

Madrone Pump Station

General Site and Safety Considerations

Tuesday, December 01, 2015

GENERAL SITE CONDITION/ACCESS

Vehicle Entrance and Exit to Site	None
Parking	On street
Sight lighting Fixture	None

SAFETY CONSIDERATIONS

General Site Safety Issues	Retaining wall approximately 2 feet high behind structure - potential trip/fall issue but appears to be within building code limitations
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SITE SECURITY

Facility Fenced	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Privacy Fence	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Fence Material	N/A	Height of Fence	N/A
Method of Securing Access Gates	N/A	Fence Topping	N/A

Adequate security for keeping public off site?	No
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Notes:

Drainage from roof sheds across site



General Site Photos

Tuesday, December 01, 2015



Site, looking north



Site, looking south

Equipment Housing

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Equipment Housing	<input checked="" type="checkbox"/> Building	<input type="checkbox"/> Enclosure	<input type="checkbox"/> Other		
Condition	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input checked="" type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Criticality	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	
Serviceability	<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
Structural Materials	Concrete				
Age	Unknown				
Locking Doors	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No			
Intrusion Alarm	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No			

Dimensions:

Length	~25	ft
Width	~12	ft

HVAC:

Heat	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Cooling	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Humidity Control	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Fan	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Notes:

Ventilation is passive through roof vent whirlybirds. Blocked off during cold weather to keep heat in building.

No drainage in building. Water collected in basins in pipe chase and manually drained/pumped out by operators.

Water intrusion into bottom of sump, possibly from groundwater through cracks.

Appears to be some settlement of floor at southwest corner of building.



Equipment Housing Photos

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Entrance, north face of building



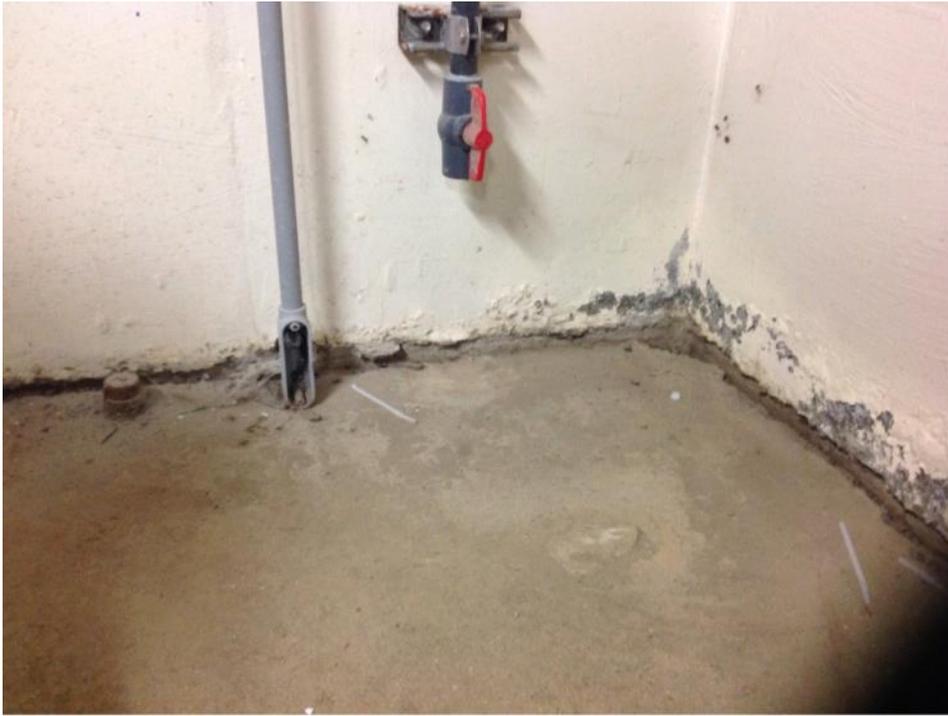
North and west sides of building exterior



Inside the Madrone Pump Station



Ceiling of Madrone Pump Station



Potential evidence of settlement in SW corner?



Hypochlorite dosing system



Basin for collecting station water due to cracked sump



Station electrical/control cabinets

Flow Meter and Vault(s)

Tuesday, December 01, 2015

Flow Meter	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No			
Condition	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input checked="" type="checkbox"/> 5
Criticality	<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
Serviceability	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input checked="" type="checkbox"/> 4	
Asset Nos.	FT-7-7-1				
Location	Adjacent to south exterior of pump station building				
Type/Manufacturer	Signet Scientific, MK575R				
Age	Unknown				

Vault	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Description	Flow meter and chlorine injection		
Structural Materials	Concrete manhole		
Dimensions	4 foot dia		
Access Hatch Fall Protection	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Access Hatch Lock	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Intrusion Alarm	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Notes:

Significant corrosion of piping and taps. High priority to repair/replace.



Flow Meter and Vault(s) Photos

Tuesday, December 01, 2015



Hypochlorite dosing and old flow meter insertion location



Significant corrosion of piping in hypochlorite dosing vault

MADRONE PUMP #1

Tuesday, December 01, 2015

Suction Zone	1108.5	Discharge Zone	1240
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Pumping System No. 1

Condition 1 2 3 4 5

Criticality 1 2 3 4

Serviceability 1 2 3 4

Pump Type Vert. Turb. End Suction Split case In-line centrifugal

Mounting Horizontal Vertical

Pump from Piping Can Basin/Clearwell

Pump to Closed zone Pressure tank Reservoir

Asset no.	P-7-7-1
Manufacturer	WEINMAN
Model	5LI
Serial #	735085
Age	01-JUN-81

Rated Design Pt 1300 gpm @ 138 feet TDH

Ability to Isolate Pump Yes No

How to Remove Pump No lifting or hatches

MOTOR

ODP TEFC TENV TEBC Diesel Engine Other

Horsepower 60 Voltage Phase rpm 1780

Manufacturer	US Motors
Model	
Serial #	
Age	

Inverter duty rated? Yes No Unknown

Motor Driver VFD Soft Starter FVNR Starter None

Notes:



Valves and Gauges

Tuesday, December 01, 2015

Check/Control Valve	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Reported/Exterior Condition	No issues noted.
Asset Nos.	FCV-7-7-1-2
Type/Manufacturer	CLA-VAL, stock no. 60-11-3J, size & cat no. 8-60-11AB
Age	Unknown

Isolation Valve(s)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Reported/Exterior Condition	No issues noted.
Asset Nos.	FV-7-7-1-1, FV-7-7-1-3
Type/Manufacturer	Kennedy butterfly valves, 8" on suction and discharge, Adaptorq 8-1508
Age	1981

Pressure Gauge(s)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Asset Nos.	PIT-7-7-1 Suction, PIT-7-7-2 Discharge
Type/Manufacturer	Gauges: Ashcroft
Age	Unknown

Notes:

Common air release valve on discharge header

Suction pressure indicator located in trench

Discharge pressure indicator on common header



Piping

Tuesday, December 01, 2015

Common Suction Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	12
Pipe material	Ductile iron pipe
Age	Unknown

Pump Specific Suction Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	8
Pipe material	Ductile iron pipe
Age	Unknown

Pump Specific Discharge Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	8
Pipe material	Ductile iron pipe
Age	Unknown

Common Discharge Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	12
Pipe material	Ductile iron pipe
Age	Unknown

Notes:



Pump/Valve/Piping Photos

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Pump No. 1



Pump No. 1



Pump No. 1 control valve



Pump No. 1 control valve nameplate



Common discharge piping from pumps 2 and 3

MADRONE PUMP #2

Tuesday, December 01, 2015

Suction Zone	1108.5	Discharge Zone	1240
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Pumping System No. 2

Condition 1 2 3 4 5

Criticality 1 2 3 4

Serviceability 1 2 3 4

Pump Type Vert. Turb. End Suction Split case In-line centrifugal

Mounting Horizontal Vertical

Pump from Piping Can Basin/Clearwell

Pump to Closed zone Pressure tank Reservoir

Asset no.	P-7-7-2
Manufacturer	
Model	CR150-2-2 A-G-A-E-KUBE
Serial #	A96938994-P11040200
Age	14-OCT-2010

Rated Design Pt 790 gpm @ 130 feet TDH

Ability to Isolate Pump Yes No

How to Remove Pump No lifting or hatches

MOTOR

ODP TEFC TENV TEBC Diesel Engine Other

Horsepower 40 Voltage 230/460 Phase 3 rpm 3520

Manufacturer	Baldor
Model	
Serial #	C1005210018
Age	Unknown

Inverter duty rated? Yes No Unknown

Motor Driver VFD Soft Starter FVNR Starter None

Notes:

Pump out of service due to motor high temperature. New bearing has been ordered.



Valves and Gauges

Tuesday, December 01, 2015

Check/Control Valve	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Reported/Exterior Condition	No issues noted.	
Asset Nos.	FCV-7-7-2-2	
Type/Manufacturer	Cla-Val, 60-11-2A,6-60-11AB	
Age	Unknown	

Isolation Valve(s)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Reported/Exterior Condition	No issues noted.	
Asset Nos.	FV-7-7-2-1, FV-7-7-2-3	
Type/Manufacturer	Kennedy gate valves, 6" on suction and discharge	
Age	Unknown	

Pressure Gauge(s)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Asset Nos.	See Pump 1 valves and gauges sheet for info on pressure gauges	
Type/Manufacturer		
Age		

Notes:



Piping

Tuesday, December 01, 2015

Common Suction Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	12"
Pipe material	Ductile iron pipe
Age	Unknown

Pump Specific Suction Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	6"
Pipe material	Ductile iron pipe
Age	

Pump Specific Discharge Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	6"
Pipe material	Ductile iron pipe
Age	Unknown

Common Discharge Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	12"
Pipe material	Ductile iron pipe
Age	Unknown

Notes:



Pump/Valve/Piping Photos

Tuesday, December 01, 2015



Pumping System No. 2



Pumping System No. 2 suction isolation valve



Pumping System No. 2 pump control valve and discharge isolation valve



Pumping System No. 2 pump control valve nameplate



Pumping System No. 2 discharge isolation valve and common air release valve



Common suction pressure indication

MADRONE PUMP #3

Tuesday, December 01, 2015

Suction Zone	1108.5	Discharge Zone	1240
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Pumping System No. 3

Condition 1 2 3 4 5

Criticality 1 2 3 4

Serviceability 1 2 3 4

Pump Type Vert. Turb. End Suction Split case In-line centrifugal

Mounting Horizontal Vertical

Pump from Piping Can Basin/Clearwell

Pump to Closed zone Pressure tank Reservoir

Asset no.	P-7-7-3
Manufacturer	WEINMAN
Model	4L
Serial #	735084
Age	01-MAY-81

Rated Design Pt 600 gpm @ 140 feet TDH

Ability to Isolate Pump Yes No

How to Remove Pump No lifting or hatches

MOTOR

ODP TEFC TENV TEBC Diesel Engine Other

Horsepower 40 Voltage Phase rpm

Manufacturer	Weinman
Model	Unknown
Serial #	Unknown
Age	Unknown

Inverter duty rated? Yes No Unknown

Motor Driver VFD Soft Starter FVNR Starter None

Notes:



Valves and Gauges

Tuesday, December 01, 2015

Check/Control Valve	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Reported/Exterior Condition	No issues noted.	
Asset Nos.	FCV-7-7-3-2	
Type/Manufacturer	Cla-Val, 60-11-2A, 6-60-11AB	
Age	Unknown	

Isolation Valve(s)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Reported/Exterior Condition	No issues noted.	
Asset Nos.	FV-7-7-3-1, FV-7-7-3-3	
Type/Manufacturer	GV/Waterous - 506, 6"	
Age	Unknown	

Pressure Gauge(s)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Asset Nos.	See Pump 1 valves and gauges sheet for info on pressure gauges	
Type/Manufacturer		
Age		

Notes:



Piping

Tuesday, December 01, 2015

Common Suction Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	12"
Pipe material	Ductile iron pipe
Age	Unknown

Pump Specific Suction Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	6"
Pipe material	Ductile iron pipe
Age	Unknown

Pump Specific Discharge Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	6"
Pipe material	Ductile iron pipe
Age	Unknown

Common Discharge Pipe

Reported/Exterior Condition	No issues noted.
Pipe size	12"
Pipe material	Ductile iron pipe
Age	Unknown

Notes:



Pump/Valve/Piping Photos

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Pumping System No. 3



Pumping System No. 3 suction isolation valve



Pumping System No. 3 pump control valve and discharge isolation valve



Pumping System No. 3 pump control valve nameplate



Pumping System No. 3 discharge isolation valve

Backup Power

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BACKUP POWER

Source	<input checked="" type="checkbox"/> None	<input type="checkbox"/> Pig tail for portable	<input type="checkbox"/> On-site, permanent
Transfer Switch	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Type	<input type="checkbox"/> Manual	<input type="checkbox"/> Auto	

Notes:

STANDBY GENERATOR

Condition	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Criticality	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
Serviceability	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	
Asset No.					
Manufacturer					
Model					
Serial #					
Age(s)					
Location					
Electrical capacity	KW		Voltage		Phase(s)
Fuel type	<input type="checkbox"/> Diesel	<input type="checkbox"/> Nat. Gas	<input type="checkbox"/> Propane	<input type="checkbox"/> Gasoline	<input type="checkbox"/> Other
Full load fuel demand		gal/hr			
Fuel stored on-site		gal			

Notes:

