

MEMORANDUM

Date: September 3, 2009
To: Water Right File 63-10034 Simplot
From: Michele Edl
Re: license review

Source and POD

Groundwater: 5-6 wells

The permit authorized two points diversion for this right. The field examiner Carter Fritschle, found 5 active wells but recommended only three wells as points-of-diversion associated with this water right. A file memo titled Supplemental Information authored by C Fritschle and subsequent field exams flesh out the well use for the food processing plant. Depending on the reference, either five or six wells are active and connected to a common system serving the food processing plant. The recommended system capacity is the same whether five or six wells are included. I believe that the irrigation use authorized by this license would be best represented by five points-of-diversion at five interconnected wells. A licensing amendment to add PODs will be needed.

I associated point-of-diversion shapes to existing spatial data points representing Simplot well # 8, well #9 and well #10. These wells had been GPSd by DEQ and were confirmed by Kay Walker (Western Region) in her 2008 supplemental field exam. I correlated several points from other layers to these well locations. I used the locations provided by Kay Walker in her recommendation as the best source for assigning POD shapes to well #4 and well #6.

Process water reuse: 7 discharge points including a lagoon

In his field exam narrative, C Fritschle stated that the "water from the wells can be discharged into the wastewater recovery system and used for irrigation when the processing plant is not operating." Therefore the discharge points of the wastewater system could be considered PODs for this right. I have added wastewater as a source for this permit. The fundamental origin of the wastewater stream is groundwater from the wells. This is not so much an additional source as it is recharacterization of the process/irrigation water.

At the time of his exam, C Fritschle was not considering industrial use a viable use through this water right. He recommended irrigation use only and his field exam and report reflects that focus. In his supplemental information memo Carter states that there are "seven discharge points (the lagoon and open ditches)." However the discharge points are not well identified in his field exam. I was able to locate the effluent lagoons in 1987 photography and created a point for what I believe is the effluent pumping station in that section. I also created one discharge point which Carter described in SENENW section 20. I did not have sufficient information to define the locations of the other 5 discharge points Carter found.

Water Use

When Carter Fritschle conducted his field exam for this right in July of 1987, he recommended that this right be licensed for irrigation use only. He found that the industrial use was completely covered by other water rights. Kay Walker came to the same conclusion as a result of her more recent 2008 field exam and summary of Basin 63 JR Simplot Co water rights for adjudication. However Kay Walker also sent me an email in Nov 2008 within which she paraphrased a request from Vic Conrad, her contact with the JR Simplot Co. In essence Simplot would like to keep the industrial use on this water right so that they can land apply wastewater year-round as an accompaniment to the year-round plant operation.

The Department does not require a water right for land application of wastewater if an irrigation right exists for the same place-of-use. Other irrigation rights have been authorized for the 933 acre place-of-use associated with this right. However, an irrigation use authorizes seasonal use only, and the Department cannot issue a water right for year-round irrigation use. Therefore, contrary to the examiners recommendation, industrial use remains an authorized use through this water right.

Irrigation

During his field exam, C Fritschle found an instantaneous rate of 9.36 cfs from wells in irrigation use. That rate is the rate I have licensed as the maximum for this water right. The irrigation system capacity is 12.48 cfs and is based on a total of the individual well capacities. There are other surface water irrigation rights and other, senior groundwater rights for industrial and irrigation use or for industrial use. Incremental beneficial use for irrigation has been recommended through four rights senior to this one, for a total of 8.02 cfs of the 12.48 cfs system capacity.

K Walker recommends a total of 401 acres in irrigation use under senior rights so of the 933 acre POU ~532 acres are not covered.

On its own, the irrigation use of this right is not sufficient to meet irrigation rate requirements on the remaining acres. At an inch per acre 0.02cfs/ac x 532ac would require 10.65 cfs. Only 4.46 cfs is still available from the system capacity. (12.48cfs - 8.02 cfs = 4.46 cfs)

Industrial

In his field exam C Fritschle found 2731 gpm (~6.08 cfs) as an instantaneous discharge from the treatment plant. Kay Walker received additional information in 2008 from her Simplot contact, which she used to determine a maximum rate of industrial beneficial use at 8.83 cfs. A copy of the documentation supporting that industrial rate determination has not been made available for this file, but without any conflicting information, 8.83 cfs may be best available rate for industrial use.

The use of the industrial process water alone would not completely satisfy the irrigation requirement on the 933-acre place of use. At an inch per acre, 8.83 cfs, the industrial rate could irrigate 441.5 acres of the 933 acres pou. The industrial use through this right would not be in the growing season and it may be inappropriate to apply growing season rules to an off season use but neither would a distribution rate greater than that suited for irrigation be justified. No ground water use is authorized in the non-irrigation season through this right. The industrial season-of-use for this right is the off-season for the irrigation use and allows accumulated process water to be applied to land. Because process changes could provide an opportunity for enlargement of the groundwater use some uncommon conditions will be needed on the license.

I was not able to determine the industrial/process water system capacity but I assumed it would be no more than what the original well sources could provide.

Place of Use

I created the 37 shapes which comprise the place-of-use for this water right. I based my shapes on Carter Fritschles field exam map and 1987 aerial photography. The shape added to 933 acres in ArcMap but round differently in the database to something less than 933 acres. Kay Walker used my shape as a starting point for her recommendations and may have made some small changes to the acreage. My calculations were based on 933 acres

POU overlap review shows several other ground water and surface water rights on the same place-of-use as this right.

The field examiner found that the place-of-use includes the SW quarter of section 7 which is an

addition to the permitted place of use. A licensing amendment to add to POU will be needed.

Based on a priority-sorted tally of the irrigation rights, (see KWalker email and spreadsheet attachment Nov 24, 2008) at least 401 acres are covered by groundwater irrigation rights senior to this right. Because there is considerable overlap of surface water and ground water irrigation rights and the Department was not able to determine the initial irrigation on each area. To complement the recommendations already made by Department personnel for this 933-acre place-of use, ~532 acres are not covered by groundwater irrigation groundwater prior to this water right.

Conditions

The field examiner found flow meters on the wells and a Parshall flume constructed to measure treatment plant discharge. He cataloged them in the exam report and included instantaneous measurements which substantiated his recommendations. Current technology provides the Department with less invasive measurement capabilities so I struck the measurement port condition from the licensing conditions and replaced it with a condition better suited to current measurement requirements.

Calculations

Industrial process reuse volume = $8.83 \text{ cfs} \times 120 \text{ days} \times 1.9835 = 2101.72 \text{ AF}$

Irrigation volume = $9.36 \text{ cfs} \times 245 \text{ days} \times 1.9835 = 4548.56 \text{ AF}$

Output table summarizing the 37 shapes I created for 63-10034 & sum to 933 acres.

Unfortunately the same shapes round differently in the database

ID	AREA	PERIMETER	ACRES
0	119452.145	1378.997	29.5
0	50853.469	1005.905	12.6
0	132766.390	1530.769	32.8
0	45481.127	972.419	11.2
0	117930.660	1422.800	29.1
0	113844.797	1371.069	28.1
0	219329.245	1865.508	54.2
0	110599.076	1479.299	27.3
0	57406.870	1016.050	14.2
0	286666.352	2164.859	70.8
0	97408.924	1313.658	24.1
0	102311.816	1271.579	25.3
0	129192.386	1437.940	31.9
0	126977.030	1399.908	31.4
0	144276.209	1593.457	35.7
0	33858.322	731.445	8.4
0	110450.670	1442.625	27.3
0	87477.577	1219.969	21.6
0	61898.595	961.971	15.3
0	34655.770	791.152	8.6
0	24773.227	631.224	6.1
0	53319.310	1064.573	13.2
0	43846.361	853.855	10.8
0	29044.559	802.112	7.2
0	21310.527	669.650	5.3
0	125740.551	2526.448	31.1
0	132988.654	1613.012	32.9
0	177554.253	1707.139	43.9
0	97207.215	1294.796	24.0
0	140821.296	1515.084	34.8
0	309113.195	2520.091	76.4
0	95897.983	1345.573	23.7
0	107851.894	1519.163	26.7
0	48601.163	899.312	12.0
0	72911.607	1155.974	18.0
0	51084.647	1093.609	12.6
0	60453.272	1006.544	14.9
			<u>933.0</u>

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