



Facility 149012  
Received 3/9/2015  
Document 2314206

Field Office: 21459 County Road 5 Rifle, Colorado 81650  
Division Office: PO Box 6501 Englewood, Colorado 80155

March 10, 2014

Love Ranch Centralized E&P Waste Annual Report  
Piceance Creek Facility  
Facility ID: 149012

Mr. Alex Fischer  
COGCC Environmental Supervisor – Western Colorado  
1120 Lincoln Street, Suite 801  
Denver, Colorado 80203

Dear Mr. Fischer,

Please find enclosed the Annual Report for the Love Ranch Centralized E&P Waste Facility #149012.

If you should have any concerns or questions regarding the contents related to this submittal please contact me directly at (970) 675-4122 or email at [Jessica\\_Dooling@xtoenergy.com](mailto:Jessica_Dooling@xtoenergy.com). Thanks again for your assistance.

Respectfully,

A handwritten signature in blue ink, appearing to read 'Jessica Dooling', with a long horizontal flourish extending to the right.

Jessica Dooling  
Piceance EH&S Supervisor

CC: Stan Spencer  
Kyle Littrell



Field Office: 21459 County Road 5 Rifle, Colorado 81650

Division Office: PO Box 6501 Englewood, Colorado 80155

Centralized E&P Waste Management Facility

Love Ranch Evaporation Pond

COGCC Facility No. 149012

Rio Blanco County, Colorado

Reporting Year: 2014

## 1. Introduction

---

Love Ranch Centralized E&P Waste site is located in Rio Blanco County, approximately 45 miles north/northwest of Rifle, Colorado. This site includes a salt water disposal (SWD) pond and its associated pumping and storage facilities. The purpose of the pond is to retain produced water from natural gas operations and production.

Location: SWNW Section 9, Township 2 South, Range 97 West

Latitude/Longitude: 39.892642 / -108.296246



## 2. 2014 Summary of Activities:

---

The facility was utilized for rotating storage of ~393,000 bbls of produced water from January 1, 2014 through 11/12/2014. Current produced water storage is ~263,526 bbls. During this period the reservoir was utilized for storage of excess produced water above and beyond the capacity of the Produced Water Distribution and Disposal System, which resulted in a total inflow of ~217,979 bbls, an outflow of ~133,576 bbls and ~354,387 bbls for recycled use in operational needs. Approximately 3,352,131 bbls were injected to disposal. (See Sec.6 below for actual volumes logged by operations)

A produced water release occurred at the facility on March 3, 2014 (Form 19 DOC# 2147915). The incident involved the release of ~42 bbls of produced water onto the access road to the pond from a faulty camlock connection while transferring produced water to the storage pond. All standing water was removed, remediation of impacts and Table 910-1 confirmation sampling was completed. COGCC Notice of Completion was issued for Form 19 DOC# 2147915 on 4/23/2014.

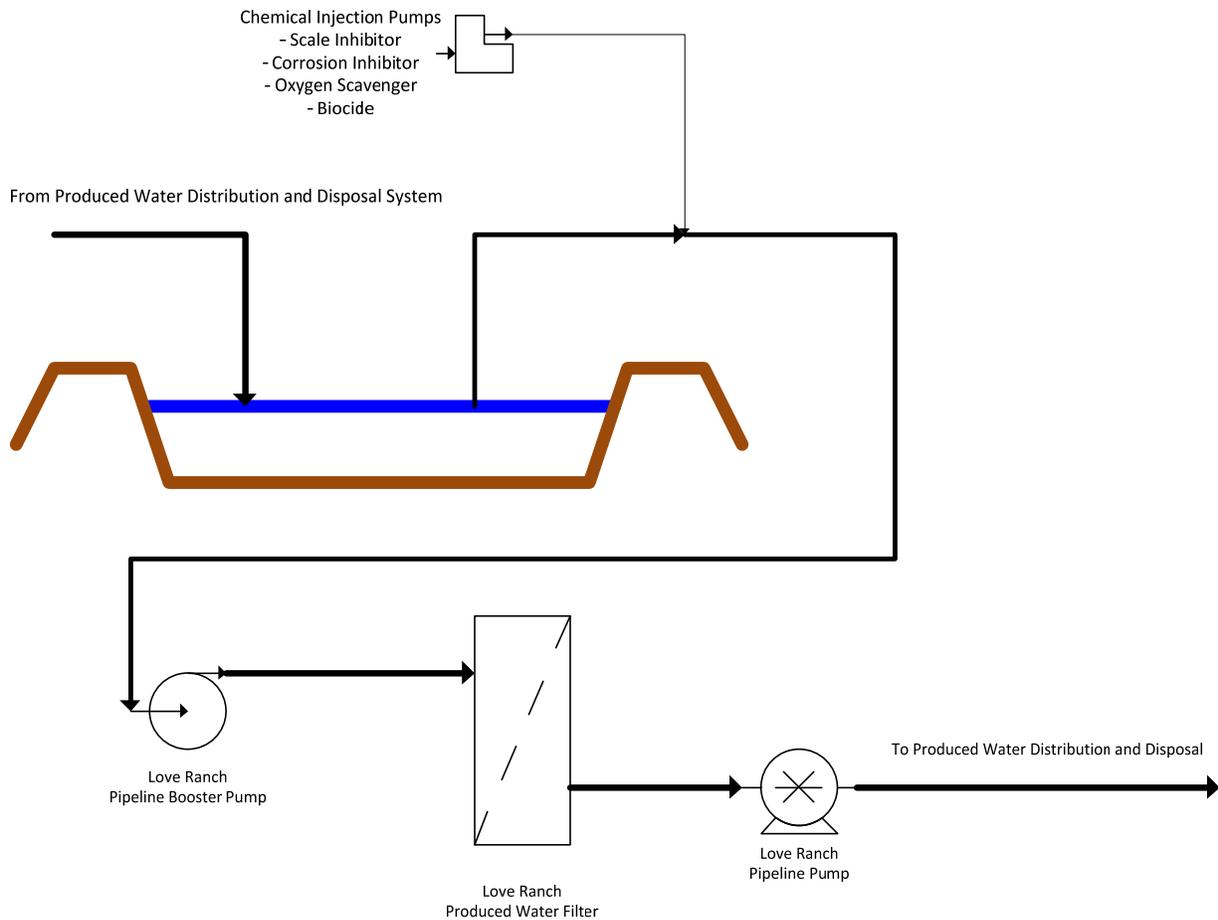
### 3. Facility Flow Process:

---

The purpose of the Love Ranch Centralized E&P Waste site is to store produced water in the event disposal/alternative usage is not available. A pipeline pump returns produced water from Love Ranch Pond back to the Produced Water Distribution and Disposal (PWDD) System. Water accumulates in the pond on demand for storage/surge or as a pressure relief for the PWDD system specifically when insufficient users (well drilling, completions and disposal injection wells) exist in comparison to production. Conversely, when users exceed production, produced water that has accumulated in the pond can be pumped back to the pipeline at a low rate, 2000 BBL/day, for use or disposal. All produced water pumped from Love Ranch pond is filtered and treated with oxygen scavenger, biocide, corrosion inhibitor, and scale inhibitor to protect the pipeline, downstream equipment and wells from corrosion and deposits. The Love Ranch Pond can store up to 393,000 BBL of produced water.

### 4. Facility Flow Schematic:

---



## 5. Monitoring Process:

---

Surface monuments are monitored annually. The testing frequency will change to every two years if there is no significant movement ( $>0.1'$  in lateral and  $>0.3'$  in vertical) detected in the first five years. The monument movement will be plotted and interpreted after every inspection. Due to the nature of the soil, the vertical displacement is anticipated to follow an asymptotic decline. Trained survey personnel will monitor the monuments using precise survey equipment.

Piezometers are monitored quarterly. If water levels are detected in the piezometers, samples will be taken to determine water quality.

Seepage through the dam will be collected in the toe drain system and piped to a manhole. Liquid levels in the manhole will be monitored monthly for normal operations. When the pond is more than 50% full by height, liquid levels in the manhole will be measured weekly. The seepage rate through the toe drain will be measured quarterly by capturing the liquid flowing into the manhole and measuring the volume vs. time.

The pond level readings of the pond shall be recorded at the time of all readings.

All dam instrumentation (including piezometers, drains, reservoir gage, and survey monuments) shall be monitored immediately following an earthquake where ground motions are felt in the area or the owner is informed of seismic activity in the vicinity. Results of the inspection reports and instrumentation readings should be immediately sent to the State Engineer.

All measurements and descriptive details that are required to monitor the performance of the dam will be recorded. The information will be grouped into the following three categories:

**LOCATION** — the location of any questionable area or condition will be accurately described to allow that area or condition to be evaluated. The location along the length of the dam, as well as height above the toe or distance down from the dam's crest, will be established and recorded.

**EXTENT OF AREA**—the length, width, and depth or height of any area where a suspected problem is found shall be recorded.

**DESCRIPTIVE DETAIL**—a brief yet detailed description of a condition or observation will be given.

Some description items are:

- Quantity of Toe Drain Intercept Outflow
- Quantity of Seepage from Point and Area Sources
- Length, Displacement, and Depth of Cracks
- Is Area Moist, Wet, or Saturated
- Is Protective Cover Adequate
- Is Surface Drainage Adequate
- Sloughing / Erosion of Slopes
- Settlement / Depression Location, Depth, Length, and Width
- Do Slopes appear too steep
- Does Deterioration appear to be rapid or slow
- Have Conditions Changed

## **Monitoring Process continued:**

---

The above listing of inspection findings that must be recorded is not meant to be a complete list but is to serve as a guide. If an inspector thinks a condition has changed since the last inspection it will be documented and the State Engineer will be contacted. Photos will also be taken of the area, carefully noting the date and writing a description of the scene shown on the photo.

Dam Inspections will be conducted quarterly. It is the responsibility of those obtaining the data to know if readings are within normal historical and/or design operating parameters. Emergency conditions should be assumed if readings exceed normal historical and/or design operating parameters and immediate notification of the State Engineer is required.

## **6. Waste Tracking:**

---

2014 Volumes

Location	Produced Water Inflow (bbl.)	Produced Water Outflow (bbl.)	
		Injected/Disposal	Recycled
Love Ranch Pond	217,979	3,352,131	354,387

## **7. Monitoring Reports:**

---

- Annual Settlement Monument Survey (Attachment A)
- Quarterly Piezometers Report (Attachment B)
- Quarterly Dam Inspection Report (Attachment C)

## **8. Sampling Reports:**

---

Samples were collected for 2014. The facility is currently being used for storage of ~263,526 bbls of produced water. Please see #2 above.

**Table 1**  
**Location: Love Ranch 8 E&P Facility**  
**Lab Summary - Annual Sampling**

Last update 10/8/2014

Analytical Parameter (with units)	E&P Facility			Background					COGCC	Maximum based on Background
	Solids	Produced Water Inlet	Produced Water Outlet	#1	#2	#3	#4	#5	Table 910-1 Concentration Levels	
<b>Accutest Job #</b>	<b>D62707 (9/25/14)</b>	<b>D62724 (9/25/14)</b>		<b>D20760 (1/27/11)</b>					-	-
Sample type (Composite/Discrete)	C	D	D	D	D	D	D	D	-	-
TPH (GRO) (mg/Kg)	3560	295	20.9	-	-	-	-	-	-	-
TPH (DRO) (mg/Kg)	20500	110	24.5	-	-	-	-	-	-	-
TPH (GRO + DRO) (mg/Kg)	24060	405	45.4	-	-	-	-	-	500	-
Benzene (mg/Kg)	12.200	15.100	0.265	-	-	-	-	-	0.170	-
Toluene (mg/Kg)	94.300	35.800	0.961	-	-	-	-	-	85	-
Ethylbenzene (mg/Kg)	20.100	2.040	0.0768	-	-	-	-	-	100	-
Xylenes (total) (mg/Kg)	370.000	33.800	1.540	-	-	-	-	-	175	-
Acenaphthene (mg/Kg)	ND	-	-	-	-	-	-	-	1000	-
Anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	1000	-
Benzo(A)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	0.22	-
Benzo(A)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	0.022	-
Benzo(B)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	0.22	-
Benzo(K)fluoranthene (mg/Kg)	ND	-	-	-	-	-	-	-	2.2	-
Chrysene (mg/Kg)	0.827	-	-	-	-	-	-	-	22	-
Dibenzo(A,H)anthracene (mg/Kg)	ND	-	-	-	-	-	-	-	0.022	-
Fluoranthene (mg/Kg)	0.531	-	-	-	-	-	-	-	1000	-
Fluorene (mg/Kg)	8.790	-	-	-	-	-	-	-	1000	-
Indeno(1,2,3,C,D)pyrene (mg/Kg)	ND	-	-	-	-	-	-	-	0.22	-
Naphthalene (mg/Kg)	11.800	-	-	-	-	-	-	-	23	-
Pyrene (mg/Kg)	0.540	-	-	-	-	-	-	-	1000	-
Electrical Conductivity (mmhos/cm)	5.110	-	-	-	-	-	-	-	4	-
Sodium Adsorption Ratio (SAR)	68.4	-	-	-	-	-	-	-	12	-
pH	8.34	-	-	-	-	-	-	-	6-9	-
Arsenic (mg/kg)	48.4	-	-	13.5	15.9	9.8	5.5	4.2	0.39	17.5
Barium (mg/kg)	2280	-	-	-	-	-	-	-	15000	-
Cadmium (mg/kg)	<16	-	-	-	-	-	-	-	70	-
Chromium (III) (mg/Kg)	372	-	-	-	-	-	-	-	120000	-
Chromium (VI) (mg/Kg)	<1.0	-	-	-	-	-	-	-	23	-
Copper (mg/kg)	340	-	-	-	-	-	-	-	3100	-
Lead (inorganic) (mg/kg)	165	-	-	-	-	-	-	-	400	-
Mercury (mg/kg)	8.3	-	-	-	-	-	-	-	23	-
Nickel (mg/kg)	315	-	-	-	-	-	-	-	1600	-
Selenium (mg/kg)	<79	-	-	-	-	-	-	-	390	-
Silver (mg/kg)	<95	-	-	-	-	-	-	-	390	-
Zinc (mg/kg)	<47	-	-	-	-	-	-	-	23000	-
% Solids	60.8	N/A	N/A	85.9	80.3	82.2	84.3	79.2	-	-

Notes:

1) ND = not detectable to the laboratory detection limit.

2) Results highlighted in yellow exceed Table 910-1 concentration levels. Results highlighted in Gray exceed Table 910-1, but are below background levels.

3) "-" indicates no analysis.

# ATTACHMENT A

Reservoir Name: Love Ranch Evaporation Pond  
 Company: ExxonMobil Corp.  
 Water Division: 6  
 Dam I.D.: C-1881  
 Water District: 43

Date	Observer	Reservoir Level Gage Height ft	SMK 1 (8+00)		SMK 2 (9+00)		SMK 3 (10+00)		SMK 4 (10+50)		SMK 5 (11+50)		SMK 6 (12+00)		SMK 7 (13+00)		SMK 8 (14+00)		SMK 9 (15+00)		SMK 10 (16+00)		SMK 11 (17+00)									
			N	E	Elev ft	N	E	Elev ft	N	E	Elev ft	N	E	Elev ft	N	E	Elev ft	N	E	Elev ft	N	E	Elev ft	N	E	Elev ft						
7/25/2005	KRW	0	6148.0	1216202.89	6169.53	214802.54	1216202.89	6169.11	214951.56	1216335.72	6169.22	214988.75	1216369.43	6169.25	215063.91	1216437.92	6172.56	215225.84	1216441.92	6172.30	215324.00	1216435.56	6172.31	215420.90	1216411.51	6172.26	215425.90	1216310.04	6172.01	215434.08	1216161.88	6170.16
Initial Reading																																
8/31/2005	KRW	4.0	6152.0	1216202.70	6169.53	214802.57	1216202.70	6169.11	214951.59	1216335.71	6169.22	214988.70	1216369.45	6169.25	215063.94	1216437.95	6172.56	215225.87	1216441.95	6172.27	215324.16	1216435.53	6172.28	215420.79	1216411.63	6172.72	215425.98	1216310.00	6172.02	215434.08	1216161.87	6170.16
Delta (Initial - Current)																																
10/13/2005	KRW	8.5	6156.5	1216202.69	6169.52	214802.56	1216202.69	6169.09	214951.56	1216335.73	6169.19	214988.75	1216369.43	6169.22	215063.91	1216437.92	6172.54	215225.86	1216441.93	6172.24	215324.10	1216435.53	6172.23	215420.69	1216411.68	6172.67	215425.92	1216310.00	6171.99	215434.07	1216161.88	6170.15
Delta (Initial - Current)																																
10/20/2005	KRW	9.5	6157.5	1216202.70	6169.53	214802.57	1216202.70	6169.11	214951.59	1216335.71	6169.22	214988.79	1216369.45	6169.25	215063.94	1216437.95	6172.56	215225.88	1216441.95	6172.27	215324.16	1216435.53	6172.28	215420.79	1216411.63	6172.72	215425.98	1216310.00	6172.02	215434.08	1216161.87	6170.16
Delta (Initial - Current)																																
10/28/2005	KRW	10.5	6158.5	1216202.73	6169.55	214802.54	1216202.73	6169.12	214951.57	1216335.72	6169.23	214988.74	1216369.43	6169.26	215063.90	1216437.93	6172.56	215225.86	1216441.96	6172.27	215324.10	1216435.54	6172.25	215420.71	1216411.69	6172.72	215425.92	1216310.02	6172.03	N/A	N/A	N/A
Delta (Initial - Current)																																
11/4/2005	KRW	11.0	6159.0	1216202.72	6169.54	214802.55	1216202.72	6169.10	214951.56	1216335.72	6169.22	214988.75	1216369.43	6169.25	215063.91	1216437.92	6172.56	215225.88	1216441.95	6172.26	215324.12	1216435.53	6172.25	215420.71	1216411.67	6172.71	215425.94	1216309.99	6172.02	N/A	N/A	N/A
Delta (Initial - Current)																																
11/9/2005	KRW	11.0	6159.0	1216202.71	6169.54	214802.52	1216202.71	6169.11	214951.53	1216335.71	6169.23	214988.72	1216369.42	6169.26	215063.88	1216437.92	6172.57	215225.84	1216441.96	6172.27	215324.09	1216435.55	6172.27	215420.72	1216411.71	6172.72	215425.93	1216310.01	6172.02	N/A	N/A	N/A
Delta (Initial - Current)																																
7/26/2006	KRW	9	6157.0	1216202.70	6169.53	214802.52	1216202.70	6169.11	214951.53	1216335.73	6169.22	214988.77	1216369.46	6169.25	215063.94	1216437.95	6172.56	215225.87	1216441.96	6172.27	215324.14	1216435.59	6172.25	215420.77	1216411.71	6172.64	215425.93	1216310.00	6172.04	N/A	N/A	N/A
Delta (Initial - Current)																																
12/8/2006	KRW	1.0	6149.0	1216202.87	6169.52	214802.57	1216202.87	6169.10	214951.59	1216335.73	6169.21	214988.81	1216369.45	6169.25	215063.96	1216438.00	6172.54	215225.87	1216441.93	6172.21	215324.21	1216435.65	6172.19	215420.77	1216411.72	6172.64	215425.95	1216309.98	6172.02	N/A	N/A	N/A
Delta (Initial - Current)																																
12/18/2007	KRW	0	6148.0	1216202.80	6169.56	214802.55	1216202.80	6169.14	214951.59	1216335.80	6169.24	214988.74	1216369.48	6169.26	215063.94	1216438.00	6172.55	215225.93	1216442.01	6172.22	215324.16	1216435.65	6172.18	215420.80	1216411.77	6172.63	215425.95	1216310.00	6172.02	215434.07	1216161.88	6170.18
Delta (Initial - Current)																																
12/19/2008	KRW	0.5	6148.50	1216202.76	6169.53	214802.51	1216202.76	6169.09	214951.55	1216335.77	6169.23	214988.73	1216369.50	6169.26	215063.92	1216438.01	6172.55	215225.93	1216442.04	6172.19	215324.17	1216435.68	6172.12	215420.80	1216411.81	6172.60	215425.93	1216310.03	6172.01	215434.07	1216161.88	6170.18
Delta (Initial - Current)																																
12/29/2009	KRW	13	6161.0	1216202.88	6169.56	214802.52	1216202.88	6169.14	214951.58	1216335.84	6169.26	214988.79	1216369.56	6169.27	215063.96	1216438.06	6172.57	215225.97	1216442.08	6172.19	215324.20	1216435.70	6172.13	215420.84	1216411.82	6172.60	215425.94	1216310.03	6172.02	215434.07	1216161.88	6170.18
Delta (Initial - Current)																																
11/18/2010	KRW	-	-	1216202.94	6169.55	214802.57	1216202.94	6169.13	214951.66	1216335.85	6169.23	214988.80	1216369.63	6169.27	215063.98	1216438.09	6172.56	215226.00	1216442.10	6172.19	215324.24	1216435.71	6172.11	215420.87	1216411.83	6172.59	215425.96	1216310.04	6172.00	215434.07	1216161.88	6170.18
Delta (Initial - Current)																																
12/9/2011	KRW	5	6153.0	1216203.00	6169.56	214802.50	1216203.00	6169.14	214951.62	1216335.94	6169.23	214988.83	1216369.64	6169.27	215064.01	1216438.13	6172.56	215226.01	1216442.11	6172.19	215324.25	1216435.73	6172.12	215420.89	1216411.83	6172.60	215425.97	1216310.04	6172.00	215434.07	1216161.88	6170.18
Delta (Initial - Current)																																
12/5/2012	KRW	4	6152	1216202.99	6169.56	214802.53	1216202.99	6169.12	214951.63	1216335.83	6169.22	214988.84	1216369.63	6169.26	215064.02	1216438.12	6172.56	215226.03	1216442.10	6172.17	215324.25	1216435.71	6172.10	215420.87	1216411.83	6172.57	215425.96	1216310.03	6171.99	215434.07	1216161.88	6170.18
Delta (Initial - Current)																																
10/17/2013	KRW	9	6157	1216203.06	6169.56	214802.52	1216203.06	6169.12	214951.63	1216335.97	6169.22	214988.83	1216369.57	6169.26	215064.02	1216438.15	6172.55	215226.04	1216442.13	6172.17	215324.25	1216435.74	6172.10	215420.89	1216411.87	6172.58	215425.95	1216310.05	6171.99	215434.07	1216161.88	6170.18
Delta (Initial - Current)																																
10/21/2014	KRW	13	6161	1216203.12	6169.58	214802.55	1216203.12	6169.13	214951.64	1216336.03	6169.26	214988.84	1216369.73	6169.30	215064.08	1216438.18	6172.58	215226.09	1216442.18	6172.19	215324.30	1216435.77	6172.12	215420.94	1216411.86	6172.59	215426.01	1216310.04	6171.99	215434.07	1216161.88	6170.18
Delta (Initial - Current)																																

\* To add a new row copy the entire last two row by clicking on the row numbers and highlight the entire row. Right click and choose copy. While the rows are highlighted right click again and select insert copied cells.

Figure 1  
Settlement Data

# ATTACHMENT B



# ATTACHMENT C

### DAM INSPECTION REPORT

Name of Dam: Love Ranch Evaporation Pond Date: 1-30-15 Division: 6 Dam ID: C-1881

Type of (circle): EARTH FILL, ROCKFILL, CONCRETE, OTHER: Earth Fill

Estimate Actual Capacity: 59,248 yd<sup>3</sup> Estimate Surface Area: 142,825 ft<sup>2</sup>

Estimate Height:      ft Gauge Rod Reading: 13 ft = elevation 6161

Estimate Freeboard (Pond level to top of dam): 6 ft to Elevation of 6167.00 at the top of Dam

Use: IRRIGATION, MUNICIPAL, OTHER: Salt Water Evaporation

DIRECTIONS: Mark an "X" in the Yes or No column and circle the word or phrase which applies.

	Yes	No
1. Are the roads to the dam adequate to allow ACCESS BY EMERGENCY EQUIPMENT and TRAVEL ACROSS THE DAM (i.e., TRUCKS, AMBULANCES)? SEE ADDITIONAL COMMENTS	X	
2. Is there DEBRIS, TREES, or BRUSH on the upstream slope that prevent seeing the entire surface of the slope?		X
3. Are there TREES or BRUSH on the CREST, or DOWNSTREAM SLOPE that prevent seeing the entire surface of the slope?		X
4. Are there CRACKS, SLIDES, SLUMPS, BOILS, SETTLEMENT or OTHER on the UPSTREAM SLOPE, CREST, or DOWNSTREAM SLOPE?		X
5. Are there RODENT HOLES or ERODED GULLIES on the UPSTREAM or DOWNSTREAM SLOPE?	X	
6. Is there FLOWING WATER or LARGE BOGGY SPOTS at the toe of the dam?		X
7. Are there FLOWS OF WATER or WET SPOTS above the toe of the dam?		X
9. Are there toe drains?	X	
10. Is the water from the TOE DRAINS or LEAKS found to be MUDDY or SANDY? SEE ADDITIONAL COMMENTS		X
16. Is there evidence that the dam has been overtopped?		X
17. Is the reservoir usually full YEAR ROUND, OVER 1/2 OF YEAR, or LESS THAN 1/2 OF YEAR? <span style="float: right;">Over 1/2 of Year</span>		
18. Should this dam be promptly inspected by a field engineer from the State Engineer's offices?		X

Additional Comments:

Toe Drain = 16.01'

Inspected By: Note Green

DAM INSPECTION REPORT

NAME OF DAM: Love Ranch Evaporation Pond

DATE: 1-~~20~~<sup>30</sup>-15

DAM HEIGHT: 44 (ft)

MAX. RES. CAPACITY: 50.4 acre ft.

MAXIMUM GAGE ROD: 17 (ft)

TODAY'S GAGE HEIGHT: 13 (ft)

NOTE:

a) Enter 1 below if: No problems found in this area, the whole area appears to be acceptable.

b) Circle items of particular concern.

UPSTREAM SLOPE 1

CREST 1

DOWNSTREAM SLOPE 1

SEEPAGE AREAS 1

OUTLET N/A

SPELLWAY 1

HDPE LINER 1

REQUIRED MAINTENANCE OR ACTION:

INSPECTOR'S SIGNATURE: Note Gram

### DAM INSPECTION REPORT

Name of Dam: Love Ranch Evaporation Pond Date: 12-29-14 Division: 6 Dam ID: C-1881

Type of (circle): EARTH FILL, ROCKFILL, CONCRETE, OTHER: Earth Fill

Estimate Actual Capacity: 59,248 yd<sup>3</sup> Estimate Surface Area: 142,825 ft<sup>2</sup>

Estimate Height: ft Gauge Rod Reading: 13 ft = elevation 6161

Estimate Freeboard (Pond level to top of dam): 6 ft to Elevation of 6167.00 at the top of Dam

Use: IRRIGATION, MUNICIPAL, OTHER: Salt Water Evaporation

DIRECTIONS: Mark an "X" in the Yes or No column and circle the word or phrase which applies.

Yes No

	Yes	No
1. Are the roads to the dam adequate to allow ACCESS BY EMERGENCY EQUIPMENT and TRAVEL ACROSS THE DAM (i.e., TRUCKS, AMBULANCES)? SEE ADDITIONAL COMMENTS	X	
2. Is there DEBRIS, TREES, or BRUSH on the upstream slope that prevent seeing the entire surface of the slope?		X
3. Are there TREES or BRUSH on the CREST, or DOWNSTREAM SLOPE that prevent seeing the entire surface of the slope?		X
4. Are there CRACKS, SLIDES, SLUMPS, BOILS, SETTLEMENT or OTHER on the UPSTREAM SLOPE, CREST, or DOWNSTREAM SLOPE?		X
5. Are there RODENT HOLES or ERODED GULLIES on the UPSTREAM or DOWNSTREAM SLOPE?	X	
6. Is there FLOWING WATER or LARGE BOGGY SPOTS at the toe of the dam?		X
7. Are there FLOWS OF WATER or WET SPOTS above the toe of the dam?		X
9. Are there toe drains?	X	
10. Is the water from the TOE DRAINS or LEAKS found to be MUDDY or SANDY? SEE ADDITIONAL COMMENTS		X
16. Is there evidence that the dam has been overtopped?		X
17. Is the reservoir usually full YEAR ROUND, OVER 1/2 OF YEAR, or LESS THAN 1/2 OF YEAR? <span style="float: right;">Over 1/2 of Year</span>		X
18. Should this dam be promptly inspected by a field engineer from the State Engineer's offices?		X

Additional Comments:

Toe Drain = 16.03'

Total = 16.20'

Inspected By: Noti Orr

DAM INSPECTION REPORT

NAME OF DAM: Love Ranch Evaporation Pond DATE: 12-29-14  
DAM HEIGHT: 44 (ft) MAX. RES. CAPACITY: 50.4 acre ft.  
MAXIMUM GAGE ROD: 17 (ft) TODAY'S GAGE HEIGHT: 13 (ft)

NOTE:

- a) Enter 1 below if: No problems found in this area, the whole area appears to be acceptable.
- b) Circle items of particular concern.

UPSTREAM SLOPE 1

CREST 1

DOWNSTREAM SLOPE 1

SEEPAGE AREAS ~~1~~ 1

OUTLET N/A

SPILLWAY 1

HDPE LINER 1

REQUIRED MAINTENANCE OR ACTION:

INSPECTOR'S SIGNATURE: Weto Owen

### DAM INSPECTION REPORT

Name of Dam: Love Ranch Evaporation Pond Date: 11-26-14 Division: 6 Dam ID: C-1881

Type of (circle): EARTH FILL, ROCKFILL, CONCRETE, OTHER: Earth Fill

Estimate Actual Capacity: 59,248 yd<sup>3</sup> Estimate Surface Area: 142,825 ft<sup>2</sup>

Estimate Height: 13 ft Gauge Rod Reading: 13 ft = elevation 6161

Estimate Freeboard (Pond level to top of dam): 6 ft to Elevation of 6167.00 at the top of Dam

Use: IRRIGATION, MUNICIPAL, OTHER: Salt Water Evaporation

DIRECTIONS: Mark an "X" in the Yes or No column and circle the word or phrase which applies.

	Yes	No
1. Are the roads to the dam adequate to allow ACCESS BY EMERGENCY EQUIPMENT and TRAVEL ACROSS THE DAM (i.e., TRUCKS, AMBULANCES)? SEE ADDITIONAL COMMENTS	X	
2. Is there DEBRIS, TREES, or BRUSH on the upstream slope that prevent seeing the entire surface of the slope?		X
3. Are there TREES or BRUSH on the CREST, or DOWNSTREAM SLOPE that prevent seeing the entire surface of the slope?		X
4. Are there CRACKS, SLIDES, SLUMPS, BOILS, SETTLEMENT or OTHER on the UPSTREAM SLOPE, CREST, or DOWNSTREAM SLOPE?		X
5. Are there RODENT HOLES or ERODED GULLIES on the UPSTREAM or DOWNSTREAM SLOPE?	X	
6. Is there FLOWING WATER or LARGE BOGGY SPOTS at the toe of the dam?		X
7. Are there FLOWS OF WATER or WET SPOTS above the toe of the dam?		X
9. Are there toe drains?	X	
10. Is the water from the TOE DRAINS or LEAKS found to be MUDDY or SANDY? SEE ADDITIONAL COMMENTS		X
16. Is there evidence that the dam has been overtopped?		X
17. Is the reservoir usually full YEAR ROUND, OVER 1/2 OF YEAR, or LESS THAN 1/2 OF YEAR? <span style="float: right;">Over 1/2 of Year</span>		
18. Should this dam be promptly inspected by a field engineer from the State Engineer's offices?		X

Additional Comments:

Toe Drain = 16.01'  
Total Depth = 16.20'

Inspected By: Nate Grove

**DAM INSPECTION REPORT**

NAME OF DAM: Love Ranch Evaporation Pond      DATE: 11-26-14  
DAM HEIGHT: 44 (ft)      MAX. RES. CAPACITY: 50.4 acre ft.  
MAXIMUM GAGE ROD: 17 (ft)      TODAY'S GAGE HEIGHT: 13 (ft)

NOTE:

- a) Enter 1 below if: No problems found in this area, the whole area appears to be acceptable.
- b) Circle items of particular concern.

UPSTREAM SLOPE 1  
\_\_\_\_\_  
\_\_\_\_\_

CREST 1  
\_\_\_\_\_  
\_\_\_\_\_

DOWNSTREAM SLOPE 1  
\_\_\_\_\_  
\_\_\_\_\_

SEEPAGE AREAS 1  
\_\_\_\_\_  
\_\_\_\_\_

OUTLET N/A  
\_\_\_\_\_  
\_\_\_\_\_

SPILLWAY 1  
\_\_\_\_\_  
\_\_\_\_\_

HDPE LINER 1  
\_\_\_\_\_  
\_\_\_\_\_

REQUIRED MAINTENANCE OR ACTION:

INSPECTOR'S SIGNATURE: Nate Grove

### DAM INSPECTION REPORT

Name of Dam: Love Ranch Evaporation Pond Date: 10-31-14 Division: 6 Dam ID: C-1881

Type of (circle): EARTH FILL, ROCKFILL, CONCRETE, OTHER: Earth Fill

Estimate Actual Capacity: 59,298 yd<sup>3</sup> Estimate Surface Area: 142,825 ft<sup>2</sup>

Estimate Height: 13 ft Gauge Rod Reading: 13 ft = elevation 6161

Estimate Freeboard (Pond level to top of dam): 6 ft to Elevation of 6167.00 at the top of Dam

Use: IRRIGATION, MUNICIPAL, OTHER: Salt Water Evaporation

DIRECTIONS: Mark an "X" in the Yes or No column and circle the word or phrase which applies.

	Yes	No
1. Are the roads to the dam adequate to allow ACCESS BY EMERGENCY EQUIPMENT and TRAVEL ACROSS THE DAM (i.e., TRUCKS, AMBULANCES)? SEE ADDITIONAL COMMENTS	X	
2. Is there DEBRIS, TREES, or BRUSH on the upstream slope that prevent seeing the entire surface of the slope?		X
3. Are there TREES or BRUSH on the CREST, or DOWNSTREAM SLOPE that prevent seeing the entire surface of the slope?		X
4. Are there CRACKS, SLIDES, SLUMPS, BOILS, SETTLEMENT or OTHER on the UPSTREAM SLOPE, CREST, or DOWNSTREAM SLOPE?		X
5. Are there RODENT HOLES or ERODED GULLIES on the UPSTREAM or DOWNSTREAM SLOPE?	X	
6. Is there FLOWING WATER or LARGE BOGGY SPOTS at the toe of the dam?		X
7. Are there FLOWS OF WATER or WET SPOTS above the toe of the dam?		X
9. Are there toe drains?	X	
10. Is the water from the TOE DRAINS or LEAKS found to be MUDDY or SANDY? SEE ADDITIONAL COMMENTS		X
16. Is there evidence that the dam has been overtopped?		X
17. Is the reservoir usually full YEAR ROUND, OVER 1/2 OF YEAR, or LESS THAN 1/2 OF YEAR? <span style="float: right;">Over 1/2 of Year</span>		
18. Should this dam be promptly inspected by a field engineer from the State Engineer's offices?		X

Additional Comments:

~~Toe Drain~~  
 Toe Drain = 16.01'  
 Total Depth = 16.20'

Inspected By: Nate Brown

DAM INSPECTION REPORT

NAME OF DAM: Love Ranch Evaporation Pond      DATE: 10-31-14  
DAM HEIGHT: 44 (ft)      MAX. RES. CAPACITY: 50.4 acre ft.  
MAXIMUM GAGE ROD: 17 (ft)      TODAY'S GAGE HEIGHT: 13 (ft)

NOTE:

- a) Enter 1 below if: No problems found in this area, the whole area appears to be acceptable.
- b) Circle items of particular concern.

UPSTREAM SLOPE /  
\_\_\_\_\_  
\_\_\_\_\_

CREST /  
\_\_\_\_\_  
\_\_\_\_\_

DOWNSTREAM SLOPE /  
\_\_\_\_\_  
\_\_\_\_\_

SEEPAGE AREAS /  
\_\_\_\_\_  
\_\_\_\_\_

OUTLET N/A  
\_\_\_\_\_  
\_\_\_\_\_

SPILLWAY /  
\_\_\_\_\_  
\_\_\_\_\_

HDPE LINER /  
\_\_\_\_\_  
\_\_\_\_\_

REQUIRED MAINTENANCE OR ACTION:

INSPECTOR'S SIGNATURE: Noti Green

Monthly  
**DAM INSPECTION REPORT**

Name of Dam: Love Ranch Evaporation Pond Date: 9-28-14 Division: 6 Dam ID: C-1881

Type of (circle): EARTH FILL, ROCKFILL, CONCRETE, OTHER: Earth Fill

Estimate Actual Capacity: 53959 yd<sup>3</sup> Estimate Surface Area: 139,645 ft<sup>2</sup>

Estimate Height: 12 ft Gauge Rod Reading: 12 ft = elevation 6160

Estimate Freeboard (Pond level to top of dam): 7 ft to Elevation of 6167.00 at the top of Dam

Use: IRRIGATION, MUNICIPAL, OTHER: Salt Water Evaporation

DIRECTIONS: Mark an "X" in the Yes or No column and circle the word or phrase which applies.

	Yes	No
1. Are the roads to the dam adequate to allow ACCESS BY EMERGENCY EQUIPMENT and TRAVEL ACROSS THE DAM (i.e., TRUCKS, AMBULANCES)? SEE ADDITIONAL COMMENTS	X	
2. Is there DEBRIS, TREES, or BRUSH on the upstream slope that prevent seeing the entire surface of the slope?		X
3. Are there TREES or BRUSH on the CREST, or DOWNSTREAM SLOPE that prevent seeing the entire surface of the slope?		X
4. Are there CRACKS, SLIDES, SLUMPS, BOILS, SETTLEMENT or OTHER on the UPSTREAM SLOPE, CREST, or DOWNSTREAM SLOPE?		X
5. Are there RODENT HOLES or ERODED GULLIES on the UPSTREAM or DOWNSTREAM SLOPE?	X	
6. Is there FLOWING WATER or LARGE BOGGY SPOTS at the toe of the dam?		X
7. Are there FLOWS OF WATER or WET SPOTS above the toe of the dam?		X
9. Are there toe drains?	X	
10. Is the water from the TOE DRAINS or LEAKS found to be MUDDY or SANDY? SEE ADDITIONAL COMMENTS		X
16. Is there evidence that the dam has been overtopped?		X
17. Is the reservoir usually full YEAR ROUND, OVER 1/2 OF YEAR, or LESS THAN 1/2 OF YEAR? <span style="float: right;">Over 1/2 of Year</span>		
18. Should this dam be promptly inspected by a field engineer from the State Engineer's offices?		X

Additional Comments:

toe drain = 16.01'  
total depth = 16.20'

Inspected By: Tom Hertenstein

**DAM INSPECTION REPORT**

NAME OF DAM: Love Ranch Evaporation Pond      DATE: 9/29/14  
DAM HEIGHT: 44 (ft)      MAX. RES. CAPACITY: 50.4 acre ft.  
MAXIMUM GAGE ROD: 17 (ft)      TODAY'S GAGE HEIGHT: 12 (ft)

NOTE: toe drain 16.01'

- a) Enter 1 below if: No problems found in this area, the whole area appears to be acceptable.
- b) Circle items of particular concern.

UPSTREAM SLOPE 1

CREST 1

DOWNSTREAM SLOPE 1

SEEPAGE AREAS 1

OUTLET N/A

SPILLWAY 1

HDPE LINER 1

REQUIRED MAINTENANCE OR ACTION:

INSPECTOR'S SIGNATURE: Tan Herfandien

Monthly

DAM INSPECTION REPORT

Name of Dam: Love Ranch Evaporation Pond Date: 7-25-14 Division: 6 Dam ID: C-1881

Type of (circle): EARTH FILL, ROCKFILL, CONCRETE, OTHER: Earth Fill

Estimate Actual Capacity: 48,903 yd<sup>3</sup> Estimate Surface Area: 136,562 ft<sup>2</sup>

Estimate Height: 11 ft Gauge Rod Reading: 11 ft = elevation 6159

Estimate Freeboard (Pond level to top of dam): 8 ft to Elevation of 6167.00 at the top of Dam

Use: IRRIGATION, MUNICIPAL, OTHER: Salt Water Evaporation

toe drain 16.01'

DIRECTIONS: Mark an "X" in the Yes or No column and circle the word or phrase which applies.

Yes No

	Yes	No
1. Are the roads to the dam adequate to allow ACCESS BY EMERGENCY EQUIPMENT and TRAVEL ACROSS THE DAM (i.e., TRUCKS, AMBULANCES)? SEE ADDITIONAL COMMENTS	X	
2. Is there DEBRIS, TREES, or BRUSH on the upstream slope that prevent seeing the entire surface of the slope?		X
3. Are there TREES or BRUSH on the CREST, or DOWNSTREAM SLOPE that prevent seeing the entire surface of the slope?		X
4. Are there CRACKS, SLIDES, SLUMPS, BOILS, SETTLEMENT or OTHER on the UPSTREAM SLOPE, CREST, or DOWNSTREAM SLOPE?		X
5. Are there RODENT HOLES or ERODED GULLIES on the UPSTREAM or DOWNSTREAM SLOPE?	X	
6. Is there FLOWING WATER or LARGE BOGGY SPOTS at the toe of the dam?		X
7. Are there FLOWS OF WATER or WET SPOTS above the toe of the dam?		X
8. Are there toe drains?	X	
10. Is the water from the TOE DRAINS or LEAKS found to be MUDDY or SANDY? SEE ADDITIONAL COMMENTS		X
16. Is there evidence that the dam has been overtopped?		X
17. Is the reservoir usually full YEAR ROUND, OVER 1/2 OF YEAR, or LESS THAN 1/2 OF YEAR? Over 1/2 of Year		
18. Should this dam be promptly inspected by a field engineer from the State Engineer's offices?		X

Additional Comments: section of erosion control missing on SW corner of pond above liner, dirt and rocks sliding into pond. large varmit hole in this area as well.

Inspected By: Nate Grove

# Monthly

## DAM INSPECTION REPORT

NAME OF DAM: Love Ranch Evaporation Pond

DATE: 7-25-14

DAM HEIGHT: 44 (ft)

MAX. RES. CAPACITY: 50.4 acre ft.

MAXIMUM GAGE ROD: 17 (ft)

TODAY'S GAGE HEIGHT: 11 (ft)

NOTE: toe Drain 16.01'

a) Enter 1 below if: No problems found in this area, the whole area appears to be acceptable.

b) Circle items of particular concern.

UPSTREAM SLOPE 1

CREST 1

DOWNSTREAM SLOPE 1

SEEPAGE AREAS 1

OUTLET N/A

SPILLWAY 1

HDPE LINER 1

REQUIRED MAINTENANCE OR ACTION:

section of erosion control missing on SW corner of pond above  
liner + large varmit hole

INSPECTOR'S SIGNATURE: Nate Grove

Monthly

DAM INSPECTION REPORT

Name of Dam: Love Ranch Evaporation Pond Date: 6/26/17 Division: 6 Dam ID: C-1881

Type of (circle): EARTH FILL, ROCKFILL, CONCRETE, OTHER: Earth Fill

Estimate Actual Capacity: 59248 yd<sup>3</sup> Estimate Surface Area: 142825 ft<sup>2</sup>

Estimate Height:      ft Gauge Rod Reading: 13 ft = elevation 6161

Estimate Freeboard (Pond level to top of dam):      ft to Elevation of 6167.00 at the top of Dam

Use: IRRIGATION, MUNICIPAL, OTHER: Salt Water Evaporation

DIRECTIONS: Mark an "X" in the Yes or No column and circle the word or phrase which applies.

	Yes	No
1. Are the roads to the dam adequate to allow ACCESS BY EMERGENCY EQUIPMENT and TRAVEL ACROSS THE DAM (i.e., TRUCKS, AMBULANCES)? SEE ADDITIONAL COMMENTS	X	
2. Is there DEBRIS, TREES, or BRUSH on the upstream slope that prevent seeing the entire surface of the slope?	X	
3. Are there TREES or BRUSH on the CREST, or DOWNSTREAM SLOPE that prevent seeing the entire surface of the slope?	X	
4. Are there CRACKS, SLIDES, SLUMPS, BOILS, SETTLEMENT or OTHER on the UPSTREAM SLOPE, CREST, or DOWNSTREAM SLOPE?	X*	
5. Are there RODENT HOLES or ERODED GULLIES on the UPSTREAM or DOWNSTREAM SLOPE?	X	
6. Is there FLOWING WATER or LARGE BOGGY SPOTS at the toe of the dam?		X
7. Are there FLOWS OF WATER or WET SPOTS above the toe of the dam?		X
9. Are there toe drains?	X	
10. Is the water from the TOE DRAINS or LEAKS found to be MUDDY or SANDY? SEE ADDITIONAL COMMENTS		X
16. Is there evidence that the dam has been overtopped?		X
17. Is the reservoir usually full YEAR ROUND, OVER 1/2 OF YEAR, or LESS THAN 1/2 OF YEAR? Over 1/2 of Year		
18. Should this dam be promptly inspected by a field engineer from the State Engineer's offices?		X

Additional Comments:

-KRW onsite 1045  
\* = some rills (~4-6" deep) on East fill slope

Inspected By: Dan Allen

Monthly  
DAM INSPECTION REPORT

NAME OF DAM: Love Ranch Evaporation Pond    DATE: 6/26/14  
DAM HEIGHT: 44 (ft)    MAX. RES. CAPACITY: 50.4 acre ft.  
MAXIMUM GAGE ROD: 17 (ft)    TODAY'S GAGE HEIGHT: 13 (ft)

NOTE: Toe Drain Depth = 16.01'  
a) Enter 1 below if: No problems found in this area, the whole area appears to be acceptable.  
b) Circle items of particular concern.

UPSTREAM SLOPE rodent holes, some rills

CREST 1

DOWNSTREAM SLOPE rodent holes, some rills

SEEPAGE AREAS 1

OUTLET —

SPILLWAY 1

HDPE LINER Some rodent <sup>holes</sup> near liner on south end of pond.

REQUIRED MAINTENANCE OR ACTION:

INSPECTOR'S SIGNATURE: 