012.

A pre-permitting inspection was performed by DEQ on July 10, 2012. A permit renewal application from Stanley Sewer Association was received on July 23, 2012, was determined complete in a letter dated September 28, 2012, and largely serves as the basis for the terms and conditions contained in the draft permit. As required by the *Recycled Water Rules*, the draft permit will be presented to SSA and the public for comment. After the comment period has closed, DEQ will provide written responses to all relevant comments and prepare a final permit for Stanley Sewer Association's water reuse facilities.

3. PROCESS AND SITE DESCRIPTIONS

The site and treatment processes discussed in the staff analysis for Stanley Sewer Association's previous permit have not changed since that time. For a more complete discussion regarding these items, refer to the staff analysis for the draft version of permit LA-000156-03, dated November 30, 2007.

3.1 Process Description. The permittee currently accepts municipal wastewater from the City of Stanley and surrounding unincorporated areas as well as from US Forest Service (Sawtooth National Recreation Area) facilities at Redfish Lake. The treatment system consists of three facultative lagoons (total storage volume of approximately 37.1 million gallons, MG) arranged so that wastewater flows through at least two lagoons in series prior to chlorine disinfection. Chlorine is generated by an onsite sodium hypochlorite system. The wastewater is treated to Class C standards (median of 23 colony forming units

per 100 milliliters with no sample result greater than 230) and then pumped approximately 1.3 miles west to the land treatment site and applied via two wheel lines having a combined flow capacity (with existing sprinkler nozzles and 120 psi at the irrigation pump) of 240 to 260 gallons per minute (gpm).

3.2 Site Description. The treatment site consists of a total of 103 acres. The permittee has used an average of approximately 63 acres between 2007 and 2011. The sprinkler system consists of two wheel lines, one on the east and the other on the west side of the main distribution line that bisects the application site. As the lines move along the site, they are attached at different risers along the main with the lines staggered so that they are not both connected at the same point. The permittee is currently using mostly the north center portion of the site (see Figure 9.1 of the draft). Likely reasons for this may include the geography of the site (the southern portion is more steeply sloped) as well as the length of the wheel lines themselves. The site is irrigated in accordance with the 2009 Irrigation Plan. To comply with their Special Use Permit with the Forest Service, no harvesting of the native vegetation takes place.

3.3 Historical Loading Summary. Tables 1 and 2 show the site hydraulic and nutrient loading rates for the last permit cycle (2007 through 2011). Overall loading rates remain low compared to other municipal facilities. The 2011 irrigation volume is significantly larger than in previous years. However, without accurate flow monitoring from both systems (SSA as well as SNRA), no determination can be made of where the water might be coming from. The facility has a new operator and at this time, it is not clear if the operator is just irrigating more and drawing the lagoons down further, or if influent flows are increasing. Compliance activity CA-156-03, discussed in Section 4.1 below, is intended to help address this problem.

Table 1: Site Hydraulic Loading (LA-000156-03)

	2007	2008	2009	2010	2011
Acres used	42.2	49.6	75.76	79.89	68.87
Million gallons	7.20	13.24	11.70	14.36	23.21
Inches/acre	6.28	9.83	5.69	6.62	12.41

Table 2: Site Nutrient Loading (LA-000156-03)

	2007	2008	2009	2010	2011
Acres used	42.2	49.6	75.76	79.89	68.87
Nitrogen (lbs/acre)	10.39	15.78	8.57	7.01	27.50
Phosphorus (lbs/acre)	5.62	9.88	5.93	5.42	9.83
COD (lbs/acre-day)	4.34	5.18	3.39	2.34	3.75

4. PERMITTING DISCUSSION

The following sections outline proposed changes for the new permit as compared to their existing permit. They are based on changes requested by the permittee, evaluations of past performance with previous permit requirements, and/or updates required by changes to the *Recycled Water Rules* or any other applicable regulatory standards. Terms and conditions that are unchanged from the previous permit and remain applicable to the facility in the new format are not addressed in this document. Changes made to update regulatory references and language are also not addressed in this document.

4.1. Section 2. Compliance Schedule for Required Activities

Table 3 summarizes the compliance activities and status of the current permit, LA-000156-03. The seepage testing requirement has been carried forward in the proposed activities for M-156-04 and a description of all new compliance activities is included below the table.

Table 3: Compliance Activity Summary from LA-000156-03

Activity Number	Due Date	Description	Status
CA-156-01	Six (6) Months after Permit Issuance	Updated Plan of Operation	Plan dated March 19, 2009 was conditionally approved June 16, 2009.
CA-156-02	Prior to the End of the 2011 Operating Year	Seepage Testing	Seepage testing was postponed to 2016 per a request from the permittee dated October 21, 2010 in response to a change to the seepage testing requirements in the Wastewater Rules (IDAPA 58.01.16.493.02)
CA-156-03	Prior to 2008-2009 Operating Year	Irrigation Plan	Plan dated April 21, 2009 was approved June 16, 2009.

The Compliance Activities proposed for the new permit are as follows:
CA-156-01, Updated Plan of Operations (PO). This activity is intended to update the current PO to clarify winterization procedures for the reuse system.

CA-156-02, Development of a Quality Assurance Project Plan (QAPP) is recommended to provide assurance that valid and verified data are collected, analyzed and reported to DEQ.

CA-156-03, SNRA Flow Meter. Due to conditions at the time of the facility inspection on July 10, 2012, this activity has been added for maintenance of the SNRA flow meter and vault to ensure that they are operational and generating usable data. The inspection noted that the meter pit was full of debris from unauthorized dumping by a 3rd party and the measurement units of the flow meter were unknown.

CA-156-04, Seepage Testing. This activity is included to ensure the permittee completes seepage testing of all three wastewater lagoons by October 31, 2016 in accordance with the current requirements specified in the Wastewater Rules (IDAPA 58-01.16.493). The lagoons were last tested in 2006 and all 3 were in compliance with the 0.25 in/day seepage rate limit.

4.2. Section 3. Permit Limits and Conditions

No changes are proposed to the permit limits and conditions.

4.3. Section 4. Monitoring Requirements

No changes are proposed to the wastewater or soil monitoring requirements. Total coliform monitoring of the land applied effluent will be the same as the previous permit. Stanley Sewer operates as a Class C system, which requires weekly coliform sampling, the median of the last 5 weekly coliform samples not exceed 23/100mL, and no single sample exceed 230/100mL. During the previous permitting process in 2007, Stanley Sewer Association expressed two concerns with the weekly coliform sampling. The first was that many year, the facility did not irrigated for 5 weeks out of the season, so they were unable to collect 5 weekly samples or determine compliance with the 5-sample median. Their second concern was regarding the distance and time to the nearest analytical laboratory in Boise. The Association was concerned that the operator would have to spend an entire day every week driving the sample to Boise since there is no courier service in Stanley. They expressed concerns with the expense of the weekly drive, as well as the operator being absent from the site so frequently to make the drive. Therefore, DEQ and Stanley Sewer Association resolved the issue by requiring coliform sampling twice per month instead of weekly, requiring at least 5 coliform samples per season to comply with the 5

sample median, and requiring weekly onsite chlorine residual monitoring as an operational control to provide assurance that the disinfection level was being maintained in between coliform sampling events. This process will be continued and is captured in this new draft permit.

Section 4.1.2 includes flow monitoring locations for the two existing influent and one existing effluent flow meters with serial numbers FM-015601 through FM-015603. As was shown in Table 1 of Section 3.3, the 2011 irrigation volume is significantly larger than the historical loading. In addition, past lagoon depth measurements seem to indicate the lagoons are losing significant volumes of wastewater during the winter rather than the growing season irrigation events. As discussed above, all three lagoons passed their latest seepage test (CA-156-02 in Table 3). Consistent measurement of the inflow volumes from both sources (in gallons per month) as well as lagoon depths will help determine the actual situation. Upon completion of CA-156-03 (see Section 4.1 above), DEQ recommends that the permittee add inspection and maintenance information for the flow meters, if not included already, in order to make sure that accurate data is collected.

Section 4.2.2 specifies that water table depth and elevation measurements be measured and reported in feet to the nearest whole foot to ensure that accurate and consistent data is used for ground water characterization. Ground water elevations vary between 30 and 100 feet between the 3 wells so measurements to the nearest foot are sufficiently accurate to characterize gradients under the site. Monitoring requirements for total iron and total manganese have been removed in the draft due to a change in the Ground Water Quality Rule (IDAPA 58.01.11) that allows dissolved samples to be used to show compliance with the secondary constituent standards (IDAPA 58.01.11.200.b).

Section 4.4.2 requires the permittee to establish permanent locations for monthly lagoon depth measurement and update the PO to include these locations as well as the measurement procedure(s) for consistency.

4.4. Section 5. Reporting Requirements

The table in Section 5.1.2 summarizes all data required to be submitted with the annual report. Copies of operation logs for the irrigation system are intended to be included with each annual report. No changes to the reporting requirements are proposed.

4.5. Section 9. Site Maps

The maps have been updated to include a new site and vicinity map for the facility as well as a site map that shows the local groundwater contours (as of May 2011). The hydraulic profile, pump building layout, and pump building detail sheets have been retained.

5. RECOMMENDATIONS

Based on review of applicable state rules, staff recommends that DEQ issue draft reuse permit M-156-04 for a public review and comment period. The draft permit contains effluent quality requirements for the recycled water treatment system, as well as terms and conditions required for operation of the reuse system in Section 3. Monitoring and reporting requirements to evaluate system performance and to determine permit compliance have been specified in Sections 4 and 5, and compliance activities have been incorporated into Section 2 of the permit.