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

November 9, 2017

RE: Summary of Hydrologic Monitoring Activities, October 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 October 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.

In mid-2017 re-evaluation of pumping rates and duration based on recalibration of the model was conducted by DBS&A. Continuation of pumping, at a rate not to exceed 1,611 acre-feet annually beginning on June 1, 2017, was approved in ICWD's July 27, 2017 letter to COC regarding Conditional Use Permit #2007-003/Coso. Revised Maximum Acceptable Drawdown and Drawdown at Cessation of Pumping values were provided in the DBS&A report titled "Third Updated Groundwater Flow Model and Predictive Simulation Results, Coso Operating Company, Hay Ranch Water Extraction and Delivery System" dated August 24, 2017.

In October 2017 water levels were observed to be below (exceeding) the current trigger level for the Little Lake Ranch North Well, while the remaining seven wells were within their respective trigger levels. A water level was unable to be collected from the Cinder Road Well (RV-150) due to a blockage.

Monitoring and Reporting

During the October 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 October 18 and 19, 2017. Pressure transducer data was downloaded from monitoring units including one "BaroTroll" which records barometric pressure. Also in October, measurements from LADWP 816 Well were requested from LADWP personnel.

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 October 18, 2017 compared to the maximum allowable pumping amounts. The total amount of groundwater extracted from the Hay Ranch property from December 25, 2009 to October 18, 2017 (Hay Ranch CUP project total) is approximately 16,859 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; was 1,614 AFY from July 1, 2014 to June 30, 2016, extended by ICWD to September 30, 2016; and is 1,611 AFY from June 1, 2017 to May 31, 2019.

Trigger Levels and Maximum Acceptable Drawdowns

In Table 4 of the August 24, 2017 DBS&A report, Drawdown at Cessation of Pumping Trigger Levels (Trigger Levels) and Maximum Acceptable Drawdowns were recommended for specific monitoring wells, based on a maximum allowable pumping rate of 1,611 AFY starting on June 1, 2017.

Based on the manual depth to water (DTW) data collected by TEAM on October 18-19, 2017, the water level at the Little Lake Ranch North Well (LLR North) was measured in exceedance of its Trigger Level by 0.04 feet.

Based on data collected by TEAM during the September to October 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). It should be noted that a water level was unable to be collected from the Cinder Road Well (RV-150). No Maximum Acceptable Drawdown levels have been reached during COC pumping under CUP #2007-03.

Operational Notes

The transducer for the Davis Ranch South well became inoperable and was removed from the monitoring well. Discussions between TEAM and ICWD staff determined that the value of replacing this transducer is minimal, therefore it will not be replaced at this time, however monthly depth to water readings will continue to be collected.

The Cinder Road well was damaged by vandals during the reporting period. The transducer was missing and a blockage in the well prevented water level collection. COC personnel cleared the blockage, and it is anticipated that water levels will be able to be collected in November 2017. ICWD has indicated that the transducer does not need to be replaced. There were no other 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

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

Project Name:	**Hay Ranch Project HMMP**	Date: October 18-19, 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	10/18/17	10:20	234.52	NA	3271.37	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	10/18/17	13:45	NM	1.1	NM	TEAM manual read	NA	3,455,927,359 gallons (10,606 AF) pumped since 12/25/09
RV-60	Hay Ranch 1A	10/18/17	14:20	197.34	NA	3234.83	TEAM manual read	Hourly	
RV-61	Hay Ranch 1B	10/18/17	14:11	212.41	NA	3219.44	TEAM manual read	Hourly	
RV-62	Hay Ranch 1C	10/18/17	14:08	206.09	NA	3225.41	TEAM manual read	NA	
RV-70	Hay Ranch South	10/18/17	13:46	NM	No	NM	TEAM manual read	NA	2,037,455,793 gallons (6,253 AF) pumped since 12/25/09
RV-80	Hay Ranch 2A	10/18/17	14:44	201.07	NA	3231.93	TEAM manual read	Hourly	
RV-81	Hay Ranch 2B	10/18/17	14:39	212.44	NA	3220.19	TEAM manual read	Hourly	
RV-82	Hay Ranch 2C	10/18/17	14:33	205.03	NA	3227.07	TEAM manual read	NA	
RV-90	Coso Jct Ranch	10/18/17	11:05	175.54	NA	3227.59	TEAM manual read	NA	
RV-100	Coso Jct Store #1	10/18/17	10:36	146.63	NA	3225.49	TEAM manual read	Hourly	
RV-110	Davis Ranch North Well	10/18/17	11:23	6.58	NA	3886.48	TEAM manual read	Hourly	
RV-111	Davis Ranch South Well	10/18/17	11:38	13.05	NA	3885.01	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)	10/18/17	10:50	141.05	NA	3199.78	TEAM manual read	Hourly	
RV-130	G-36	10/18/17	13:23	182.80	NA	3197.22	TEAM manual read	NA	
RV-140	Lego	10/18/17	13:07	224.77	NA	3198.08	TEAM manual read	Hourly	
RV-150	Cinder Road	10/18/17	NA	NM	NA	NM	TEAM manual read	Hourly	Blockage in well, DTW not possible
RV-160	18-28 GTH	10/18/17	12:49	174.91	NA	3187.67	TEAM manual read	NA	
RV-170	Fossil Falls Campground	10/18/17	12:26	142.00	NA	3174.77	TEAM manual read	NA	
RV-180	LLR North Well	10/19/17	10:27	40.96	NA	3158.14	TEAM manual read	Hourly	
RV-210	LLR Dock Well	10/19/17	10:40	6.73	NA	NA	TEAM manual read	NA	surveyed measuring point removed, DTW measured to TOC
RV-220	LLR Stilling Well (lake surface)	10/19/17	10:48	4.29	NA	3146.75	TEAM manual read	Hourly	
RV-230	LLR Little Lake Outflow	10/19/17	11:07	NA	0.00	NA	TEAM manual read	Hourly	
RV-240	LLR Coso Springs Flow	10/19/17	11:18	NA	0.38	NA	TEAM manual read	Hourly	
RV-245	LLR North Culvert Flow	10/19/17	11:47	NA	0.03	NA	TEAM manual read	Hourly	
RV-250	LLR Siphon Discharge	10/19/17	11:38	NA	Yes	NA	TEAM visual read	NA	Siphon Well flowing into Pond 2
RV-260	LLR Hotel Well	10/19/17	10:11	0.68	NA	3138.10	TEAM manual read	NA	

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
October 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[2] (feet)	Recent GWE Compared to Trigger Level (feet)	Recent GWE Above Max DD[2] (feet)
RV-80	HR 2A	3240.92	10/18/17	3231.93	-8.99	16.9	7.91	8.61
RV-90	Coso Jct Ranch	3230.65	10/18/17	3227.59	-3.06	9.60	6.54	6.64
RV-100	Coso Jct Store #1	3227.59	10/18/17	3225.49	-2.10	8.60	6.50	6.60
RV-120	Red Hill Well	3200.66	10/18/17	3199.78	-0.88	3.40	2.52	3.12
RV-130	G-36	3198.35	10/18/17	3197.22	-1.13	2.70	1.57	2.47
RV-140	Lego	3199.21	10/18/17	3198.08	-1.13	1.30	0.17	1.57
RV-150	Cinder Road	3186.92	9/13/17 (3)	3185.89	-1.03	1.50	0.47	1.37
RV-160	18-28 GTH	3187.67	10/18/17	3187.67	0.00	1.20	1.20	2.30
RV-180	LLR North Well	3158.88	10/19/17	3158.14	-0.74	0.70	-0.04	0.66

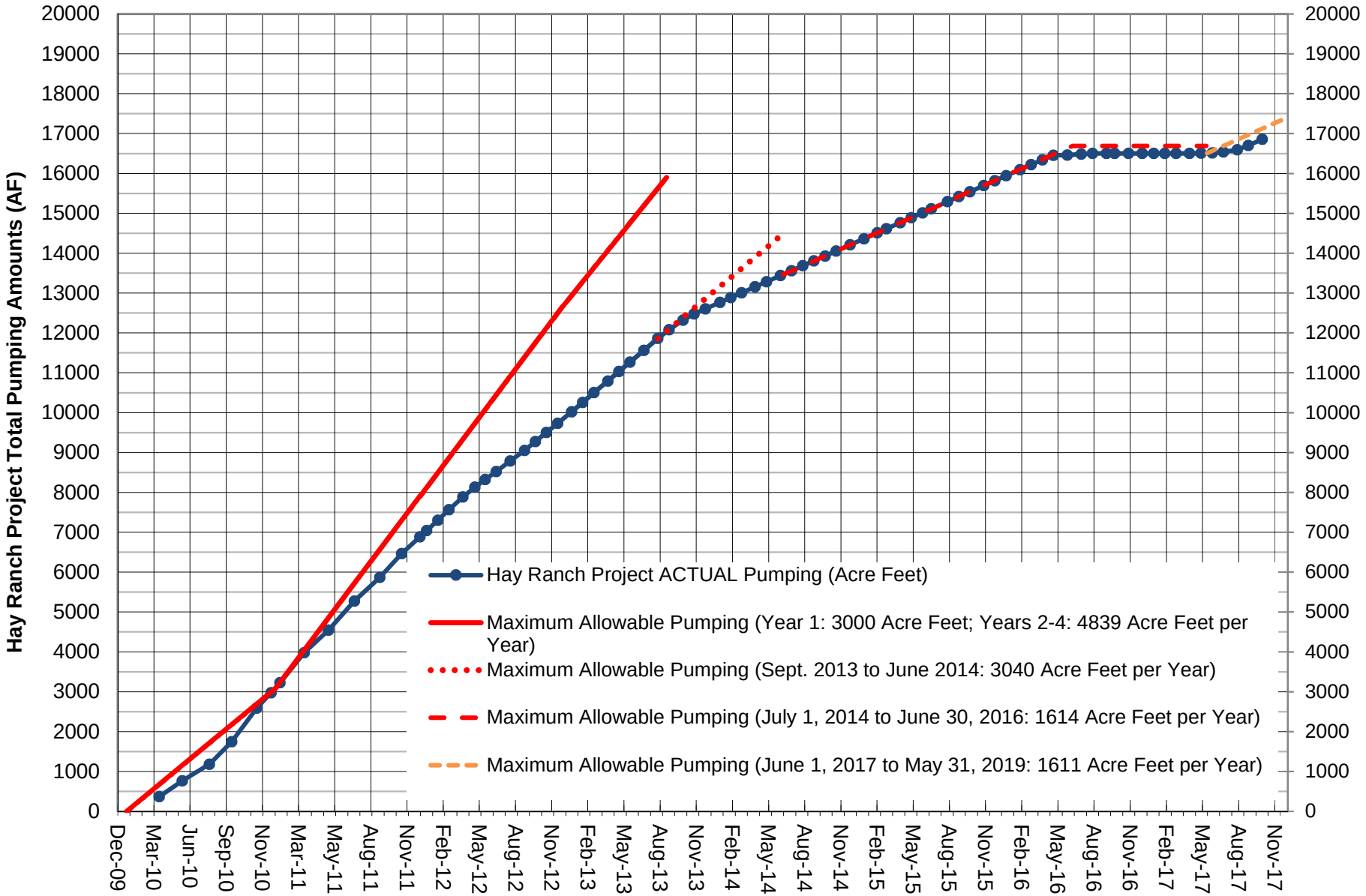
1) GWE: Groundwater elevation measured in feet above mean sea level. Baseline GWEs set January 2010 and March 2011 and approved by Inyo County Water Department (ICWD)

2) Max DD and Trigger Level: Maximum Acceptable Drawdown and Drawdown Trigger Level from Table 4 of the "Third Updated Groundwater Flow Model and Predictive Simulation Results, Coso Operating Company Hay Ranch Water Extraction and Delivery System, Conditional Use Permit (CUP) 2007-003" Dated August 24, 2017.

3) Cinder Road well damaged in October, blockage in well prevented Water Level collection in October.

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, 1,614 AF/yr from 7/14 to 6/16 and 1611 AFY for 6/17 to 5/19.

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11/2/2017