



SNC – LAVALIN

78" SEWER AND SLUICE GATE INSPECTION

SEPTEMBER 29, 2006

PERFORMED BY:

DOMINION DIVERS (2003) LTD

Supervisor:
G. Dobson

Divers:
S. Wills
G. Mcintosh
C. Ringius
D. Norkum

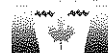
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CADC



CANADIAN ASSOCIATION OF
DIVING CONTRACTORS

OBJECTIVE:

To perform a visual inspection of, and record in DVD format, the two sluice gates to determine their condition and serve as a basis for defining the extent of work required to restore the gates to good operating condition. In conjunction with the sluice gate inspection, an inspection of the first 20 feet of the 78 inch influent sewer and a description of the interior of the structure shall be conducted to determine their current condition.

OPERATIONAL PROCEDURE (CHRONOLOGY):

Dominion Divers attended the site of the SEWPCC on September 29, 2006 at the request of Mr. Roland Vercaigne, arriving on site at 0430 am and proceeded to conduct a pre-job meeting during which an operational plan and emergency plan were drawn up. Following the meeting, the work areas consisting of the Exclusion Zone and Contamination Zone were identified and marked, after which a crane was positioned. Using the crane, the diver was lowered into the gate chamber. The diver and in-chamber tender were attached to a fall arrest system and the atmosphere in the chamber was continually monitored. Due to continually increasing flows, the 78 inch sewer was inspected first, followed by the sluice gates, and then the concrete structure. The findings are contained in this report and are accompanied by a real-time DVD record of the inspection.

OBSERVATIONS:

78" influent sewer:

An area of minor spalling was noted at the entrance, around the top of the sewer and chamber wall. The upper half of the sewer, above the water line, was dirty and minor spalling was noted. The lower half, below the water line, was clean and smooth.

Sluice Gates:

Both sluice gates were found to be in good condition with some evidence of minor pitting. The gate dimensions were verified and no obstructions were found. Both gates were covered in a light build-up of scale that cleaned off easily. All stainless hardware was found to be in good condition. The gate guides were found to be in good condition with no evidence of impediment. The two inch bronze stems and couplers were found to be in good condition, they were covered in a light build-up of scale that cleaned off easily. The stem mounting block in both gates appeared to be in good condition. All adjustable mounting brackets and bearings are set into the concrete wall and appeared to be solid with a build-up of scale that cleaned off with effort. The operation of the bearings was not tested. The scale build-up on the brackets was lighter towards the top of the chamber. The asphalt sill below both gates was worn, up to approximately three inches deep, with the west sill being slightly worse.

Gate Chamber Lower Level:

The stainless steel ladder rungs were found to be in good condition. Surface scalling and exposed aggregate was noted on both the back (south) and side walls below a quarter inch layer of a mineral-type build-up that was easily scraped off. A cast iron process drain breaks the chamber's back wall at a 45 degree angle from the south west. The drain appeared to be in good condition.

Gate Chamber Lower Level Platform:

The leading edge of the platform was bullnosed and the concrete was soft and flaking in the immediate area, the remainder of the platform appeared to be solid and in good condition.

Gate Chamber Intermediate Level:

The stainless steel ladder rungs were found to be in good condition. Surface scalling and a mineral-type build-up were noted on all walls up to three feet from the upper level platform. No exposed aggregate was noted. The scalling is slightly less than that noted on the lower level. The mineral-type build-up was up to one half inch on the back wall and easily scraped off. The top three feet of all the walls was found to be smooth concrete with very little scalling, or mineral-type build-up, and no exposed aggregate. The R.V. Dump pipe was mounted in the south east corner and appeared to be in good condition.

Gate Chamber Upper Level Platform:

The platform appeared to be solid and in good condition with some scalling inside the hatch openings. The stainless steel hatches were found to be in good condition, however the rubber air-tight seals were found to be missing in some areas.

Gate Chamber Upper Level:

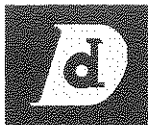
The stainless steel ladder rungs were found to be in good condition. The concrete was found to be smooth with a light layer of white powder that was easily wiped off. No exposed aggregate was noted. The ceiling appeared to be in good condition with some areas of minor honeycombing and rust stains were noted in star patterns.

Floor Box assemblies:

Both floor box assemblies were found to be rusty, but appeared to be undamaged although their operation was not checked. The east operator's threaded shaft was found to be in good condition under a layer of grease.

SYNOPSIS:

The over-all condition of the concrete structure, 78 inch sewer, sluice gates and their associated parts appears to be good with no evidence of any significant damage or corrosion. No moving parts were checked for their operation.



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OPERATIONAL PLAN / DIVE JHA

PROJECT: SEWPCC SLUICE GATE, 78" SEWER, & CHAMBER INSPECTION		
DATE ISSUED: SEPT 29, 2006	CLIENT: SNC - LAVALIN	LOCATION: SEWPCC
DATE EXPIRES: SEPT 29, 2006	CLIENT REP: R. VERCAIGNE	CONTACT #:

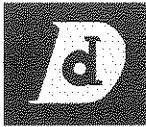
JOB STEPS / PROCEDURES	
1	SET UP ON SITE
2	USE CRANE TO LOWER DIVER INTO CHAMBER
3	CARRY OUT INSPECTION
4	CLEAN UP & DEMOB
5	
6	
7	
8	
9	
10	

POTENTIAL HAZARDS		CONTROL MEASURES
1	DARK	PORTABLE LIGHTING
2	USE OF BO'S'NS CHAIR	USE HARNESSSES & FALL ARREST DEVICE
3	CONTAMINATED ENVIROMENT	FOLLOW PROCEDURE USE PPE MONITOR AIR QUALITY
4	CONTAMINATED EQUIPMENT	FOLLOW PROCEDURE USE PPE & DISINFECTANT
5		DISPOSE OF ALL WASTE APPROPRIATELY
6		
7		
8		
9		
10		

EMERGENCY PLAN IN PLACE	X	SAFE DIVE WORKSHEET COMPLETE	N/A
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AUTHORITIES NOTIFIED	DATE	METHOD

SUPR	DIVERS	SIGN
X	G.DOBSON	
	S.WILLS	
	G.MCINTOSH	
	C.RINGIUS / D.NORKUM	
CLIENT	R.VERCAIGNE	



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EMERGENCY CONTINGENCY PLAN

PROJECT: SEWPCC SLUICE, GATE 78" SEWER, & CHAMBER INSPECTION			
DATE ISSUED: SEPT 29, 2006	CLIENT: SNC - LAVALIN	LOCATION: SEWPCC	
DATE EXPIRES: SEPT 29, 2006	CLIENT REP: R.VERCAIGNE	CONTACT #:	
911 SERVICE AVAILABLE	X	THERAPEUTIC OXYGEN	X
		FIRST AID KIT	X
NEAREST HYPERBARIC FACILITY	D.D. SHOP		Ph: 237 8639
NEAREST HOSP./NURSING STATION	VICTORIA GENERAL		Ph: 269 3570
NEAREST POLICE STATION	DAKOTA		Ph: 986 7686
NEAREST TELEPHONE	ON SITE		Ph: 981 0956
EVACUATION METHOD	AMBULANCE		Ph: 911

◆EMERGENCY PROCEDURES◆

- Compressor failure; Switch to H.P. air and remove the diver from the water.
- Freeze-up (downstream of rack), or failure of the divers umbilical; Diver on bailout - return to surface.
- System failure; In the event of *any component failure*, remove the diver from the water *Immediately*, using line pull signals if necessary. Line pull signal table is located on all comms. boxes.
- In the event of any member of the dive crew being unable to carry out their duties, the diver shall be removed from the water S.A.P, until the situation is rectified.
- Deteriorating weather; Remove the diver from the water and get to shelter A.S.A.P.
- A Rapid Neuro Field Exam will be conducted if a medical complaint is made.
- DMO will be contacted if the diver fails a Test of Pressure and/or DCS is suspected.
- Diving Accident Flowchart will be followed until DMO is on line.

SPECIFIC EMERGENCY PROCEDURES:

- NOTIFY SEWPCC OPERATORS OF ANY EMERGENCY

EMERGENCY PHONE NUMBERS

MINION DIVERS (2003) LTD	800 599 4933	D.M.O. Dr.CAROLINE BAIN	403 830 0540
GARTH HIEBERT	204 981 6896	ENVIRONMENT CANADA (Spills)	800 268 6060
GUY DOBSON	204 981 0956	MANITOBA LIFEFLIGHT	800 213 1228

SEWPCCL

SEPT 29 / 2004

0630 ENTERED CHAMBER & PRESSURE WASHED GATE VALVES

0730 ~~78" INTERCEPTOR~~ ~~SHAFT~~ ENTRANCE TOP

ONLY ABOVE WATER LEVEL, BELOW WATER

SMOOTH CONC. ~~1ST JOINT ORF~~ UPPER 1/2

DIRTY & STAINED LOWER 1/2 SMOOTH & CLEAN

LEFT GATE MINOR PITTING ~~BRASS~~ ~~GATE~~ S.S.

HARDWARE IN GOOD CONDITION

GATE WIDE GOOD CONDITION ASPHALT SILL WORN UP TO 3"

GATE WIDTH 15/16 5 3/4 HEIGHT 52 1/8

2" STEM GOOD CONDITION BRONZE CLEANS UP

BRACKET SET 3" INTO WALL W/ BEARING ATTACHED

BEARING IS ADJUSTABLE CLEANS UP

RIGHT GATE GOOD CONDITION NO OBSTRUCTIONS

LIGHT ~~CONCRETE~~ BUILD UP CLEANS OFF

2" STEM GOOD CONDITION BRONZE CLEANS UP

LADDER RUNGS S.S. GOOD CONDITION BOTH SIDES

BACK WALL EXPOSED AGGREGATE SURFACE

SCRAMBLING & 1/4" MINOR BUILD UP

ASPHALT MISSING FROM SILL W. SIDE

WORSE.

SIDE WALLS SURFACE SCRAMBLING EXPOSED

AGGREGATE MINOR BUILD UP UP TO 6" HIGH

WALL AROUND INTERCEPTOR AS ABOVE

WITH SCRAMBLING AROUND PIPE UP TO 1ST JOINT,

LEFT COUPLER GOOD CONDITION

CLEANS UP S.S. BOWS

1ST FUR FRONT EDGE ROUNDED OFF

INTERMEDIATE LEVEL CONCRETE TOP BUILD

UP & SCURED CONC. SLIGHTLY LESS

BRACKET IN GOOD SHAPE LESS BUILDUP SHAFT

CLEANS UP IN GOOD SHAPE (RIGHT?)

BACK WALL MORE MINOR BUILD UP

THAN SIDES OR FRONT UP TO 1/2"

RV DUMP PIPE.

ALL LADDER RUNGS IN GOOD CONDITION.

PIPE IN BACK WALL @ 45° FROM S.W.

CAST. PROCESS DRAW.

Rusty stem coupler OK.

UPPER BRACKETS W/LS BUILDUP GOOD CONDITION.

SHAFT IN GOOD SHAPE.

W/LS BUILDUP ON W/LS @ TOP 3'

SMOOTH CONC @ TOP NO SCALING NO
EXPOSED AGGREGATE.

SLIGHT BUILDUP @ CEILING. SMOOTH

CONC. NO SCALING.

SCALING IN OPENING (HATCH)

UPPER LEVEL HATCHES GOOD SHAPE SCALS
MISSING.

WEST OPERATOR RUSTY. THREADED SHAFT

COVERED IN GREASE GOOD CONDITION

EAST OPERATOR RUSTY. THREADED SHAFT GOOD
CONDITION.

LADDER RUNGS S.S. GOOD COND.

CONC MINOR POWDER BUILDUP. EXPOSED
SWAY TIES.

CEILING CONC GOOD CONDITION SLIGHT

HONEY COMBING. STAR PATTERN RUST.