

TO: Rosedale-Rio Bravo Water Storage District Board of Directors
Agenda Item 7.a.i

FROM: Dan W. Bartel

DATE: May 13, 2022

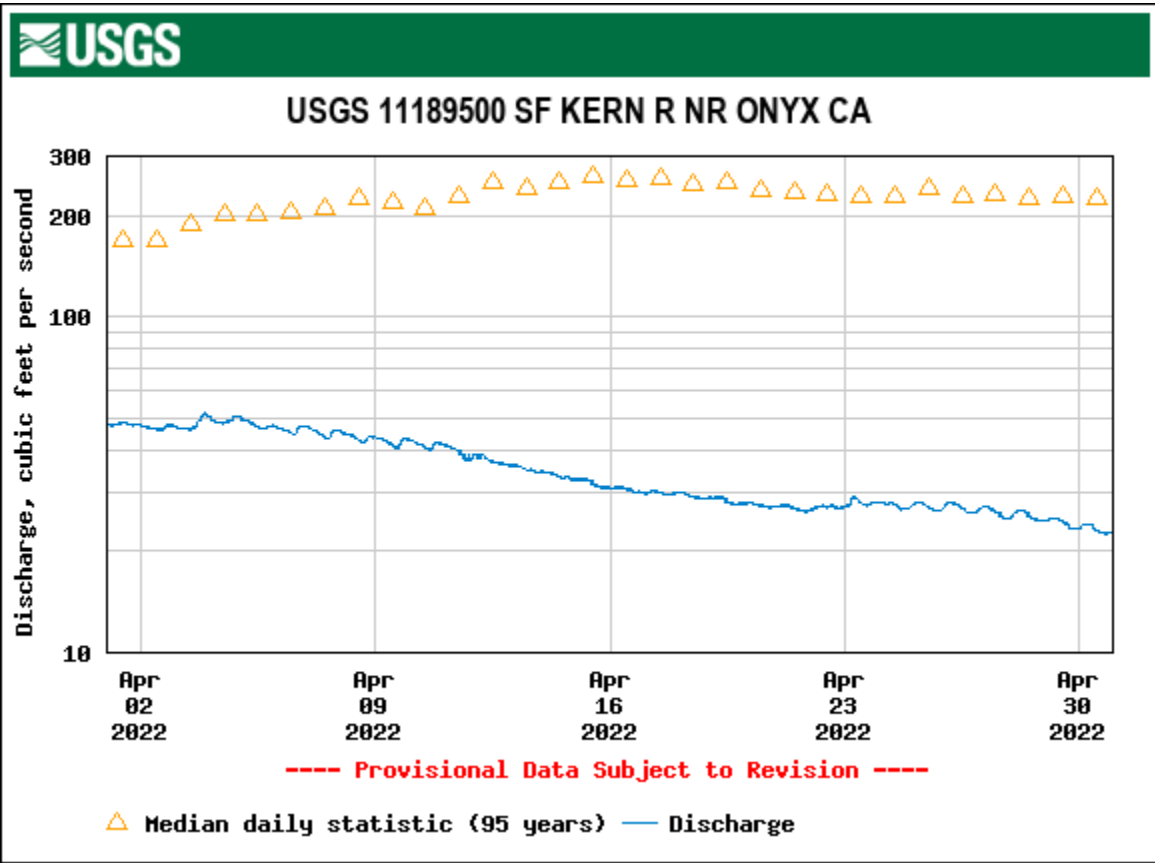
RE: Onyx Ranch Operations Report

Discussion:

Staff has been working to implement an interim operations plan considering the District's developing goals and objectives on the Ranch. Specifically, staff has:

- Continued operation of conveyance system.
- Worked on stockwater systems projects
- Worked on planning for flow metering improvements of other right holders
- The CEQA team distributed the FEIR including responses to comments on 12/30/2020 and the Board Certified the document on 1/12/2020. Staff continued coordination efforts with the Kern River Interests and began redirecting flows March 28 and implemented the Pilot Project April 1, 2022.
- Staff working closely with COB operations staff to coordinate operations.

RRBWSO diverted 70 AF to the Landers for Ben Rudnick obligations in April to the Onyx Ranch and redirected 1100 AF to the reservoir (14.4-22.3 cfs), this resulted in 880 AF of Net Project Water with an average flow of **14.8 cfs**. Prior to redirection flows at Patterson Lane were less than 10 gpm if at all. Shortly thereafter flows picked up quickly comparable to the amount redirected. Flows at this point were stream gaged 15 times and averaged **15.8 cfs**. Wells were operated to supplement irrigation to the Boone field only. South Fork flows downstream of Bloomfield averaged 35 cfs plus calculated accretions of 6 cfs, for a total average of 41 cfs.



South Fork flow at Patterson Ln. after redirecting flows to reservoir 4/15/2022
 Measured Flow 21.8 cfs, normally 0 cfs at this flow regime

South Fork Kern River Monthly Measurement Report

April-2022

Daily values in SFD = Second Foot Days, Monthly total in AF = Acre-Feet

Date	South Fork			D.Prince (4,5,17,20-22,37)			Hafenfeld (5)			RRBWS (1,3,6,7,12, Wirth1, 30,33, Boone)				J.Nicoll (3)	on 5,9,Wirth1,17,18 (20-22,Wirth2,27,29,37)	Smith (Smith)	Total Diverted	South Fork		RRBWS to Isabella	Isabella			
	USGS - Onyx	Accretions	Doyle Ranch Road	Mill/Hillside	Miller	Prince	Miller	Landers	Cottonwood	Scodie/Mack	Landers	Nicoll	Redirected "Gross Project Water"	Nicoll	Cottonwood	Nicoll	Smith		Sierra Way "Flow"	Patterson "Flow"	"Net Project Water"	Mean Inflow	North Fork Flow	Difference
F 1	47	4			4.8	9.3	4.8				1.5	17.6	2.4			10.5	33	Yes	19.2 / 20.2	14	448	459	-11	-8
S 2	46	4	41		3.9	8.1	3.9				1.3	20.5	2.4			10.0	30	Yes	Yes	16	467	483	-16	-5
S 3	46	4			3.9	5.5	3.9				1.8	21.5	3.0			10.5	28	Yes	Yes	17	533	547	-14	-14
M 4	48	4			4.1	8.1	4.1				1.1	21.6	3.3			9.8	31	Yes	21.6	17	502	576	-74	-35
T 5	49	8			4.7	8.5	4.7				1.0	21.8	3.0		2.8	10.8	36	Yes	17.7	17	624	578	46	-14
W 6	46	8			4.5	7.8	4.5				1.3	22.3	3.0		3.5	7.8	32	Yes	19	18	658	636	22	-2
R 7	46	8			4.4	9.9	4.4				1.5	19.0	2.9		3.4	8.7	35	Yes	Yes	15	683	705	-22	15
F 8	44	8			4.1	7.2	4.1				1.1	24.0	3.7			8.6	29	Yes	Yes	19	729	777	-48	-16
S 9	43	8	38		4.2	7.8	4.2				1.8	22.9	2.7			8.1	29	Yes	15.5	18	734	870	-136	-68
S 10	42	8			3.9	10.5	3.9				1.5	20.5	2.4			7.8	30	Yes	Yes	16	751	880	-129	-104
M 11	41	8			3.7	8.2	3.7				1.6	21.0	3.4			7.7	28	Yes	15	17	885	796	89	-59
T 12	39	5			3.1	7.3	3.1				1.3	19.1	3.4			6.4	25	Yes	Yes	15	566	662	-96	-45
W 13	36	5			2.4	6.7	2.4				1.1	19.2	3.3			6.4	22	Yes	17.3	15	527	576	-49	-19
R 14	34	5			2.2	5.9	2.2				0.6	19.9	2.4			6.2	19	Yes	17.5	16	472	536	-64	-70
F 15	33	5			2.1	5.6	2.1				1.0	18.7	2.3			6.0	19	Yes	21.8	15	520	499	21	-31
S 16	31	5	too windy		2.2	5.4	2.2				1.3	16.8	2.2			5.9	19	Yes	Yes	13	521	482	39	-1
S 17	30	5			2.2	5.3	2.2				1.0	16.6	2.1			5.5	18	Yes	Yes	13	528	490	38	33
M 18	30	5	27		2.2	5.3	2.2				1.3	15.0	3.2			5.7	20	Yes	15.3	12	417	463	-46	11
T 19	29	7			2.3	5.5	2.3				1.5	15.5	3.3			5.5	20	Yes	14.5	12	455	450	5	-1
W 20	28	7			2.2	5.0	2.2				0.9	16.7	3.0			5.3	19	Yes	Yes	13	434	447	-13	-18
R 21	27	7			2.2	5.3	2.2				0.7	16.1	3.0			5.0	18	Yes	Yes	13	459	443	16	3
F 22	27	7			2.3	5.2	2.3				1.5	16.8	2.4			4.0	18	Yes	13	13	541	510	31	11
S 23	29	7	26		2.2	5.2	2.2				0.9	18.0	3.2			4.1	18	Yes	13	14	516	509	7	18
S 24	28	7			2.1	4.6	2.1				0.7	18.1	3.3			4.0	17	Yes	Yes	15	520	510	10	16
M 25	28	7			2.2	4.5	2.2				1.5	18.0	3.0			3.9	17	Yes	Yes	14	511	498	13	10
T 26	28	5			2.3	4.3	2.3				1.5	15.8	3.1			4.0	18	Yes	13.5 / 13.4	13	464	490	-26	-1
W 27	27	5			2.3	4.1	2.3				1.0	17.0	3.0			2.7	15	Yes	Yes	14	466	505	-39	-17
R 28	26	5			2.2	4.5	2.2				1.0	14.7	3.3			3.8	17	Yes	Yes	12	481	520	-39	-35
F 29	25	5			1.9	4.6	1.9				1.0	14.4	3.3			3.4	16	Yes	Yes	11	570	519	51	-9
S 30	24	5	27		1.8	3.7	1.7				0.0	15.5	3.4			3.2	14	Yes	14	12	504	516	-12	0
SFD	1,057	187		0	89	189	88	0	0	0	35	554	88	0	10	191	690	0	473	444	16,486	16,931	-445	-454
AF	2,097	372		0	176	374	176	0	0	0	70	1,100	175	0	19	380	1,369	0	937	880	32,700	33,582	-882	-900
	35	6				550					176		175		19	380	23		15.8	14.8				

Note: Cottonwood via the Landers
 Redirected Historic Irrigation Demand Limit = 37 Net Project Water = Gross Project water (Redirected) x 80% up to 5,000 AF/yr during pilot period.
 Saturday South Fork Doyle Ranch Flow measurement, value carries for next week Tuesday-Monday.
 Nork Fork Flow measured at Kernville. As Isabella Dam operator, COB to update. <https://www.spk-wc.usace.army.mil/reports/monthly.html>
 Inferred South Fork Flow on a 3 day running average. USGS SFork at 0500 April 12-18 adjusted accretions down by 2 cfs.
Bold font signifies flow verification by CBK Staff @Patterson Lane

Accumulated Net
880
Pilot Max Net
5000

USGS 11189500

SOUTH FORK KR Flow Verification
Measurement Used Who

https://waterdata.usgs.gov/nwis/measurements/?site_no=11189500

RRB Added Calculation

				Agency	Flow Measurement	Gage	Gage Change	Duration	Mesurement Related	Control	Adjustment	Rating Curve Flow (CFS)	Difference (CFS)	% Error	
1106	3/16/2022	11:55	PDT	Yes	JSOLUM	USGS	33.4	3.26	-0.01	1.58	Poor DebrisLight	NONE	33.32	0.08	0%
1104	2/15/2022	11:39	PST	Yes	JSOLUM	USGS	25.2	3.08	0	1.4	Poor Clear	NONE	25.11	0.09	0%
1103	1/12/2022	13:25	PST	Yes	Dmonsalve	USGS	18.9	2.95	0.03	1.25	Poor Clear	NONE	20.12	-1.22	-6%
1102	11/24/2021	12:23	PST	Yes	dmonsalve	USGS	10	2.7	0.01	1.5	Fair DebrisLight	NONE	12.49	-2.49	-20%
1101	11/18/2021	15:22	PST	Yes	JSOLUM	USGS	9.7	2.68	0	2.12	Poor Clear	NONE	11.98	-2.28	-19%
1100	10/7/2021	12:56	PDT	Yes	DMONSALVE	USGS	4.96	2.3	-0.01	1	Fair VegetationLight	NONE	4.79	0.17	4%
1099	8/9/2021	14:19	PDT	Yes	DMONSALVE	USGS	2.72	2.06	-0.01	0.8	Poor VegetationLight	NONE	2.23	0.49	22%
1098	6/21/2021	14:39	PDT	Yes	Dmonsalve	USGS	4.41	2.23	0	0.7	Poor Clear	NONE	3.90	0.51	13%
1097	4/27/2021	14:38	PDT	Yes	DMONSALVE	USGS	28.1	3.13	0	1	Fair Clear	NONE	27.24	0.86	3%
1095	3/15/2021	14:17	PDT	No											
1096	3/15/2021	13:56	PDT	Yes	RGURULE/DMON	USGS	36.7	3.3	0.01	1.13	Poor	NONE	35.37	1.33	4%
1094	2/11/2021	12:05	PST	Yes	RDG	USGS	32.1	3.27	-0.01	1.1	Poor DebrisLight	NONE	33.83	-1.73	-5%
1093	12/7/2020	13:01	PST	Yes	RDG	USGS	13.9	2.82	0.03	1.13	Poor DebrisLight	NONE	15.85	-1.95	-12%
1092	10/20/2020	12:36	PDT	Yes	RDG	USGS	9.92	2.62	0	0.9	Poor Clear	NONE	10.54	-0.62	-6%
1091	8/21/2020	12:25	PDT	Yes	RDG/DWM	USGS	9.38	2.56	-0.01	1.66	Poor Clear	OTHR	9.22	0.16	2%
1090	7/9/2020	14:38	PDT	Yes	DWM	USGS	16.7	2.86	0	1	Poor Clear	NONE	17.09	-0.39	-2%
1089	7/9/2020	12:59	PDT	Yes	DWM	USGS	16	2.86	0	1	Poor Clear	NONE	17.09	-1.09	-6%
1088	4/21/2020	14:31	PDT	Yes	MDR	USGS	232	5.09	-0.01	0.5	Fair	NONE	238.10	-6.10	-3%
1087	2/13/2020	12:24	PST	Yes	RDG/MDR	USGS	67.1	3.75	-0.01	0.5	Good	NONE	64.48	2.62	4%
1086	2/13/2020	10:35	PST	Yes	RDG/MDR	USGS	64.3	3.71	1	0.5	Fair	NONE	61.40	2.90	5%
1085	2/12/2020	16:28	PST	No											
1084	12/17/2019	13:31	PST	Yes	KSF/TAO	USGS	49.1	3.55	0	0.3	Fair Clear	NONE	50.08	-0.98	-2%
1083	12/6/2019	11:28	PST	Yes	RDG/BRG	USGS	56.5	3.7	-0.01	1.4	Fair DebrisLight	NONE	60.65	-4.15	-7%
1082	10/16/2019	13:10	PDT	Yes	JDM	USGS	35.6	3.34	0	0.6	Poor Clear	NONE	37.49	-1.89	-5%
1081	8/26/2019	12:06	PDT	Yes	DMC	USGS	32.6	3.32	0	0.74	Poor Clear	NONE	36.42	-3.82	-10%
1080	7/31/2019	14:09	PDT	Yes	DMC	USGS	67	3.87	-0.01	0.8	Poor Clear	NONE	74.34	-7.34	-10%
1079	6/14/2019	8:15	PDT	No											
1078	4/19/2019	13:21	PDT	Yes	DMC/NRH	USGS	1580	7.45	0.03	1.1	Poor	NONE	1435.72	144.28	10%
1077	3/13/2019	11:22	PDT	Yes	NRH	USGS	251	5.19	0	0.4	Poor Clear	NONE	259.51	-8.51	-3%
1076	2/7/2019	12:46	PST	Yes	DMC	USGS	72.6	3.9	-0.03	0.9	Fair Clear	NONE	76.95	-4.35	-6%
												All Range	99.09	3.87	-2%
												Critical Range	30.92	-1.05	-3%

***Q (Accretions) = Q(doyle ranch) + Q(Nicoll) + Q (Smith) + Q(Landers) - Q(USGS gauge)									
Date	QAccretions (calculated)	QAccretions (used)	Qusgs	QDoyle Ranch	QNicoll	QSmith	QLanders	Notes:	
3/16/2022	9.1	N/A	31.8	9.3	10.5	11.3	9.8	**estimated 3 cfs bypass from Nicoll to river, meter read	
3/19/2022	10.9	N/A	37.0	12.4	11.5	12.0	11.9	**estimated 2.7 cfs bypass from Nicoll to river, meter read	
3/26/2022	4.4	4	62.9	20.4	10	11.63	25.22	**estimated 10 cfs bypass from Nicoll to river	
4/2/2022	8.5	8.5	46	40.83	2.4	9.96	1.27	* 5am USGS Q	
4/9/2022	7.0	5	43.2	37.6	2.73	8.14	1.77		
04/18/2022	7.2	7.2	29.9	26.84	3.23	5.74	1.33	Flowtrack Doyle Ranch @ 12:30	
04/23/2022	5.3	5.3	28.6	25.71	3.22	4.07	0.86		
4/30/2022	10.5	5	23.9	27.8	3.4	3.2	0	Used 7 cfs, then adjusted again after meeting with city to 5 cfs (05/04)	
5/9/2022	8.8	5	17.1	13.84	2.73	8.29	1		

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT - ONYX RANCH
MONTHLY GROUNDWATER MONITORING RUN
APR

2022

Well Name	DATE	Depth to Water (ft)	Notes
Onyx Store - Domestic	5/2/2022	43.8	
Ranch HQ - Domestic	5/2/2022	18	
Landers Sand - Old Ag Well	5/2/2022	20.4	
Onyx Store - Old Ag Well	4/29/2022	21.2	
Mack Well	5/2/2022	25	
Nicoll Field - Old Ag Well	5/2/2022	18	
Mack Field West - Domestic	5/2/2022	15.1	
Gibboney-2 Piezo	5/2/2022	8.4	
Gibboney-3 Piezo	5/2/2022	7.8	
Boone Piezo	4/29/2022	9	
Lieb Piezo	5/2/2022	8.7	
Pruitt Piezo	4/29/2022	15	
Scodie Well	4/29/2022	27.5	
Pruitt Well	4/29/2022	17	
Nicoll Well	5/2/2022	18.5	
Mack Piezo	4/29/2022	20.5	