

Form No.
GWS-25

OFFICE OF THE STATE ENGINEER
COLORADO DIVISION OF WATER RESOURCES
818 Centennial Bldg., 1313 Sherman St., Denver, Colorado 80203
(303) 866-3581

AUTH

APPLICANT

WELL PERMIT NUMBER 75616 -F -
DIV. 1 WD 5 DES. BASIN MD

VARRA COMPANIES INC
C/O CHERYL SIGNS ENGINEERING
109 E 4TH AVE
DENVER, CO 80203-

(303) 778-7653

APPROVED WELL LOCATION

WELD COUNTY

1/4 1/4 Section 32
Township 3 N Range 67 W Sixth P.M.

DISTANCES FROM SECTION LINES

Ft. from Section Line
Ft. from Section Line

UTM COORDINATES (Meters Zone:13.NAD83)

Easting: Northing:

PERMIT TO EXPOSE WATER IN A PIT (AMENDED)

ISSUANCE OF THIS PERMIT DOES NOT CONFER A WATER RIGHT

CONDITIONS OF APPROVAL

- 1) This well shall be used in such a way as to cause no material injury to existing water rights. The issuance of this permit does not assure the applicant that no injury will occur to another vested water right or preclude another owner of a vested water right from seeking relief in a civil court action.
- 2) The construction of this well shall be in compliance with the Water Well Construction Rules 2 CCR 402-2, unless approval of a variance has been granted by the State Board of Examiners of Water Well Construction and Pump Installation Contractors in accordance with Rule 18.
- 3) Approved pursuant to CRS 37-90-137 (2) and (11) for the construction and operation of a well (gravel pit) in accordance with the temporary substitute water supply plan approved by the State Engineer on August 26, 2011, for the Heintzelman Pit, Division of Reclamation Mining and Safety Permit Number M-2009-018. The well (pond) shall not be operated unless it is included in a substitute water supply plan approved by the State Engineer or a plan for augmentation approved by the Water Court. The water supply plan for this pit is currently valid through June 30, 2013 and if it is not extended or if a court decree is not entered for a plan for augmentation, this well permit is null and void and diversion of ground water from this well must cease immediately.
- 4) The average annual amount of ground water to be appropriated shall not exceed 290.19 acre-feet with the total surface area of the proposed ground water pond limited to 105.44 acres, or the amounts covered under a water court approved plan for augmentation or substitute water supply plan approved by the State Engineer, whichever is less. No additional water surface area shall be exposed unless a permit therefor is approved.
- 5) The use of ground water, in addition to dewatering, is limited to 263.28 acre-feet of evaporative loss, 3.36 acre-feet of water used for dust control, and 23.55 acre-feet of water lost with the mined product or the amounts covered under a water court approved plan for augmentation or substitute water supply plan approved by the State Engineer, whichever is less, or any combination of the above-described uses that combined do not exceed the permitted limit of 290.19 acre-feet of water consumption per year. No other use of water is allowed unless a permit therefor is approved.
- 6) The owner shall mark the well (pond) in a conspicuous place with well permit number(s) and court case number(s) as appropriate. The owner shall take necessary means and precautions to preserve these markings.
- 7) Pursuant to Policy 2014-1 of the State Board of Examiners of Water Well Construction and Pump Installation Contractors (Board), the minimum construction standards in Rule 10 of the Water Well Construction Rules shall be waived for gravel pit ground water ponds except compliance with Rule 10.1 and its subsections 10.1.2, 10.1.4, 10.1.6 and Rule 10.2 and its subsection 10.2.1 is required. The owner of the gravel pit shall take necessary means and precautions to prevent contaminants from entering the gravel pit ground water pond.
- 8) Pursuant to Policy 2014-1 of the Board, the disinfection standards of Rule 15 of the Water Well Construction Rules shall be waived and the water well construction report requirement of Rule 17 shall be waived, except compliance with Rules 17.1.4, 17.3 and 17.4 is required. The site plan and cross section drawings required by Rule 17.1.4 shall include the date ground water was first exposed in the gravel pit.
- 9) The boundaries of the gravel pit pond shall be more than 600 feet from any existing well constructed in the same source, that is not owned by the applicant, excluding well permit no(s). 166299, 167912-A and an unregistered well (spacing waivers submitted by the well owners) and excluding well permit no. 212083-A whose owner was notified pursuant to CRS 37-90-137(2)(b)(II)(A) and no response was received.
- 10) This well is subject to administration by the Division Engineer in accordance with applicable decrees, statutes, rules, and regulations.

Amended OK
09.17.2014
LS C

APPROVED
IDC

State Engineer

DATE ISSUED 10-18-2011

By

EXPIRATION DATE 10-18-2013

Receipt No. 3613599

Best Copy Available

SWSP (M-78-56)

This SWSP request is for a reduced water lost in product of 7.80 af per year for 267,931 tons. The dust suppression was increased to 3.48 af per year. The batch use was increased to 23.50 af per year. The net evaporation remained the same at 37.84 af per year for 15 acres of exposed groundwater. The transmissivity estimate was 100,000 gpd/ft, the specific yield was 0.28, the distance of the centroid from the stream was 1,100 feet and the alluvium boundary was 2,600 feet. The monthly distribution and depletions are shown in Table 6. Table 7 shows the remaining GIC credits and debits after Feit, Western Sugar, and Durham debits are removed. VCI requests that the total use of 72.62 af per year become the only SWSP volumetric limit.

Dewatering

The dewatering rate is 5.0 million gallons per day. This dewatering totals 196 acre-feet per month, which was modeled in the AWAS analysis using the SWSP values. The following table shows the monthly depletions. Steady state was reached in 12 months. This mine has been operating longer than one year so steady state has been reached. The mine will continue to operate for the remainder of this SWSP.

Month	1	2	3	4	5	6	7	8	9	10	11	12
Depletion, af	-62.68	-125.55	-154.61	-171.64	-181.66	-187.56	-191.03	-193.08	-194.28	-194.99	-195.40	-195.65
Depletion, af	-195.79	-195.88	-195.93	-195.96	-195.98	-195.99	-195.99	-195.99	-196.00	-196.00	-196.00	-196.00

Heintzelman
Well Permit

Heintzelman's WDID is 0503010 and the well permit is no. 75616-F. The well permit limits for dust suppression and water lost in product were increased and the evaporation limit was reduced so that the total volumetric limit remained the same. Dust suppression increased to 6.52 af per year. The projected water lost in the mined product increased to 67.69 af per year for 2,300,000 tons per year. Evaporation was reduced to 215.98 af per year for net evaporation from 86.5 acres of exposed groundwater. The total water use in the well permit remains at 290.19 af. VCI requests that the Heintzelman well permit be amended to show the revised total amount.

Decree

The decree in Case No. 03CW306 requires a two year water use projection every year. If the projection shows adequate water, mining operations proceed as needed. During the year if the demands are more than projected, the projection must be updated to show the new demands and the sufficiency of the replacement supplies. Dakolios, Del Camino, Heintzelman, Kurtz, and Bearson sand and gravel pits were included in the decree with a provision to add and remove pits. Backfill of the Dakolios settling pond removed its water demand, and it will be removed in future SWSP requests. The exposed groundwater at Del Camino is currently at or less than the grandfathered area as decreed in Case No. 90CW174. Heintzelman and Kurtz are active mines. Bearson will be permitted shortly.

Table 4
Western Sugar Demand

Mon	Potential Groundwater Evaporation							Water Lost in Mined Product				Dust Control		Total	Total
	Gross	Avg.	Effect.	Net	Evap.	Net Evap.	ICE	Production	Lost water	Lost water	Lost water	Volume	w/drawal	Depletions	
	Distrib. Evap.	Precip.	Precip.	Evap.	> 0										
	(%)	(in)	(in)	(in)	(in)							Gallons	(af)	(af)	(af)
(1)	(2)	(3)	(4)	(5)	(6)	(6a)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Nov	4.0	1.68	0.83	0.58	1.10	1.10	2.30	114,506	4,580	146,803	3.37	234,613	0.72	6.51	-10.98
Dec	3.0	1.26	0.45	0.32	0.95	0.00	ICE	90,125	3,605	115,545	2.65	234,613	0.72	3.58	-8.33
Jan	3.0	1.26	0.50	0.35	0.91	0.00	ICE	140,205	5,608	179,750	4.13	234,613	0.72	5.08	-6.66
Feb	3.5	1.47	0.37	0.26	1.22	1.22	2.53	88,233	3,529	113,119	2.60	234,613	0.72	5.98	-6.25
Mar	5.5	2.32	1.14	0.80	1.52	1.52	3.16	119,894	4,796	153,710	3.53	234,613	0.72	7.50	-6.52
Apr	9.0	3.79	1.83	1.28	2.51	2.51	5.23	149,567	5,983	191,753	4.40	234,613	0.72	10.35	-7.65
May	12.0	5.05	2.48	1.74	3.32	3.32	6.91	172,076	6,883	220,610	5.06	234,613	0.72	12.63	-9.37
Jun	14.5	6.11	1.85	1.30	4.81	4.81	10.03	161,421	6,457	206,950	4.75	234,613	0.72	15.31	-11.41
Jul	15.0	6.32	1.46	1.02	5.30	5.30	11.03	142,481	5,699	182,668	4.19	234,613	0.72	15.72	-13.18
Aug	13.5	5.69	1.16	0.81	4.87	4.87	10.15	205,489	8,220	263,447	6.05	234,613	0.72	16.73	-14.48
Sep	10.0	4.21	1.19	0.83	3.38	3.38	7.04	123,436	4,937	158,251	3.63	234,613	0.72	11.32	-14.13
Oct	7.0	2.95	1.01	0.71	2.24	2.24	4.67	192,567	7,703	246,881	5.67	234,613	0.72	11.08	-12.79
Total	100.00	42.12	14.27	9.99	32.13	30.27	63.06	1,700,000	68,000	2,179,487	50.03	2,815,356	8.64	121.73	-121.75

NOTES:

- (2) Based on state's guidelines
(3) Evaporation Rate x (2)/100
(4) Average for Greeley climatological station at UNC (53553)
(5) (4) x 0.7
(6) (3) - (5)
(6a) (6) with average monthly temperature <32° set to zero
(7) (6a) x 50 acres/ 12
(8) Projected monthly
(9) (8) x 0.04 based on state's guidelines
(10) (9) (tons) * 2000 (lb/ton) / 62.4 (lb/ft³)
(11) (10) / 43560 (ft²/af)
(12) 2500 (gal) x (12)
(13) (12) / 325851 (gal/af)
(14) (7) + (11) + (14)
(15) AWAS using T = 100,000, S = 0.28, W = 2,600, X = 1,350

Table 5
Western Sugar Replacement Requirement

Month	Total Withdrawals (af)	Total Depletions (af)	Rep. Requirement After Feit (af)	Remaining Rep. Requirement (af)
(1)	(2)	(3)	(4)	(5)
Nov	6.51	-10.98	-3.83	-14.81
Dec	3.58	-8.33	-3.28	-11.61
Jan	5.06	-6.66	-2.84	-9.50
Feb	5.96	-6.25	-2.52	-8.77
Mar	7.50	-6.52	-2.53	-9.05
Apr	10.35	-7.65	0.05	-7.60
May	12.63	-9.37	5.82	-3.55
Jun	15.31	-11.41	10.11	-1.30
Jul	15.72	-13.18	14.65	1.47
Aug	16.73	-14.48	13.19	-1.29
Sep	11.32	-14.13	6.88	-7.25
Oct	11.08	-12.79	1.36	-11.43
Total	121.73	-121.75	37.06	-84.69

Notes:

- (1) Table 5, Col. (14)
(2) Table 5, Col. (15)
(3) From Feit Table 3
(4) Table 5, Col (16)