

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

July 3, 2014

**RE: Summary of Hydrologic Monitoring Activities June 2014**  
Rose Valley, Inyo County, California  
Hay Ranch Project Conditional Use Permit #2007-03

Dear Dr. Harrington:

This letter summarizes hydrologic monitoring activities conducted in June 2014 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 (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 August 2013 further model revision occurred with results and new trigger levels detailed in ICWD's August 30, 2013 letter to Chris Ellis, Site Manager, Coso Operating Company, LLC regarding Conditional Use Permit #2007-003/Coso. In June 2014 further model revision occurred with results and new trigger levels detailed in ICWD's June 27, 2014 letter to Chris Ellis, Site Manager, Coso Operating Company, LLC regarding Conditional Use Permit #2007-003/Coso.

### **Monitoring and Reporting**

During the June 2014 monthly hydrologic data collection event at 29 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 June 25-26, 2014. Pressure transducer data was downloaded from 24 units, including one "BaroTroll" measuring barometric pressure. Also in June, a DTW measurement at LADWP 816 Well was taken by LADWP personnel.

At the Hay Ranch Property, COC has pumped groundwater from two production wells: Hay Ranch North and Hay Ranch South. For the current year of project pumping, January 2, 2014 to June 25, 2014, a total of approximately 770 AF of groundwater have been extracted from the Hay Ranch property (770 AF from the Hay Ranch North Well, and less than 1 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 acre feet, from December 25, 2009 through June 25, 2014 compared to the maximum allowable pumping amount. The total amount of groundwater extracted from the Hay Ranch property from December 25, 2009 to June 25, 2014 (Hay Ranch CUP project total) is approximately 13,439 AF. The

maximum pumping rate was approximately 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; and was 3,040 AFY from September 2013 thru June, 2014. Coso Operating Company has been and currently is pumping less than the maximum allowable amount of groundwater from the Hay Ranch Wells.

**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) have been set for specific monitoring wells based on a pumping rate of 1,614 AFY starting on July 1, 2014.

Based on manual DTW data collected by TEAM during the June 2014 monitoring event, no Trigger Levels or Maximum Acceptable Drawdowns have been exceeded at Hay Ranch Project monitoring wells which have baselines and trigger levels established.

**Operational Notes**

During the May to June 2014 period, the pressure transducer in Red Hill well (RV120) experienced power issues, and a new battery back-up was installed to correct this problem. Also, seasonal root growth was pulled from the Davis Ranch South outflow flume (RV112).

**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)).

\* \* \* \* \*

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**  
**June 25-26, 2014**

|               |                          |                        |
|---------------|--------------------------|------------------------|
| Project Name: | Hay Ranch Project HMMP   | Date: June 25-26, 2014 |
| 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                             | 06/25/14 | 14:05 | 231.75   |            | 3755.17       | TEAM manual read  | NA                      |   |
| RV-20   | LADWP 816                        | UA       | UA    | UA       |            | UA            | LADWP manual read | NA                      | Data provided by LADWP                                |
| RV-30   | Cal Pumice                       | 06/25/14 | 9:30  | 260.27   |            | 3245.62       | TEAM manual read  | Hourly                  |   |
| RV-40   | Dunmovin                         | NM       | NM    | NM       |            | NM            | TEAM manual read  | NA                      | Discontinued due to new in-well infrastructure        |
| RV-50   | Hay Ranch North                  | 06/25/14 | 12:44 | NM       | Yes        | NM            | TEAM manual read  | NA                      | 2,443,545,559 gallons (7499 AF) pumped since 12/25/09 |
| RV-60   | Hay Ranch 1A                     | 06/25/14 | 13:00 | 200.55   |            | 3231.62       | TEAM manual read  | Hourly                  |   |
| RV-61   | Hay Ranch 1B                     | 06/25/14 | 13:05 | 224.80   |            | 3207.05       | TEAM manual read  | Hourly                  |   |
| RV-62   | Hay Ranch 1C                     | 06/25/14 | 13:10 | 220.70   |            | 3210.80       | TEAM manual read  | Hourly                  |   |
| RV-70   | Hay Ranch South                  | 06/25/14 | 12:45 | NM       | No         | NM            | TEAM manual read  | NA                      | 1,935,743,064 gallons (5941 AF) pumped since 12/25/09 |
| RV-80   | Hay Ranch 2A                     | 06/25/14 | 13:30 | 201.47   |            | 3231.53       | TEAM manual read  | Hourly                  |   |
| RV-81   | Hay Ranch 2B                     | 06/25/14 | 13:25 | 221.95   |            | 3210.68       | TEAM manual read  | Hourly                  |   |
| RV-82   | Hay Ranch 2C                     | 06/25/14 | 13:20 | 212.85   |            | 3219.25       | TEAM manual read  | Hourly                  |   |
| RV-90   | Coso Jct Ranch                   | 06/25/14 | 9:55  | 174.65   |            | 3228.48       | TEAM manual read  | Hourly                  |   |
| RV-100  | Coso Jct Store #1                | 06/25/14 | 10:05 | 147.18   |            | 3224.94       | TEAM manual read  | Hourly                  |   |
| RV-110  | Davis Ranch North Well           | 06/25/14 | 10:20 | 6.55     |            | 3886.51       | TEAM manual read  | Hourly                  |   |
| RV-111  | Davis Ranch South Well           | 06/25/14 | 10:35 | 11.31    |            | 3886.75       | TEAM manual read  | Hourly                  |   |
| RV-112  | Davis Ranch South Flow           | 06/25/14 | 10:50 | NA       | 0.01       | NA            | TEAM manual read  | Hourly                  |   |
| RV-120  | Red Hill Well (BLM)              | 06/26/14 | 12:45 | 140.24   |            | 3200.59       | TEAM manual read  | Hourly                  |   |
| RV-130  | G-36                             | 06/25/14 | 11:35 | 181.55   |            | 3198.47       | TEAM manual read  | NA                      |   |
| RV-140  | Lego                             | UA       | UA    | UA       |            | UA            | TEAM manual read  | Hourly                  |   |
| RV-150  | Cinder Road                      | 06/25/14 | 12:05 | 191.47   |            | 3186.49       | TEAM manual read  | Hourly                  |   |
| RV-160  | 18-28 GTH                        | UA       | UA    | UA       |            | UA            | TEAM manual read  | Hourly                  |   |
| RV-170  | Fossil Falls Campground          | 06/25/14 | 11:50 | 141.48   |            | 3175.29       | TEAM manual read  | NA                      |   |
| RV-180  | LLR North Well                   | 06/26/14 | 10:15 | 40.50    |            | 3158.60       | TEAM manual read  | Hourly                  |   |
| RV-210  | LLR Dock Well                    | 06/26/14 | 11:00 | 6.57     |            | 3147.57       | TEAM manual read  | Hourly                  |   |
| RV-220  | LLR Stilling Well (lake surface) | 06/26/14 | 11:10 | 4.09     |            | 3146.95       | TEAM manual read  | Hourly                  |   |
| RV-230  | LLR Little Lake Outflow          | 06/26/14 | 11:50 | NA       | 0.01       | NA            | TEAM manual read  | Hourly                  |   |
| RV-240  | LLR Coso Springs Flow            | 06/26/14 | 11:40 | NA       | 0.38       | NA            | TEAM manual read  | Hourly                  |   |
| RV-245  | LLR North Culvert Flow           | 06/26/14 | 12:10 | NA       | 0.71       | NA            | TEAM manual read  | Hourly                  |   |
| RV-250  | LLR Siphon Discharge             | 06/26/14 | 12:00 | NA       | Yes        | NA            | TEAM visual read  | NA                      | Siphon Well flowing into Pond 2                       |
| RV-260  | LLR Hotel Well                   | 06/26/14 | 9:45  | 0.66     |            | 3138.12       | TEAM manual read  | Hourly                  |   |

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**  
**June 30, 2014**

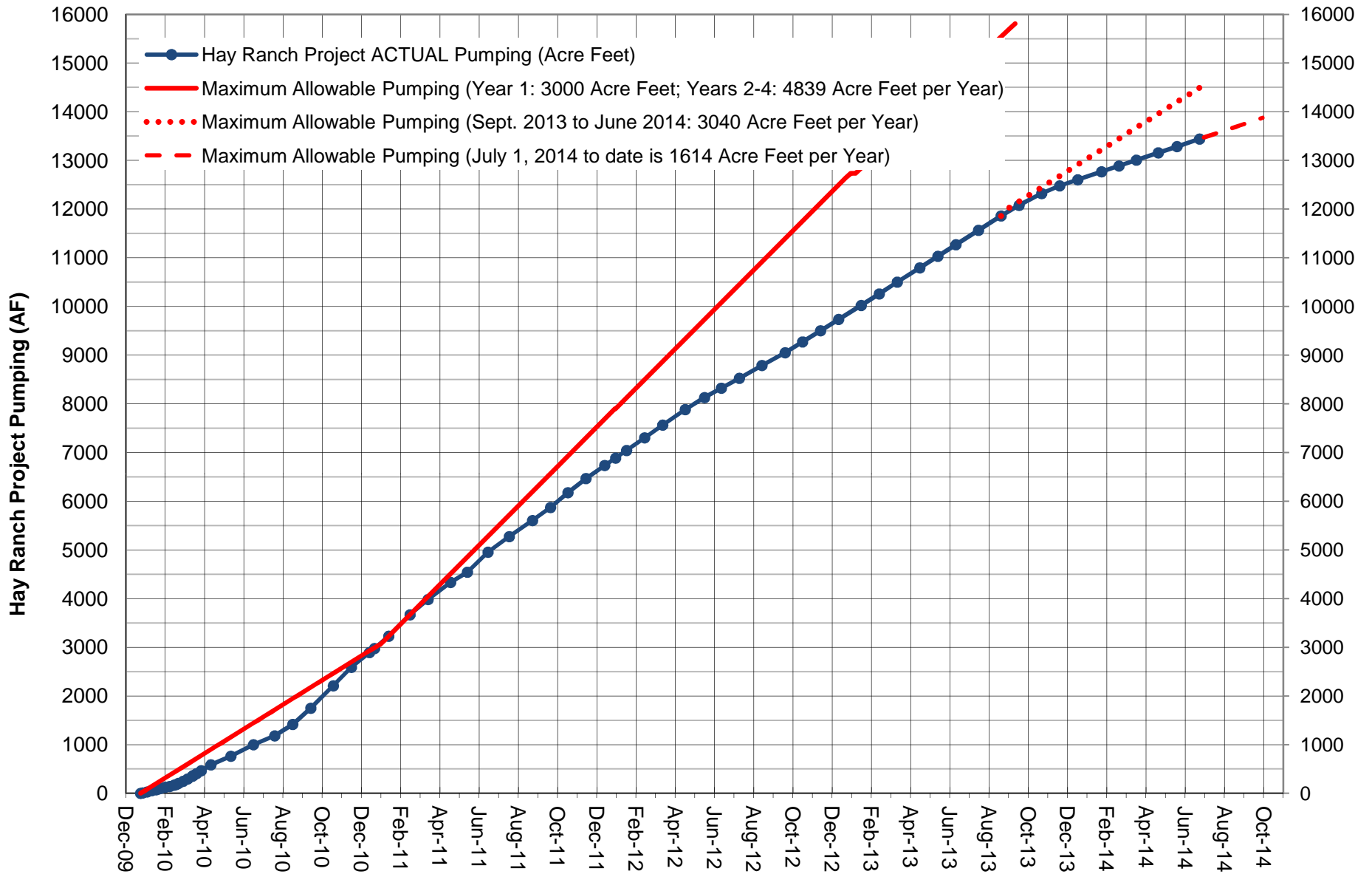
| Well ID | Monitoring Point  | Baseline GWE <sup>1</sup><br>(feet amsl) | Recent Date<br>of Measurement | Recent GWE<br>(feet amsl) | Recent GWE<br>Compared to Baseline<br>(feet) | Trigger Level<br>At Cessation of Pumping <sup>3</sup><br>(feet) | Recent GWE<br>Compared to Trigger Level<br>(feet) | Recent GWE<br>Above Max DD <sup>2</sup><br>(feet) |
|---------|-------------------|--|-------------------------------|---------------------------|--|---|---|---|
| RV-80   | HR 2A             | 3240.92                                  | 06/25/14                      | 3231.53                   | -9.39  | 15.3  | 5.91  | 7.11  |
| RV-90   | Coso Jct Ranch    | 3230.65                                  | 06/25/14                      | 3228.48                   | -2.17  | 9.3   | 7.13  | 7.13  |
| RV-100  | Coso Jct Store #1 | 3227.59                                  | 06/25/14                      | 3224.94                   | -2.65  | 8.3   | 5.65  | 5.75  |
| RV-120  | Red Hill Well     | 3200.66                                  | 06/26/14                      | 3200.59                   | -0.07  | 3.0   | 2.93  | 3.73  |
| RV-130  | G-36              | 3198.35                                  | 06/25/14                      | 3198.47                   | 0.12   | 2.2   | 2.32  | 3.42  |
| RV-140  | Lego              | 3199.21                                  | 05/21/14                      | 3199.45                   | 0.24   | 0.7   | 0.94  | 2.64  |
| RV-150  | Cinder Road       | 3186.92                                  | 06/25/14                      | 3186.49                   | -0.43  | 1.0   | 0.57  | 1.87  |
| RV-160  | 18-28 GTH         | 3187.67                                  | 05/21/14                      | 3188.28                   | 0.61   | 0.7   | 1.31  | 2.71  |
| RV-180  | LLR North Well    | 3158.88                                  | 06/26/14                      | 3158.60                   | -0.28  | 0.4   | 0.12  | 1.02  |

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 FOR HAY RANCH PROJECT



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/yr for 12/09 to 12/10, 4839 AF/yr for 1/11-8/13, and 3040 AF/yr from 9/13 to date.