

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

January 30, 2012

**RE: Summary of Hydrologic Monitoring Activities January 2012**  
Rose Valley, Inyo County, California  
Hay Ranch Project Conditional Use Permit #2007-03

Dear Dr. Harrington:

This letter is intended to summarize hydrologic monitoring activities conducted in January 2012 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 (Coso) 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 has entered Phase 4: Ongoing Monitoring, Mitigation and Reporting.

### **Monitoring and Reporting**

During the January 2012 monthly hydrologic data collection event at 30 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 four 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 January 18 and 19. Pressure transducer data were downloaded from 24 units, including one "BaroTroll" measuring barometric pressure. On January 3, a DTW measurement at LADWP 816 Well was taken by LADWP personnel.

At the Hay Ranch Property, Coso has pumped groundwater from two production wells: Hay Ranch North and Hay Ranch South. For the first year of project pumping, December 25, 2009 to December 31, 2010, a total of approximately 2992 acre feet (AF) of groundwater were extracted from these two wells (821 AF from the Hay Ranch North Well, and 2171 AF from the Hay Ranch South Well).

For the second year of project pumping, January 1, 2011 to January 1, 2012, a total of approximately 3895 AF of groundwater have been extracted from the Hay Ranch property (1289 AF from the Hay Ranch North Well, and 2606 AF from the Hay Ranch South Well).

For the third year of project pumping, from January 1, 2012 to January 18, 2012, a total of approximately 156 AF of groundwater have been extracted from the Hay Ranch property (0 AF from the Hay Ranch North Well, and 156 AF from the Hay Ranch South Well).

Figure 1 presents the combined amount of groundwater pumped from the Hay Ranch North and South wells (in AF) from December 25, 2009 through January 18, 2012 compared to a hypothetical pumping amount. The total amount of groundwater extracted from the Hay Ranch property from December 25, 2009 to January 18, 2012 (Hay Ranch CUP project total) is approximately 7043 AF. The hypothetical pumping amount assumes a pumping rate of approximately 3000 acre-feet per year (AFY) for December 25, 2009 through December 31, 2010 and assumes a pumping rate of approximately 4839 AFY from January 1, 2011 through December 31, 2012. These hypothetical pumping rates represent the maximum allowable pumping amounts for the 2010, 2011 and 2012 periods.

### **Trigger Levels and Maximum Acceptable Drawdowns**

In Table 2 of the 2011 ICWD Addendum, drawdown at cessation of pumping trigger levels (Trigger Levels) have been set for specific monitoring wells based on an annual pumping rate of 4839 AFY.

Based on the manual depth DTW data collected by TEAM on January 18-19, 2012, the Trigger Level for the Little Lake Ranch (LLR) North Well (RV180) has been exceeded. The baseline groundwater elevation (GWE) for LLR North, set by Inyo County Water Department in January 2010, is 3158.88 feet. The GWE at LLR North as measured at 11:40 on January 19 was 3158.87 feet. The Trigger Level for LLR North is 0.00 feet. The LLR North GWE has decreased by 0.01 feet compared to its baseline, exceeding its Trigger Level by 0.01 feet (Table 2). The January 19 LLR North GWE was 1.29 feet above its Maximum Acceptable Drawdown level. ICWD was notified of this exceedance in a timely manner.

Based on data collected by TEAM during the January 2012 monitoring event, no other Trigger Levels or Maximum Acceptable Drawdowns have been exceeded at Hay Ranch Project monitoring wells which have baselines and trigger levels established.

### **Operational Notes**

The in-well pressure transducers at HR 1B and HR 1C malfunctioned and were removed from their respective wells in fourth quarter 2011. Replacement pressure transducers were installed in HR 1C on January 1, 2012 and in HR 1B on January 18, 2012.

### **Data Transmittal**

TEAM posted updates to the "Coso" database on the ICWD web server. New Hay Ranch Project hydrographs in PDF form were uploaded to the ICWD website ([www.inyowater.org](http://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.

Keith Rainville  
Staff Geologist

**TABLE 1**  
**Field Observations of Rose Valley Hydrologic Monitoring Points**  
**January 18-19, 2012**

Project Name:	Hay Ranch Project HMMP	Date: January 18-19, 2012
Location:	Rose Valley, Inyo County	
Observer(s):	K. Rainville	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	01/18/12	14:05	231.40		3755.52	TEAM manual read	NA	
RV-20	LADWP 816	01/03/12	10:24	76.34		3438.72	LADWP manual read	NA	Data provided by LADWP
RV-30	Cal Pumice	01/18/12	9:15	255.39		3250.50	TEAM manual read	Hourly	
RV-40	Dunmovin	01/18/12	9:00	302.42		3245.45	TEAM manual read	NA	
RV-50	Hay Ranch North	01/18/12	11:55	NM	No	NM	TEAM manual read	NA	687,502,851 gallons (2110 AF) pumped since 12/25/09
RV-60	Hay Ranch 1A	01/18/12	12:01	202.87		3229.30	TEAM manual read	Hourly	
RV-61	Hay Ranch 1B	01/18/12	12:16	227.53		3204.32	TEAM manual read	Hourly	
RV-62	Hay Ranch 1C	01/18/12	12:09	216.50		3215.00	TEAM manual read	Hourly	
RV-70	Hay Ranch South	01/18/12	11:56	NM	Yes	NM	TEAM manual read	NA	1,607,458,428 gallons (4933 AF) pumped since 12/25/09
RV-80	Hay Ranch 2A	01/18/12	11:35	202.01		3230.99	TEAM manual read	Hourly	
RV-81	Hay Ranch 2B	01/18/12	11:41	232.90		3199.73	TEAM manual read	Hourly	
RV-82	Hay Ranch 2C	01/18/12	11:47	215.33		3216.77	TEAM manual read	Hourly	
RV-90	Coso Jct Ranch	01/18/12	9:32	172.98		3230.15	TEAM manual read	Hourly	
RV-100	Coso Jct Store #1	01/18/12	9:50	146.10		3226.02	TEAM manual read	Hourly	
RV-110	Davis Ranch North Well	01/18/12	12:54	6.46		3886.54	TEAM manual read	Hourly	
RV-111	Davis Ranch South Well	01/18/12	13:08	11.31		3886.75	TEAM manual read	Hourly	
RV-112	Davis Ranch South Flow	01/18/12	13:20	NA	0.12	NA	TEAM manual read	Hourly	
RV-120	Red Hill Well (BLM)	01/18/12	10:08	139.95		3200.88	TEAM manual read	Hourly	
RV-130	G-36	01/19/12	13:40	180.27		3199.75	TEAM manual read	NA	
RV-140	Lego	01/19/12	13:35	222.12		3200.73	TEAM manual read	Hourly	
RV-150	Cinder Road	01/19/12	11:05	191.02		3186.94	TEAM manual read	Hourly	
RV-160	18-28 GTH	01/19/12	13:11	173.80		3188.78	TEAM manual read	Hourly	
RV-170	Fossil Falls Campground	01/18/12	10:47	141.16		3175.61	TEAM manual read	NA	
RV-180	LLR North Well	01/19/12	11:40	40.23		3158.87	TEAM manual read	Hourly	
RV-210	LLR Dock Well	01/19/12	10:10	6.48		3147.66	TEAM manual read	Hourly	
RV-220	LLR Stilling Well (lake surface)	01/19/12	10:20	3.91		3147.13	TEAM manual read	Hourly	
RV-230	LLR Little Lake Outflow	01/19/12	10:20	NA	1.03	NA	TEAM manual read	Hourly	
RV-240	LLR Coso Springs Flow	01/19/12	10:35	NA	0.38	NA	TEAM manual read	Hourly	
RV-245	LLR North Culvert Flow	01/19/12	11:20	NA	1.39	NA	TEAM manual read	Hourly	
RV-250	LLR Siphon Discharge	01/19/12	11:10	NA	Yes	NA	TEAM visual read	NA	Siphon Well flowing into Pond 2
RV-260	LLR Hotel Well	01/19/12	12:00	0.50		3138.28	TEAM manual read	Hourly	

NM - not measured; NA - not applicable; IO - Inoperative

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**  
**January 2012**

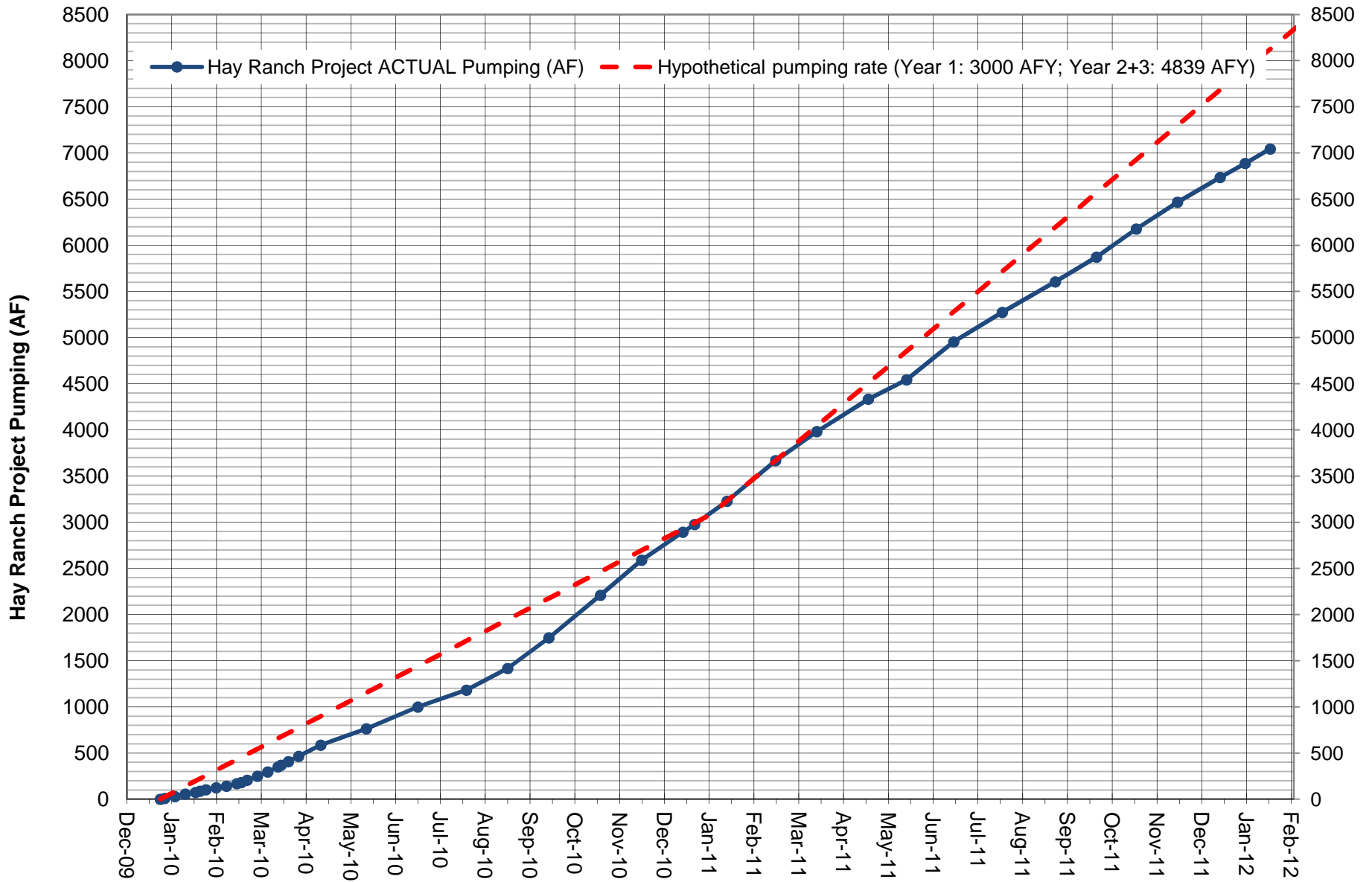
Well ID	Monitoring Point	Baseline GWE <sup>1</sup> (feet amsl)	Recent Date of Measurement	Recent GWE (feet amsl)	Recent GWE Compared to Baseline (feet)	Recent GWE Above Max DD <sup>2</sup> (feet)	Trigger Level At Cessation of Pumping <sup>3</sup> (feet)	Recent GWE Compared to Trigger Level (feet)
RV-40	Dunmovin	3252.73	01/18/12	3245.45	-7.28	16.02	23.2	15.92
RV-80	HR 2A	3240.92	01/18/12	3230.99	-9.93	17.67	27.6	17.67
RV-90	Coso Jct Ranch	3230.65	01/18/12	3230.15	-0.50	11.20	11.3	10.80
RV-100	Coso Jct Store #1	3227.59	01/18/12	3226.02	-1.57	8.53	9.5	7.93
RV-120	Red Hill Well	3200.66	01/18/12	3200.88	0.22	4.12	1.8	2.02
RV-130	G-36	3198.35	01/19/12	3199.75	1.40	4.80	1.0	2.40
RV-140	Lego	3199.21	01/19/12	3200.73	1.52	3.82	0.0	1.52
RV-150	Cinder Road	3186.92	01/18/12	3186.94	0.02	2.32	0.2	0.22
RV-160	18-28 GTH	3187.67	01/19/12	3188.78	1.11	3.21	0.0	1.11
RV-180	LLR North Well	3158.88	01/19/12	3158.87	-0.01	1.29	0.0	-0.01

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

2) Max DD: Maximum Acceptable Drawdown from Table 2 of "Addendum to HMMP for CUP#2007-003/Coso Operating Company, LLC"

3) Trigger Level at Cessation of Pumping from Table 2 of "Addendum to HMMP for CUP#2007-003/Coso Operating Company, LLC"

**FIGURE 1**  
 HYPOTHETICAL AND ACTUAL HAY RANCH PROJECT PUMPING



Note: Coso Operating Co. initiated Hay Ranch Project pumping on 12/25/09.

The "hypothetical pumping rate" is based on a pumping rate of 3000 AF per year for 12/25/09 to 12/31/10, and 4839 AF per year for 1/1/11 to 12/31/11.