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West Stanislaus Resource Conservation District

Crows Landing Naval Base Easement

Annual Reserve Monitoring Report

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11/1/2012

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11/1/2012

As outlined in the Environmental Resource Plan, an annual monitoring event was conducted on the Crows Landing Naval Airstrip (Agricultural Outlease) on August 30, 2012. The most recent prior monitoring event was conducted in November of 2010 by Melanie Fisher. At that time, it was reported that there was significant sediment build-up in creeks, culverts, and drains, and that wells on the property presented a concern for groundwater contamination. Based on my observations, I would like to reiterate the concerns expressed in the monitoring report from November of 2010, and elaborate on the existence of some very significant environmental risks on the property.

Creeks, culverts, and drains on the property are severely congested by sediment build-up and vegetation. One example of the problems that are occurring as a result is the condition of the Marshall Drain, adjacent to fields 1 and 2. The Marshall Drain is so elevated above the adjacent fields by sediment build-up that the natural direction of water flow is into the margins of fields 1 and 2. This is causing severe ponding, particularly in field 2. While the operator is actively pumping this water to manage the flooding, erosion is almost certainly occurring in those fields. Furthermore, water pumped back into the drain likely contains an increased sediment load and synthetic materials (pesticides, fertilizers). It is necessary that this drainage is restored to improve the water holding capacity and re-establish drain function on the property.

Wells on the property are mostly unused and highly exposed, with the exception of well 6/8-20G in field 10 which is currently being operated. Although it appears that the operator has capped unused wells on the property, the potential for unwanted contaminants (pesticides, fertilizers) to pollute groundwater directly through these old wells remains high. Well 6/8-20C1 in field 8 has the acute problem of surface water surrounding the wellhead draining directly into the well, despite having been capped. On the day of the monitoring event surface water was observed draining directly into the well, most likely through areas of the pipe that have deteriorated. This is a matter affecting groundwater quality that requires further investigation and immediate attention.

I would like to impress that these problems will only continue to worsen, and the risk of negative environmental impact to Stanislaus County surface water, groundwater, and soil will only continue to increase without proper management.

Observed August 30, 2012

Jamie McFarlin
Resource Conservation Technician
East Stanislaus Resource Conservation District

Monitoring Methods

The Crows Landing Naval Airstrip was toured via a vehicle and on foot. The current operator was contacted prior to the monitoring event, but was not present as an observer. Observers included West Stanislaus Resource Conservation District directors, and Jamie McFarlin, Resource Conservation Technician with the East Stanislaus Resource Conservation District. Monitoring consisted of:

1. Visual observations made on:
 - a. airstrip
 - i. garbage, debris
 - ii. deterioration/damage
 - b. fields
 - i. irrigation water management
 - ii. weed presence
 - iii. crop residue management
 - c. creeks, culverts, drains
 - i. sediment build-up
 - ii. establishment of vegetation in channels
 - iii. potential for pollutants to enter waterways
 - iv. trash/debris
 - d. wells
 - i. potential for pollutants to enter groundwater
 - ii. in use/not in use
2. Inspection of equipment being actively operated
 - a. compliance with diesel emissions regulations
3. Photo documentation
 - a. See figures 1-15

Brief Summary of Findings

1. Airstrip
Garbage and debris present on airstrip, but no damage observed
2. Fields
Operator is responsibly managing fields, with minor weed presence on field margins, and active management of irrigation water. Crop residue is present in fields not currently in production.
3. Creeks, Culverts, Drains
Creeks, culverts and drains overall are severely congested by sediment build-up and vegetation, and present a serious environmental risk.
4. Wells
While capped, wells remain highly exposed and present an extreme environmental risk. There is evidence that surface water is able to drain into groundwater in at least one unused well on the property.
5. Equipment
Equipment complies with air and water quality regulations.



Figure 1. Well 6/8-8J, Field 3



Figure 2. In-use Well in Field 3



Figure 3. Well 6/8-20C1 in Field 8—Surface water observed draining directly into groundwater through areas where pipe has deteriorated.



Figure 4. Drainage ditch congested by vegetation, trash, debris



Figure 5. Well-managed and clean pickup ditch between fields



Figure 6. Drainage ditch with major reduction of water-holding capacity due to vegetation and sediment build-up



Figure 7. Culvert in-flow obstruction



Figure 8. Culvert (same as Figure 7) demonstrating severe sediment build-up

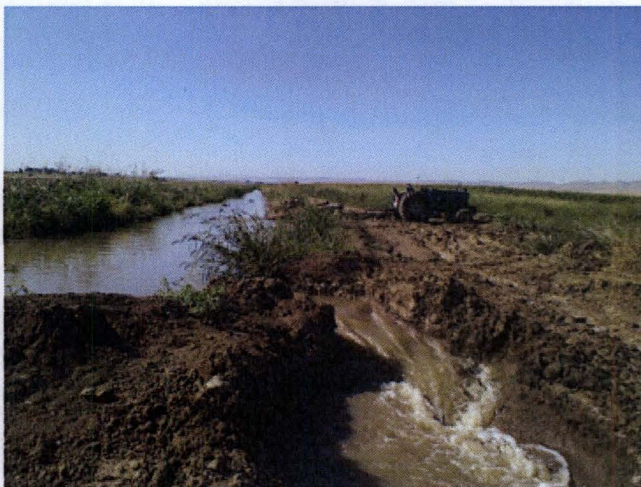


Figure 9. Operator using a stationary engine to pump irrigation water into pickup ditch from field



Figure 10. Flooding in fields 1&2, adjacent to Marshall Drain (upslope)



Figure 11. Operator pumping water from field 1&2 into the Marshall Drain



Figure 12. Marshall Drain, adjacent to fields 1 & 2—Note elevation of drain due to sediment build-up, as well as the establishment of vegetation.



Figure 13. Marshall Drain, severely congested with vegetation and debris between field 2 and Wildlife Area



Figure 14. Marshall Drain, adjacent to Wildlife Area—Note surface of water is almost level with road.



Figure 15. Structure and Garbage left on or near airstrip

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Production Areas (Y/N)

| Field | Soil Erosion/Excess Runoff Observed | Drains Obstructed | Debris/Trash Present | Crop Residue Properly Managed | In Compliance with Air and Water Quality Regulations | Noxious Weeds Present | Minimum Tillage Being Practiced | Pesticide and Nutrient Application Decisions Supported by Licensed PCA | Proper Crop Rotation Schedules Followed | Irrigation Water Properly Managed |
|-------|-------------------------------------|-------------------|----------------------|-------------------------------|--|-----------------------|---------------------------------|--|---|-----------------------------------|
| 1 | N | N | N | Y | Y | Y | Y | Unknown | N/A | N |
| 2 | N | N | N | Y | Y | Y | Y | Unknown | N/A | N |
| 3 | N | N | N | Y | Y | Y | Y | Unknown | N/A | Y |
| 4 | N | N | N | Y | Y | Y | Y | Unknown | N/A | Y |
| 5 | N | N | N | Y | Y | Y | Y | Unknown | N/A | Y |
| 6 | N | N | N | Y | Y | Y | Y | Unknown | N/A | Y |
| 7 | N | N | N | Y | Y | Y | Y | Unknown | N/A | Y |
| 8 | N | N | N | Y | Y | Y | Y | Unknown | N/A | Y |
| 9 | N | N | N | Y | Y | Y | Y | Unknown | N/A | Y |
| 10 | N | N | N | Y | Y | Y | Y | Unknown | N/A | Y |

Comments/Suggestions: Production areas are being managed responsibly by tenants. At time of monitoring, fields 3-10 were in production. Fields 1 and 2 had some residue, properly managed. Producer is actively using a pumping system to direct water in the fields into drainage channels. There is major ponding of irrigation/storm water on fields 1 and 2 entirely due to neglected maintenance of adjacent Marshall Drain, see Sediment Basin/Tailwater Return System below.

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Sediment Basin/Tailwater Return System (Y/N)

| Bank Erosion | Marshall Rd Drain Obstructed or in Ill-Repair | Debris/Trash present | Noxious Weeds present | General Weeds and Plant Material Obstructing Flow | Sediment Levels Inhibiting Water Holding Capabilities of Basin | Tailwater Return Pump in Working Condition | Buried Pipelines in Useable Condition | Excessive Tailwater Leaving the Property |
|--------------|---|----------------------|-----------------------|---|--|--|---------------------------------------|--|
| N | Y | Y | Y | Y | Y | Y | unknown | N |

Comments/Suggestions: Significant sediment build-up has elevated Marshall Drain above adjacent fields and has decreased overall water holding capacity of the drain, and is causing severe flooding on fields 1 and 2 (observed at time of monitoring). Tenant is actively pumping out ponding water from fields and back into the Marshall Drain, but does not appear to have the ability to do so in a way that remediates ponding. Heavy general weed presence apparent in drains/creek throughout the property further obstructs flow. Debris/trash and weeds are all also present in and around drains.

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Wetland and Wildlife Habitat (Y/N)

| Site | Bank Erosion | Culverts Obstructed (sediment/plant material) | Debris/Trash Present | Noxious Weeds Present | Waterways Obstructed (sediment/plant material) | Damage to Native Vegetation |
|----------------------------|--------------|---|-------------------------|--------------------------|---|--------------------------------|
| Little Salado Creek | N | Y | Y | Y | Y | N |
| Boy Scout Wildlife Area | N | Y | Y | Y | Y | N |

Comments/Suggestions: Marshall Drain/Little Salado Creek and its incorporated culverts are extensively congested by sediment build-up, woody debris, and weeds. Obstructions of flow will certainly result in stream diversion through adjacent fields during rains, as already observed in past winter and spring rains. Flow water that is diverted through the fields will (continue to) cause erosion of the field borders, sediment mass movement, and possible water contamination in Little Salado Creek.

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Water Wells (Y/N)

| Well Number & Field Location | Stationary Internal Combustion Engine(s) Comply with Rule 4702, Diesel Emissions | Surface Water Runoff Able to Reach Wellhead? | Mixing, Loading, Rinsing, or Storage of Pesticides Occurring Adjacent to Wellhead |
|------------------------------|--|--|---|
| 6/8-8J, Field 3 | Y | N | N |
| 6/8-20C1, Field 8 | NA | Y | N |
| 6/8-20G, Field 10 | Y | N | N |

Comments/Suggestions: It appears that there are two wells currently being utilized by tenants, one of which is 6/8-20G in field 10. The other is an unidentifiable well in field 3. Both well 6/8-20G and the second hypothesized well are being operated using a stationary diesel engine. Well 6/8-8J in field 3 is not in use, and has been capped. **Well 6/8-20C1 in field 8 is not in use, and has the acute problem of surface water surrounding the wellhead draining directly into the well, despite having been capped.** On the day of the monitoring event surface water was observed draining directly into the well, most likely through areas of the pipe that have deteriorated. This is a matter affecting groundwater quality that requires immediate attention.

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Restrictive Covenant Area (Y/N)

| New Well Construction | Groundwater from Existing Wells Being Utilized | Construction Activities Creating Groundwater Recharge |
|-----------------------|--|---|
| Y | Y | N |

Comments/Suggestions: Pumping is actively occurring on well 6/8-20G, field 10. No other previously identified wells are currently in use. There does, however, appear to be another well in operation on field 3 that could not be identified as well 6/8-8J, and is therefore hypothesized to be a new well. Both wells are being operated by a stationary engine.

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Pickup Ditches (Y/N)

| Bank Erosion | Culverts Obstructed (sediment/plant material) | Debris/Trash Present | Noxious Weeds Present | Water Flow Obstructed (sediment/plant material) |
|--------------|--|----------------------|-----------------------|--|
| N | Y | Y | N | Y |

Comments/Suggestions: Pickup ditches are in great need of maintenance, particularly in and around culverts. Sediment buildup and plant material are obviously impeding the flow of water through culverts, and in some parts of the ditches. The probability that culverts will not be able to handle any larger volumes of water (i.e. storm events) is very high.

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General Maintenance Areas (Y/N)

| Airstrips Damaged from Track-Laying Equipment | Paved Roads Damaged from Track-Laying Equipment | Weed Infestations Along Roadsides and Storage Areas | Existing Fences in Disrepair | Trash and Debris Present on Property |
|---|---|---|------------------------------|--------------------------------------|
| N | N | Y | N/A | Y |

Comments/Suggestions: A moderate amount of trash and abandoned structures (i.e. a trailer, equipment) can be found on and around the airstrip. Weeds are present along roadsides and the airstrip, but do not appear to be presenting a problem and do not appear to be creeping into agricultural fields.