TEAM
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Dr. Bob Harrington
Inyo County Water Department
135 South Jackson Street
Independence, CA 93526

June 1, 2017

RE: Summary of Hydrologic Monitoring Activities, May 2017
Rose Valley, Inyo County, California
Hay Ranch Project Conditional Use Permit #2007-03

Dear Dr. Harrington:

This letter summarizes hydrologic monitoring activities conducted in May 2017 by TEAM Engineering & Management, Inc. (TEAM), related to the Hay Ranch Water Extraction Project and CUP #2007-03.

Background

As outlined in the Hay Ranch Water Extraction Final EIR's Hydrologic Monitoring and Mitigation Plan (HMMP), *Phase 1: Monitoring System Setup and Supplemental Data Collection* occurred prior to December 25, 2009 at monitoring points throughout Rose Valley. With the initiation of pumping by Coso Operating Company, LLC (COC) on December 25, 2009, the Hay Ranch Water Extraction Project entered into the *Phase 2: Startup Monitoring and Reporting* period. *Phase 3: Model Recalibration and Redefinition of Pumping Rates and Durations* occurred from September 2010 to April 2011, with recalibration of the groundwater model by Daniel B. Stephens & Associates (DBS&A) and with redefinition of pumping rates and durations by Inyo County Water Department (ICWD). With the April 1, 2011 issuance of the ICWD's "Addendum to the HMMP for CUP#2007-003/Coso Operating Company, LLC" (2011 ICWD Addendum) the project entered *Phase 4: Ongoing Monitoring, Mitigation and Reporting*. In 2013 further model revision occurred with results and new trigger levels detailed in ICWD's August 30, 2013 letter to COC regarding Conditional Use Permit #2007-003/Coso. In June 2014 further model revision was conducted by DBS&A with results and new trigger levels detailed in ICWD's June 27, 2014 letter to COC regarding Conditional Use Permit #2007-003/Coso. On June 20, 2016 the ICWD extended the June 30, 2016 cessation of pumping date to September 30, 2016 which allowed COC to pump up to the remaining volume from the 1,614 AF allowed for the previous year, as long as all other conditions of the CUP #2007-03 were adhered to.

During the July through September 2016 extended pumping period, Coso Operating Company pumped approximately 40 AF of groundwater from the Hay Ranch wells. As of October 12, 2016 COC was approximately 186 AF below their 1,614 AF annual limit for the extended pumping period of June 30, 2015 to September 30, 2016. With the current cessation of water export, the Hay Ranch Project entered a water-table recovery monitoring phase.

In May 2017 water levels were observed to be below (exceeding) previously-established trigger levels for two project wells (Lego and Little Lake Ranch North Well), while the remaining seven wells were within their respective trigger levels. It had been anticipated by the project's groundwater model that water levels in wells located near the Hay Ranch production pumping would begin to recover after cessation of pumping but that groundwater levels in many wells located more distant from Hay Ranch would continue to drop after the cessation of pumping. This lag effect is due to the cone of depression from the Hay Ranch pumping communicating and equalizing southward through groundwater flow in Rose Valley. Field measurements of groundwater levels in Cal Pumice, HR 1A-1C, HR 2A-2C, Coso Junction Store and Coso Junction Ranch

wells (northern wells with proximity to the Hay Ranch) indicate that groundwater levels have been generally recovering since June 2016. Groundwater levels in Lego, G36, and Cinder Road wells (southern wells more distant from Hay Ranch) have generally continued to decline since the cessation of pumping through May 2017, which supports model predictions.

Groundwater level monitoring will continue in Rose Valley to track the continued changes in groundwater levels (both recovery and/or decline) and to continue to monitor the Little Lake system. As outlined in the June 27, 2014 letter from the ICWD to COC, existing trigger levels were set through June 30, 2016. These triggers are no longer an accurate predictor of potential impacts to Little Lake Ranch groundwater discharge, but these triggers will continue to be reported as a frame of reference. As more post-pumping data is collected, an additional groundwater model recalibration could be conducted to determine the ongoing accuracy of the Rose Valley groundwater model's predictions and determine whether any additional groundwater pumping by COC could be considered without causing a 10% or greater decline in water flowing into Little Lake.

Monitoring and Reporting

During the May 2017 monthly hydrologic data collection event at the monitoring locations in the Rose Valley area, static depth-to-water (DTW) measurements, one visual observation of the Little Lake Ranch (LLR) Siphon Well Outflow and three sets of flow rates were collected by TEAM, as summarized in the attached table (Table 1). Data for this monthly field event was collected on May 17 and 18, 2017. Pressure transducer data was downloaded from monitoring units including one "BaroTroll" which records barometric pressure. Also in March, April and May DTW measurements from LADWP 816 Well were requested from LADWP personnel but have not been received as of the date of this report.

Figure 1 presents the combined amount of groundwater pumped from the Hay Ranch North and South wells, in acre-feet, from December 25, 2009 through May 17, 2017 compared to the maximum allowable pumping amounts. The total amount of groundwater extracted from the Hay Ranch property from December 25, 2009 to May 17, 2017 (Hay Ranch CUP project total) is approximately 16,510 AF. The maximum allowable pumping rate was 3,000 acre-feet per year (AFY) for December 25, 2009 through December 31, 2010; was 4,839 AFY from January 1, 2011 through August 30, 2013; was 3,040 AFY from September 2013 through June 2014; and was 1,614 AFY from July 1, 2014 to June 30, 2016, extended by ICWD to September 30, 2016. As indicated on Figure 1, Coso Operating Company has pumped less than the maximum allowable amount of groundwater from the Hay Ranch Wells, for each respective period.

Trigger Levels and Maximum Acceptable Drawdowns

In Table 1 of the June 27, 2014 ICWD Letter to Coso Operating Company, Drawdown at Cessation of Pumping Trigger Levels (Trigger Levels) and Maximum Acceptable Drawdowns have been set for specific monitoring wells, based on a maximum allowable pumping rate of 1,614 AFY starting on July 1, 2014.

Based on the manual depth to water (DTW) data collected by TEAM on May 17-18, 2017, the Water Level at the Little Lake Ranch North Well (LLR North) was measured in exceedance of its Trigger Level established for the 2015-2016 pumping period, by 0.08 feet. The Lego Well was measured in exceedance of its Trigger Level by 0.29 feet.

Based on data collected by TEAM during the April to May 2017 monitoring period, none of the other Trigger Levels were exceeded at Hay Ranch Project monitoring wells which have baselines and trigger levels established (Table 2). No Maximum Acceptable Drawdown levels have been reached during COC pumping under CUP #2007-03.

Operational Notes

There were no significant operational issues observed during the reporting period.

Data Transmittal

TEAM posted updates to the "Coso" database on the ICWD web server. Current Hay Ranch Project hydrographs in PDF form were uploaded to the ICWD website (www.inyowater.org).

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If you have any questions or require additional information, please contact TEAM at your convenience.

Sincerely,

TEAM Engineering & Management, Inc.

Greg M. Foote
Senior Environmental Scientist

TABLE 1
Field Observations of Rose Valley Hydrologic Monitoring Points
May 2017

Project Name:	**Hay Ranch Project HMMP**	Date: May 17-18, 2017
Location:	**Rose Valley, Inyo County**	
Observer(s):	G. Foote	Page: 1 of 1

Well ID	Monitoring Point	Date	Time	DTW (ft)	Flow (cfs)	GWE (ft amsl)	Method	Transducer Log Interval	Notes
RV-10	Dews	NM	NM	NM	NA	NM	TEAM manual read	NA	
RV-20	LADWP 816	NM	NM	NM	NA	NM	LADWP manual read	NA	Data provided by LADWP
RV-30	Cal Pumice	05/17/17	9:56	253.71	NA	3252.18	TEAM manual read	Hourly	
RV-40	Dunmovin	NM	NM	NM	NA	NM	TEAM manual read	NA	Discontinued due to new in-well infrastructure
RV-50	Hay Ranch North	05/17/17	13:00	NM	No	NM	TEAM manual read	NA	3,342,415,853 gallons (10,257 AF) pumped since 12/25/09
RV-60	Hay Ranch 1A	05/17/17	13:26	199.86	NA	3232.31	TEAM manual read	Hourly	
RV-61	Hay Ranch 1B	05/17/17	13:20	205.66	NA	3226.19	TEAM manual read	Hourly	
RV-62	Hay Ranch 1C	05/17/17	13:15	202.75	NA	3228.75	TEAM manual read	NA	
RV-70	Hay Ranch South	05/17/17	13:01	NM	No	NM	TEAM manual read	NA	2,037,298,950 gallons (6,252 AF) pumped since 12/25/09
RV-80	Hay Ranch 2A	05/17/17	13:53	201.67	NA	3231.33	TEAM manual read	Hourly	
RV-81	Hay Ranch 2B	05/17/17	13:47	210.13	NA	3222.50	TEAM manual read	Hourly	
RV-82	Hay Ranch 2C	05/17/17	13:44	203.45	NA	3228.65	TEAM manual read	NA	
RV-90	Coso Jct Ranch	05/17/17	10:42	175.52	NA	3227.61	TEAM manual read	NA	
RV-100	Coso Jct Store #1	05/17/17	10:09	146.95	NA	3225.17	TEAM manual read	Hourly	
RV-110	Davis Ranch North Well	05/17/17	10:59	6.56	NA	3886.50	TEAM manual read	Hourly	
RV-111	Davis Ranch South Well	05/17/17	11:07	13.25	NA	3884.81	TEAM manual read	Hourly	Pump installed in DR South well
RV-112	Davis Ranch South Flow	NM	NM	NM	NM	NM	TEAM manual read	NA	Discontinued: Flow actively managed
RV-120	Red Hill Well (BLM)	05/17/17	10:25	140.94	NA	3199.89	TEAM manual read	Hourly	
RV-130	G-36	05/17/17	12:36	182.66	NA	3197.36	TEAM manual read	NA	
RV-140	Lego	05/17/17	12:24	224.63	NA	3198.22	TEAM manual read	Hourly	
RV-150	Cinder Road	05/17/17	11:37	191.99	NA	3185.97	TEAM manual read	Hourly	
RV-160	18-28 GTH	05/17/17	12:07	174.84	NA	3187.74	TEAM manual read	NA	
RV-170	Fossil Falls Campground	05/17/17	11:48	141.91	NA	3174.86	TEAM manual read	NA	
RV-180	LLR North Well	05/18/18	10:13	40.70	NA	3158.40	TEAM manual read	Hourly	
RV-210	LLR Dock Well	05/18/17	10:35	6.28	NA	NA	TEAM manual read	NA	measuring point removed, DTW measured to TOC
RV-220	LLR Stilling Well (lake surface)	05/18/17	10:28	3.78	NA	3147.26	TEAM manual read	Hourly	
RV-230	LLR Little Lake Outflow	05/18/17	10:56	NA	0.29	NA	TEAM manual read	Hourly	
RV-240	LLR Coso Springs Flow	05/18/17	11:21	NA	0.41	NA	TEAM manual read	Hourly	
RV-245	LLR North Culvert Flow	05/18/17	11:53	NA	0.71	NA	TEAM manual read	Hourly	
RV-250	LLR Siphon Discharge	05/18/17	11:40	NA	Yes	NA	TEAM visual read	NA	Siphon Well flowing into Pond 2
RV-260	LLR Hotel Well	05/18/17	9:53	-0.06	NA	3138.84	TEAM manual read	NA	Artesian

NM - not measured; NA - not applicable; IO - Inoperative; UA - Data currently unavailable

DTW - Depth to water in feet (ft) below top of casing or other reference point; a negative DTW indicates that the groundwater elevation is above the surveyed reference point

Flow - In cubic feet per second (cfs)

GWE- Groundwater elevation in feet above mean sea level (ft amsl)

TABLE 2
Hay Ranch Project Groundwater Baselines and Trigger Levels
May 2017

Well ID	Monitoring Point	Baseline GWE[1] (feet amsl)	Recent Date of Measurement	Recent GWE (feet amsl)	Recent GWE Compared to Baseline (feet)	Drawdown Trigger Level[3] (feet)	Recent GWE Compared to Trigger Level (feet)	Recent GWE Above Max DD[2] (feet)
RV-80	HR 2A	3240.92	05/17/17	3231.33	-9.59	15.3	5.71	6.91
RV-90	Coso Jct Ranch	3230.65	05/17/17	3227.61	-3.04	9.30	6.26	6.26
RV-100	Coso Jct Store #1	3227.59	05/17/17	3225.17	-2.42	8.30	5.88	5.98
RV-120	Red Hill Well	3200.66	05/17/17	3199.89	-0.77	3.00	2.23	3.03
RV-130	G-36	3198.35	05/17/17	3197.36	-0.99	2.20	1.21	2.31
RV-140	Lego	3199.21	05/17/17	3198.22	-0.99	0.70	-0.29	1.41
RV-150	Cinder Road	3186.92	05/17/17	3185.97	-0.95	1.00	0.05	1.35
RV-160	18-28 GTH	3187.67	05/17/17	3187.74	0.07	0.70	0.77	2.17
RV-180	LLR North Well	3158.88	05/18/17	3158.40	-0.48	0.40	-0.08	0.82

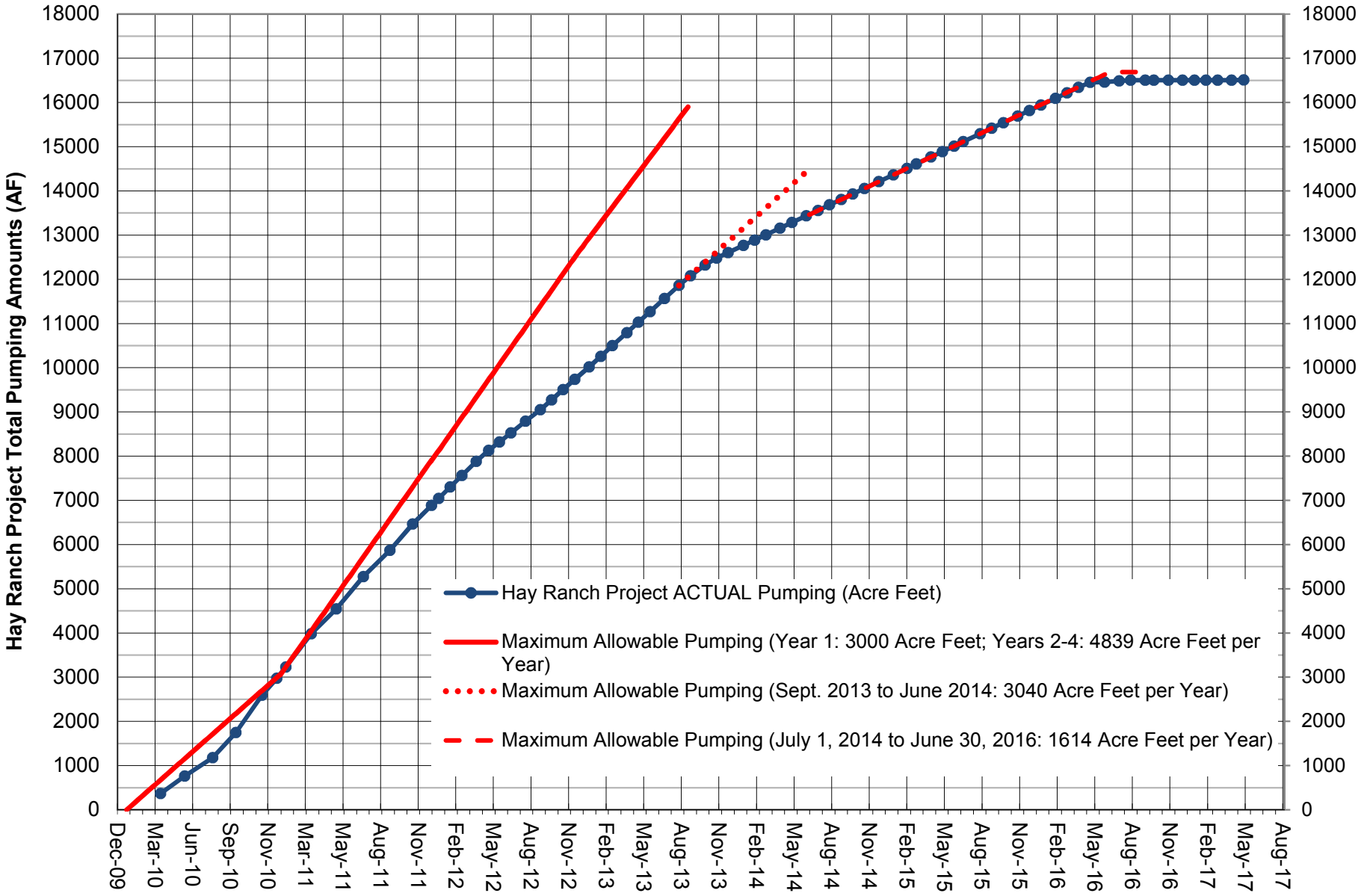
1) GWE: Groundwater elevation measured in feet above mean sea level. Baseline GWEs set January 2010 and March 2011 and approved by Inyo County Water Department (ICWD)

2) Max DD: Maximum Acceptable Drawdown from Table 1 of ICWD's "June 27, 2014 Conditional Use Permit#2007-003/Coso "

3) "Trigger Level at Cessation of Pumping" from Table 1 of ICWD's "June 27, 2014 Conditional Use Permit#2007-003/Coso ".

FIGURE 1

ACTUAL AND MAXIMUM ALLOWABLE PUMPING AMOUNTS (TOTALS) FOR HAY RANCH PROJECT



Note: The "maximum allowable pumping" is based on a pumping rate of 3000 AF/yr for 12/09 to 12/10, 4839 AF/yr for 1/11 to 8/13, 3040 AF/yr from 9/13 to 6/14, and 1,614 AF/yr from 7/14 to 6/16.

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5/20/2017