

Re-Chlorination Plant - Sodium Hypochlorite Dosing						
NOTE: THIS CHAIR 3 UNDERTAKEN ON 3rd NOVEMBER 2016 WHEN REVISED LAYOUTS WERE AVAILABLE						
	Maintainability Aspect	Why?	Causes	ACTION		
				Recommendation/Comment	Person Responsible	Action Outcome
	Site Access General	Hypochlorite Delivery Bund				
1	POSTURE / MANUAL HANDLING	Lifting of sump covers Sump pump removal etc. Cut-out for valve key to be provided.	Heavy weights to be lifted for maintenance and operation tasks.	FRP grating to be used as preferred FRP to be added to acceptable products list Refer GRP specification	Andrew Rakvin	DTC Drawings
2	POSTURE / MANUAL HANDLING	Drain Valve location may be knocked off from tank	Movement of mobile platform around floor for access to top of tank.	relocate to similar location as the CDU tank	Andrew Rakvin	DTC Drawings
3	ACCESS/ EGRESS	Location of bund sump and cover	Too close to access ladder, trip point	Review design to move away from access stairs. Need to minimise length of drain pipe before drain valve.	Andrew Rakvin	DTC Drawings
4	ACCESS/ EGRESS	transfer pump line at 90 degrees to tank layout	poor ergonomics location, insufficient room.	Transfer pump line at 45 degrees similar to the 13.5kL tank set up	Andrew Rakvin	DTC Drawings
5	ACCESS/ EGRESS	Location of vent on tank	vent to be at high point to enable sufficient venting	vent from top of the tank, to come out through wall and turn upwards under the eaves with conical vent top. Vent line to slope back to tank for any condensation to run back into tank. Include sign for the vent on the wall	Andrew Rakvin/Gino Iori	DTC Drawings / Specification
6	ACCESS/ EGRESS	Query of requirement for second set of dosing pumps in second dosing cabinet at some plants.	requirement to dose to two points	second dosing pumps are not required on small units only on large units. To be shown where required in layouts and PIDs.	Andrew Rakvin	DTC Drawings
7	ACCESS/ EGRESS	Potential for tampering/injury	Unauthorised access to site	remove camlock on the dosing system, camlocks to be poly.	Andrew Rakvin	DTC Drawings
8	ACCESS/ EGRESS	Truck access to delivery bay.	Delivery of chemical and equipment	Ensure that appropriate truck access/turning is provided.	Murray Simpson	RCP specification requirement on contractor
9	ACCESS/ EGRESS	General access to site.	Unauthorised access to site	Ensure site is appropriately secured with fencing and locked gates.	Murray Simpson	RCP specification requirement on contractor

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10	ACCESS/EGRESS	General site layout	Need space for future maintenance activities.	Allow for future laydown area for repair works. Generally, use delivery bund for large items (EG tanks) or keep on trucks until needing to be moved into position. Building roof to be suspended off crane whilst tank is replaced.	Murray Simpson	RCP specification requirement on contractor
11	ACCESS/EGRESS	Ladders/ Access Required	Access to top of tank level sensor and roof fans and lights.	Portable Ladder provided for access as needed. Bailey Part Number Required	Barry Cook to provide to Andrew Rakvin. Andrew Rakvin to add to drgs.	DTC Drawings
12	ACCESS/EGRESS	Camlock Connection for Delivery	Need to take load of hose off camlock fitting to minimise breakage.	To suit 600-900 Orica specification Support for Camlock hose connection to be provided, preferably resting on lip of entrance door.	Andrew Rakvin	DTC Drawings
13	ACCESS/EGRESS	Safety shower/eyewash height	Needs to be not too low or too high	Safety shower eyewash height to be in accordance with Orica guidelines	Andrew Rakvin	DTC Drawings
14	ACCESS/EGRESS	Dangerous Goods Trucks stopping in public Area. Preferred option is to stop truck in private area owned by SWC where truck driver can safely egress truck to open gates. If this is not possible individual solution to be sought.	Unsafe access by delivery truck driver to open gates. Vehicle parked in unsafe area, risk of being hit by other vehicles.	Create footprint plan views with rigid truck turning circles showing minimum acceptable dimensions on drawings Atlas to prepare drawings based on conservative truck bund width. Minimum footpath width to be specified (to allow opening of doors without stepping backwards off	Murray Simpson	RCP specification requirement on contractor
15	ACCESS/EGRESS	Bund roll over not clear to drivers and pedestrians	Night work Uneven surfaces	Stripes to be added to bund rollovers Colour coding of concrete Ferrous Chloride colour	Andrew Rakvin	DTC Drawings
16	ACCESS/EGRESS	Access to a small tank is limited due to the size of the manway	small tank	recommend 450mm min size manway in small tanks, 600mm in large tanks.	Andrew Rakvin/Gino Iori	DTC Drawings / Specification
17	HEIGHTS/DROPPED OBJECTS	N/A	N/A	N/A	N/A	N/A
18	WEIGHT	Roads and delivery bund	loading from delivery and maintenance trucks on site.	Design for expected loads.	Andrew Rakvin	DTC Drawings
19	DISCOMFORT / STRESS	N/A	N/A	N/A	N/A	N/A
20	PERSONNEL PROT. EQUIPMENT	Signage	Signage requirements have changed for Dangerous Goods.	New signage specification to be referenced	Andrew Rakvin	DTC Drawings
21	VISIBILITY	Refer lighting issues	Night work on site.	Standard lighting design to be undertaken	AR	DTC Drawings
22	VISIBILITY	Lighting of tank issues with inadequate transparency	Can not see the tank level when sun is at your back	Wait until construction has been undertaken to determine if additional lighting or a level instrument required. Leave out for now as not required.	No action	N/A
23	SLIPS, TRIPS, FALLS	Potential for injury	Movement of operations and maintenance personnel and delivery drivers.	Appropriate paint markings on speed bump and trip points around bund Step height of RCP bldg relative to footpath. Non-slip additive to epoxy coating	AR	DTC Drawings

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24	ROTATING / MOVING EQUIPMENT	Inlet valve	Lockable valve	Fill valve to be lockable by SWC personnel and not accessible by non SWC staff (i.e. truck driver) Camlock on bund pump out line to be fitted with padlockable cover/ dust cap	AR	DTC Drawings
25	ROTATING / MOVING EQUIPMENT	N/A	N/A	N/A	N/A	N/A
26	IS REPAIR DIFFERENT?	N/A	N/A	N/A	N/A	N/A
27	OTHERS THAT MAY APPLY	Site drainage	Chemical spillage onto footpaths	Footpaths to drain back to delivery bund.	AR	DTC Drawings
28	OTHERS THAT MAY APPLY	Safe vehicular access to site.	Movement of vehicles on site	Provide appropriate site signage. Provide bollards where traffic is prohibited. Traffic engineer to confirm the access is suitable, according to Australian Standards and safe.	AR	DTC Drawings
29	OTHERS THAT MAY APPLY	External Aerial required for all sites for 3G transmission	must be indicated on layouts.	Show 3G aerial on roof	AR	DTC Drawings

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	RCP unit	Internals and externals of RCP				
30	POSTURE / MANUAL HANDLING	N/A	N/A	N/A	N/A	N/A
31	ACCESS/EGRESS	Layout of electrical cabinets	Limited space within RCP	Electrical equipment to have adequate space for occupants within the RCP.	Andrew Rakvin	DTC Drawings
32	ACCESS/EGRESS	Layout of equipment	Limited space within RCP	Internals of RCP to have adequate space for personnel movement and use of tools and equipment.	Andrew Rakvin	DTC Drawings
33	ACCESS/EGRESS	Limited access to the Electrical Control room	Improvement needed to clearances around the electrical cabinet access.	2 cabinets required, one is a 50 / 50 split, the other is a 60/40 split	Andrew Rakvin/Gino Iori	DTC Drawings / Specification
34	HEIGHTS / DROPPED OBJECTS	Maintenance of light / fans on top of RCP Building	Need for night works	Platform ladder access - light to be LED.	Andrew Rakvin	DTC Drawings
35	WEIGHT	Potential for damage due to: incorrect lifting procedure, unknown lift type, unsound lifting points, equipment not restrained	Lifting of equipment for maintenance	Lightweight grates (FRP). Tank to be tied back to wall.	Andrew Rakvin	DTC Drawings
36	WEIGHT	Site layout	Need for use of large cranes for off loading	Design to include how RCP will be offloaded, lifted and located on site and craning needs and loading.	Andrew Rakvin	DTC Drawings
37	DISCOMFORT / STRESS	Ease of access	Chemical delivery process	RCP building is to be located on the passenger side of the tanker.	Andrew Rakvin	DTC Drawings
38	DISCOMFORT / STRESS	Temperature of the room too high breaking down the quality of the Hypo	high temperature / sun on western wall	treat on case by case basis		
39	PERSONNEL PROT. EQUIPMENT	Exposure to chemicals	Chemical deliver and maintenance work.	BYO PPE. Folder on site with MSDS and emergency contacts etc. already in Switchroom.	Andrew Rakvin	DTC Drawings
40	PERSONNEL PROT. EQUIPMENT	N/A	N/A	N/A	N/A	N/A
41	VISIBILITY	Safe work requires adequate lighting	Night work	Provide external building light. Bollards with reflectors are located at various sites to protect discharge locations and act as guidance for reversing trucks onto site.	Andrew Rakvin	DTC Drawings
42	SLIPS, TRIPS, FALLS	finish applied to the floor to be confirmed as NOV can have grit included	SLX may not provide the finish required.	Remove SLX from drawings and specs use NOV.	Andrew Rakvin/Gino Iori	DTC Drawings / Specification
43	ROTATING / MOVING EQUIPMENT	N/A	N/A	N/A	N/A	
44	IS REPAIR DIFFERENT?	Easy repair offers less chance of injury Pipe specification to indicate correct materials to ensure and repairs required will use correct solvents for different materials.	Need to repair in constricted space.	Long radius bends on double-contained dosing line for ease of replacement of dosing line in future. Pipe specification to be provided on IFC & WAE drawings.	Andrew Rakvin	DTC Drawings
45	IS REPAIR DIFFERENT?	pump maintenance	Pumps have to be accessible / diaphragm has to be removed once a year.	ensure access is sufficient without need to remove pump.	Andrew Rakvin	DTC Drawings
46	OTHERS THAT MAY APPLY	Leakage of chemicals	Use of inground pipes to delivery dosing chemicals to dosing point.	Use secondary containment pipes.	Andrew Rakvin	DTC Drawings
47	OTHERS THAT MAY APPLY	Important to know site safety hazards before starting work or accessing areas where known hazards are present.	New or inexperienced workers on site.	Safety Signage: Following new Sydney Water safety signage specification.	Andrew Rakvin	DTC Drawings

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48	OTHERS THAT MAY APPLY	Water pipes and chemical dosing lines enter through floor of electrical switchroom.	Water or chemical leakage onto switchroom floor.	Switchroom floor to fall to door	Andrew Rakvin	DTC Drawings
49	OTHERS THAT MAY APPLY	Water pipes and chemical dosing lines enter through floor of electrical switchroom.	Water or chemical leakage onto switchroom floor.	Splash guard to be added to standard drawings	Andrew Rakvin	DTC Drawings
50	OTHERS THAT MAY APPLY	Slope of footpath	Spillage of chemical onto footpath.	Footpath to slop towards delivery bund.	Andrew Rakvin	DTC Drawings
51	OTHERS THAT MAY APPLY	Site specific requirements	Not able to be covered in standard drawings or specifications.	Checklist of items to be added to specification (ACP0002) (to be used by writer of contract specification to cover non-drawing items) Deliverable to be added to contractors' work package to provide future lift plans,	Andrew Rakvin	DTC Drawings
52	OTHERS THAT MAY APPLY	Drainage of the pipe penetration in the electrical switchroom	burst pipe in the enclosure	Include small drain at rear of enclosure through wall with flap valve / rodent protection	Andrew Rakvin/Gino Iori	DTC Drawings / Specification
53	OTHERS THAT MAY APPLY	Table and chair required in RCP	ergonomically required	Include table and chair in the layout drawings	Andrew Rakvin/Gino Iori	DTC Drawings / Specification
54	OTHERS THAT MAY APPLY	No booster pump shown for the safety shower / eye wash	required when pressure too low	Include in the drawings where required.	Andrew Rakvin/Gino Iori	DTC Drawings / Specification