

**NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
FACT SHEET**

(pursuant to NAC 445A.236)

Permittee: Bently Family Limited Partnership
dba Bently Agrowdynamics
P. O. Box 127
Minden, Nevada 89423

Permit: NEV2009507

Location: Bently Agrowdynamics Middle Ranch Agricultural Fields

Component	Latitude	Longitude	Douglas County Township Range & Section
Bently Irrigation Storage Reservoir	38° 57' 50"N	119° 40' 54"W	T 13N, R 20E, S 25
Bently Middle Ranch Agricultural Fields	NA	NA	T 13N, R 20E, Sections 2-4, 9-11, 15-17, 21, 23, 26-28

Corrective Actions Sites:

There are no Bureau of Corrective Actions (BCA) remediation sites located within a one-mile radius of the permitted facility.

Well Head and Drinking Water Supply Protection:

The Bently Middle Ranch Agricultural Effluent Reuse site is located downgradient of two currently established Wellhead Protection Areas. Portions of the reuse areas located in the following Township, Range and Sections are known to be or may be within the following Drinking Water Protection Areas (DWPAs):

Township	Range	Section	Wells
13N	20E	3	<u>East Valley Water System:</u> North Clapham Well (6000')
13N	20E	4	<u>East Valley Water System:</u> North Clapham Well, (6000') Airport Well (6000')
13N	20E	16,17	<u>East Valley Water System:</u> Airport Well, (1000') Airport Well South (1000')
13N	20E	20	<u>East Valley Water System:</u> Airport Well South (6000') <u>Town of Minden:</u> Well 5 1715, (6000') Well 4 1769 (3000')
13N	20E	21	<u>East Valley Water System:</u> Airport Well South (6000') <u>Town of Minden:</u> Well 5 1715 (3000')
13N	20E	28	<u>Town of Minden:</u> Well 5 1715 (6000') <u>Gardnerville Town Well:</u> Well 2 (6000')

General:

Bently Agrowdynamics Middle Ranch Agricultural fields encompass 3,100 acres of irrigated

fields within a 5,200 acre reuse site. The site is located north and south of Stockyard Road, on the east side of Carson Valley, east northeast of the Gardnerville/Minden area of Douglas County, Nevada. Approximately 2,850 acres are used to grow alfalfa and small grains with center pivot irrigation. About 250 acres are used to grow alfalfa and small grains using portable solid set irrigation systems.

Previous to this permit, Bently received and used secondary treated disinfected effluent under two separate effluent reuse permits: Permit NEV96003 (effluent supplied by Douglas County SID #1 (DCSID)), and Permit NEV2002514 (effluent supplied by Minden Gardnerville Sanitation District (MGSD)). Bently received effluent from DCSID Wastewater Treatment Facility (operated under permit NEV80033) via the DCSID forcemain to the Bently storage reservoir and emergency take-out structure on Stockyard Road, Douglas County, Nevada. Effluent is also received from the MGSD Wastewater Treatment Facility (operated under Permit NEV40027), via the MGSD effluent forcemain to the Bently storage reservoir, with two (2) irrigation take-outs on Stockyard Road. Generally, effluent from the two sources is combined in the storage reservoir and is withdrawn for irrigation purposes, but effluent from either source may be introduced directly into the irrigation system via MGSD Outfalls 001a and 001b, or via DCSID Outfall 002. Reuse effluent is supplemented as needed with fresh water from onsite irrigation wells. The Permittee has requested that the two permits be combined into one permit to simplify management of reuse activities.

Effluent Flow and Characteristics:

During the period from July 2004 through March, 2009, the effluent was received by the Permittee in compliance with permit 30-Day Average flow limits of 5.0 and 3.83 million gallons per day (MGD) for DCSID Outfall 001 and MGSD Outfall 001, respectively. The effluent was applied to the agricultural fields within the nitrogen application guidelines set forth in the Division approved Effluent Management Plan for the crops grown and growing conditions; no adverse impact to the groundwater quality is expected. While the quality of the effluent is not within the control of the Permittee, with several isolated exceptions (MGSD Fecal Coliform, December 2004; DCSID BOD₅, August and September, 2004; DCSID Fecal Coliform, September 2005), the effluent quality has been in substantial compliance with permit limits.

In the application for the combined permit, the Permittee has requested flow of up to 5.8 MGD effluent from MGSD and 3.5 MGD from DCSID

Receiving Water Characteristics:

Groundwater is encountered below the site at between 10 feet and 113 feet below ground surface (bgs), dependent on topography. The average depth to groundwater below the site is 53.2 feet bgs for wells associated with Permit NEV96003 (MW1 through MW6). The average depth to groundwater below the site is 62.4 feet bgs for wells associated with Permit NEV2002514 (BR1, MW5 through MW8). The groundwater below the site is of good quality. Monitoring well data submitted from 2nd Quarter 2004 through 1st Quarter 2009, summarized below, indicates no adverse impact on water quality due to reuse activities.

PARAMETER		AVERAGE
Total Dissolved Solids (mg/l):	Permit NEV96003 wells	387.5
	Permit NEV2002514 wells	289.1
Chlorides (mg/l):	Permit NEV96003 wells	43.1
	Permit NEV2002514 wells	10.4
Total Nitrogen as N (mg/l):	Permit NEV96003 wells	1.50
	Permit NEV2002514 wells	2
Nitrate as N (mg/l):	Permit NEV96003 wells	1.40
	Permit NEV2002514 wells	2

Due to changes in the regional groundwater table, monitor well MW3 has been dry since 2004. This well had been monitored as an upgradient well to represent background water quality. Monitor wells MW4 and MW5 also monitor upgradient groundwater quality, so the Permittee has requested that Well MW3 be removed from the monitoring schedule in the combined permit.

Proposed Effluent Limitations and Special Conditions:

The following discharge limitations are proposed for the combined permit:

Table 1.A.: Effluent Limitations and Monitoring Requirements

PARAMETER		DISCHARGE LIMITATIONS		MONITORING REQUIRMENTS	
		30-Day Average	Daily Maximum	Monitoring Frequency	Sample Type
Flow From Supplier (MGD): DCSID 001 MGSD 001		M & R M & R	3.5 5.8	Continuous	Flow Meter
Flow to Irrigation (MGD): MGSD 001a MGSD 001b DCSID 002		M & R M & R M & R	M & R M & R M & R	Continuous	Flow Meter
Effluent Both DCSID & MGSD	BOD ₅ (mg/l)	30	45	Weekly	Composite
	TSS (mg/l)	30	45	Weekly	Composite
	pH (S.U.)	6.0 to 9.0		Monthly	Discrete
	Fecal Coliform (CFU or MPN/100 ml)	200	400	Weekly	Discrete
	Total Nitrogen as N (mg/l)	M & R	M & R	Monthly	Discrete
Total Nitrogen as N (mg/l)	MGSD 001a MGSD 001b DCSID 002	M & R M & R M & R	M & R M & R M & R	Monthly	Discrete
Total Nitrogen as N Applied (lbs/acre/year)		Not to exceed the agronomic rate listed in the EMP.		Annually 4 th Quarter	Calculate

Notes:

CFU = Colony Forming Units
S.U. = Standard Units

MPN = Most Probable Number
ml = milliliter

EMP = Effluent Management Plan
MGD = Million Gallons a Day

- a. The yearly application rate shall not exceed that specified in the Effluent Management Plan (EMP) for the crops in fields being irrigated considering soil permeability, plant uptake with leaching fraction or

nitrogen loading, whichever governs. Flow must be verified at the reuse site.

- b. Monitoring data, except for Flow, Total Nitrogen as N at Outfalls MGSD 001a, MGSD 001b, and DCSID 002 (actual use), annual application calculations, and groundwater monitoring, shall be provided by the suppliers of the effluent, DCSID (Permit NEV80033) and MGSD (Permit NEV40027), but results shall be reported by the Permittee in accordance with Part B.2 of this permit.
- c. The total nitrogen applied (lbs/acre) shall not be greater than the total nitrogen uptake (lbs/acre). The calculations and/or monitoring shall include the total nitrogen in the applied wastewater, total nitrogen from fertilizer applications, nitrogen uptake by crop, evapotranspiration rate, precipitation rate and fraction of applied nitrogen removed by denitrification and volatilization. An annual report shall be submitted on the fourth quarter of every year which demonstrates compliance with this limitation. **An annual report shall be submitted in the fourth quarter of every year which demonstrates compliance with this limitation. Allowable nitrogen application rate calculated using the Effluent Management Plan must be reported, as well as the actual nitrogen application rate.**

Groundwater Monitoring: Groundwater at the reuse site shall be monitored by the Permittee in wells BR #1 (reservoir), MW #1, #2, #4, #5, #6, #7, and #8. The wells shall be monitored according to the following

PARAMETER	LIMITATIONS	MONITORING REQUIREMENTS	
		Measurement Frequency	Sample Type
Total Dissolved Solids (mg/l)	Monitor & Report	Quarterly	Discrete
Chlorides (mg/l)	Monitor & Report	Quarterly	Discrete
Total Nitrogen as N (mg/l)	10 See Part I.A.13 of the permit.	Quarterly	Discrete
Nitrate as N (mg/l)	Monitor & Report	Quarterly	Discrete
Depth to Groundwater (feet)	Monitor & Report	Quarterly	Discrete
Groundwater Elevation (feet AMSL)	Monitor & Report	Quarterly	Discrete

Schedule of Compliance:

The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance any additions or modifications that the Administrator may make in approving the schedule of compliance.

- a. **By MMM DD, 2009**, the Permittee shall submit, for review and approval, an updated Effluent Management Plan (EMP) covering all irrigation reuse activities as previously administered under Water Pollution Control Permits NEV96003 and NEV2002514.

Rationale for Permit Requirements:

Permit limits and requirements are established to ensure that the groundwater is not impacted by effluent reuse activities.

Procedures for Public Comment:

The Notice of the Division's intent to issue an Nevada Groundwater Discharge permit authorizing the facility to discharge treated groundwater, subject to the conditions contained within, is being sent to the **Reno Gazette Journal** and the **Record Courier** for publication. The notice is being mailed to interested persons on our mailing list. Anyone wishing to comment on the proposed permit can do so in writing for a period of thirty (30) days following the date of publication of the public notice in the newspaper. The comment period can be extended at the discretion of the Administrator. The deadline date and time by which all comments are to be submitted (via postmarked mail or time-stamped faxes, e-mails, or hand-delivered items) to the Division is **September 25, 2009 by 5:00 P.M.**

A public hearing on the proposed determination can be requested by the applicant, any affected State, any affected interstate agency, the Regional Administrator or any interested agency, person or group of persons.

The request must be filed within the comment period and must indicate the interest of the person filing the request and the reasons why a hearing is warranted.

Any public hearing determined by the Administrator to be held must be conducted in the geographical area of the proposed discharge or any other area the Administrator determines to be appropriate. All public hearings must be conducted in accordance with NAC 445A.238.

The final determination of the Administrator may be appealed to the State Environmental Commission pursuant to NRS 445A.605.

Proposed Determination: The Division has made the tentative determination to issue the proposed permit to the facility for a period of five (5) years.

Prepared by: Janine Hartley, P.E.
July, 2009