

MILE POST 7 WEST RIDGE RAILROAD RELOCATION, DAM EXTENSIONS, AND STREAM MITIGATION PROJECT EAW  
 RECORD OF DECISION - FINDING OF FACT 28.s  
 2021 NORTHSORE EQUIPMENT STATUS

2021 Assessment for DNR Request on 11/30/2021

Instrument Name	Piezometer Type	Associated Dam	Station	Location	Approximate Distance from Dam Centerline (ft)	Original Comments	Updated Status
5A-P0	Casagrande	Dam 1	17+00	Mid Downstream Slope	900	Abandon piezometer	Abandoned, not used.
3B-P1	Casagrande	Dam 1	28+40	Mid Downstream Slope	1000	Evaluate role of piezometer during model updates then decide to abandon or replace	Replaced
2B-P3	Casagrande	Dam 1	35+00	Toe	980	Evaluate role of piezometer during model updates then decide to abandon or replace	Replaced
2F-P2	Pneumatic	Dam 1	35+00	Toe	1290	Evaluate role of piezometer during model updates then decide to abandon or replace	Replaced
2H-P1	Pneumatic	Dam 1	35+00	Upstream of Cutoff	760	Piezometer buried; evaluate role of piezometer during model updates and decide whether to replace	Replaced
2K-P1	Pneumatic	Dam 1	35+00	Upstream of Cutoff	350	Piezometer inoperable; evaluate role of piezometer during model updates and decide whether to abandon or replace	In process of replacement
3K-P2	Pneumatic	Dam 1	28+40	Upstream of Cutoff	350	Piezometer inoperable; evaluate role of piezometer during model updates and decide whether to abandon or replace	In process of replacement
P97-10B	Pneumatic	Dam 1	28+40	Upstream of Cutoff	80	Piezometer buried. Review piezometer status for future course of action	In process of replacement
D1-3500R100A (Upper Fine Tailings)	VW	Dam 1	35+00	Upstream of Cutoff	100	Continue recording data with data logger to assess functionality. Plan for future replacement of entire nest	In process of replacement
D1-3300R1200 (Upper Clay)	VW	Dam 1	33+00	Toe	1200	Splice on extra wire and connect to data logger	Completed
3E-P2	Pneumatic	Dam 2	34+75	Toe	1020	Evaluate role of piezometer during model updates for next raise then decide to abandon or replace	Replaced
4H-P1	Pneumatic	Dam 2	42+00	Upstream of Cutoff	440	Abandon piezometer	Replaced
4H-P2	Pneumatic	Dam 2	42+00	Upstream of Cutoff	440	Abandon piezometer	Replaced
P97-19A	Pneumatic	Dam 2	34+75	Dam Crest	50	Attempt to read again in Spring 2019. Review piezometer status for further course of action	Replaced
D2-3475R100B (nest of 6)	VW	Dam 2	34+75	Dam Crest	100	Continue recording data with data logger to assess functionality. Plan for future replacement of entire nest	Replaced
D2-4200R1000M1	VW	Dam 2	42+00	Toe	1000	Continue data collection with data logger, though likely will remain non-functional	Replaced
RD-2700R95 (nest of 3)	VW	Reclaim Dam	27+00	Dam Crest	95	Replace instruments	Replaced
P-22A	Casagrande	SRD 2-3	N/A	Downstream of Toe, East End	150	Continue to read instrument, assess role as part of dam stability analysis	Replaced with Supplemental Device

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#	Action Item	Original Action Timeframe	Updated Status
1	Maintain Dam 5 toe seepage pond surface at a minimum elevation of 1,181 feet.	Ongoing	Ongoing
2	Perform additional review of VW piezometer connections to the data loggers at the crests of Dam 1 and Dam 2	2019	Complete
3	Lengthen and connect wire for D1-3300R1200 Upper Clay to data logger	Late Fall 2018	Complete
4	Replace damaged inclinometer I13-2 at Dam 5	In Progress	In Progress
5	Replace inclinometer I04-2 at Dam 5	In Progress	In Progress
6	Continue to install data loggers for remaining/new VW piezometers. Install remaining components for real-time monitoring system.	~Late 2018-2020	Complete
7	Clean out weirs at Dam 1	Winter 2018-2019	Complete
8	Set action levels for downstream slope and toe piezometers for Dam 1, Dam 2, and Dam 5 relative to dam stability, using data logger information as available.	~2019-2020	Dam 1-Complete, Dam 2-In Progress, Dam 5-In Progress
9	Repair relief well R-11 at Dam 1	2018/2019	In Progress
10	Install additional piezometers at/beyond the toe of Dam 2 to monitor uplift pressures.	2019/2020	Complete
11	Perform seepage and stability analyses for the seepage recovery dams incorporating information from new VW piezometers installed in the late fall of 2018	2018/2019	Complete
12	Update construction tracking log to allow documentation of reasons for instrumentation fluctuations, such as pumping from seepage ponds, placement of aggregate, etc.	Ongoing	Ongoing
13	Replace piezometers at station 27+00 and install a VW nest at station 15+00 at the reclaim dam	~2018-2020	Complete
14	Install inclinometers with datalogging/automation capabilities (MEMS) within existing inclinometer casings	~Early 2019-2023	Complete/Ongoing for Dam 5
15	Replace non-functional pneumatic piezometers with VW piezometers	~2019-2025	Ongoing
16	Attempt to read piezometers from which data could not be recorded as part of the fall 2018 monitoring event.	Spring 2019	Complete
17	Record data from pneumatic piezometers adjacent to newly installed vibrating wire piezometers to allow data comparison	Ongoing as pneumatic equipment is functional	Complete
18	Implement protective measures for functional pneumatic piezometers to reduce degradation rate	2019	Ongoing