

TO: MR. ALAN ANDERSON
ENFORCEMENT ANALYST
WATER DIVISION, ENFORCEMENT BRANCH

RE: PERMIT NO. AR0034380, AFIN 01-00214

CITY OF STUTTGART

CONSENT ADMINISTRATIVE ORDER LIS NO. 16-006

COMPLETE TREATMENT SYSTEM EVALUATION

JUNE 1, 2016

CITY OF STUTT GART

304 SOUTH MAPLE STREET
STUTT GART, ARKANSAS 72160

PHONE: 870-673-3535 FAX: 870-673-7430

J. W. GREEN, JR.
MAYOR
870-673-4566

June 7, 2016

MITRI A. GREENHILL
CLERK/TREASURER
870-673-3535 EXT. 222

Arkansas Department of Environmental Quality
5301 Northshore Drive
North Little Rock, AR 72118-5317

ELIZABETH SKINNER
CITY ATTORNEY
870-673-0500

ATTN: Mr. Alan Anderson
Enforcement Analyst
Water Division, Enforcement Branch

KIMBERLY BURGESS
FINANCE OFFICER
870-673-3535 EXT. 224

Dear Mr. Anderson,

We are enclosing the treatment system evaluation as required in the Consent Administrative Order LIS No. 16-006.

As shown in the U.S. Census Reports since 1980, Stuttgart has lost population over the past three decades.

CAROL B. ABLES
PERSONNEL DIRECTOR
870-673-8817

L. KEITH CONNELL
POLICE CHIEF
870-673-6631

<u>Year</u>	<u>Population</u>
2010	9,326
2000	9,745
1990	10,420
1980	10,941

BILLY BURNS
FIRE CHIEF
870-673-3530

GARY NORRIS
CODE ENFORCEMENT OFFICER
870-673-8296

In the reported three decades, Stuttgart has lost 1,615 people. The current Sewerage Treatment Plant rated at 3.5 MGD capacity appears adequate to property treat the City's wastewater flow to permit limits.

Additionally, the City of Stuttgart is actively pursuing a project, Step -2 Sewer Upgrades and Improvements, that involves replacing approximately 11 miles of old deteriorated concrete sewer lines and rehabbing manholes, at an overall budget of \$5,000,000. It is our opinion this work will virtually eliminate inflow in the proposed project area.

MICHAEL TAYLOR
SANITATION DIRECTOR
870-673-3111

The City is operating the sewerage treatment facility and is in compliance with permit limits.

CHRIS MAXWELL
STREET DIRECTOR
870-673-1481

While the attached Sewer Plant Evaluation Report is not proposing any additional unit process construction, it does identify 13 repairs and replacements, along with new tertiary pumping system and new SCADA Control System. The existing SCADA Control System was obliterated by lightning some time ago.

DANIEL MASSINGALE
MOSQUITO CONTROL OFFICER
870-673-7701

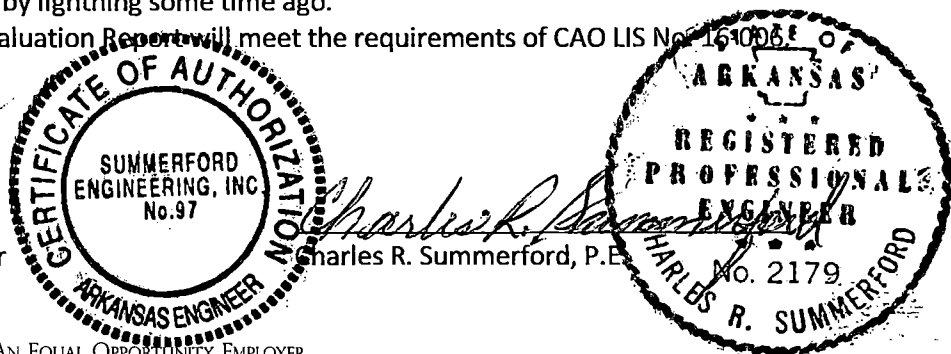
We trust the Evaluation Report will meet the requirements of CAO LIS No. 16-006.

CARL HUMPHREY
AIRPORT MANAGER
870-673-2960 PHONE
870-673-6646 FAX

Sincerely yours,
City of Stuttgart


J. W. Green, Jr., Mayor

TOMMY LAWSON
WATER/SEWER MANAGER
870-673-3246



SEWER PLANT EVALUATION
STUTTGART MUNICIPAL WATER WORKS
JUNE 1, 2016

The plant is currently rated at 3.5 MGD capacity.

1. Bar Screen and Rota PAC at Plant Entrance

This equipment was installed new in 2015. The new bar screen has a maximum flow capacity of 18.3 MGD. The Rota PAC, after screenings are removed from the wastewater stream by the bar screen, washes and packs the coarse screenings in plastic casings for disposal.

2. Primary Pumping Station

Three pumps, A1, A2, and A3, are submersible 6", 15 Hp-1150 RPM rated at 1215 gpm at 32' TDH pumps that deliver wastewater to the treatment processes for treatment.

The A2 bottom elbow stand needs replacement and possible pump replacement. As a minimum, this pump needs impeller and bottom elbow replacement

There are also four pumps, B1 thru B4, that pump excess flow above plant capacity into the 48 MG capacity flow regulating pond. The B pumps are 50 Hp rated at 3130 gpm at 47' TDH.

It is believed that all seven pumps in the primary pumping station were upgraded in 2001. Therefore, they have been in continuous service for the last 15 years.

The primary pumping station flow measurement is giving check coil alarms and may be ready for repair or maintenance. The meter is a Tiger Mag 18" flanged meter made by Sparling.

3. Metcan Grit Removal Mechanism and Sam Dewatering Screw were installed in 2015 and have a 5 MGD flow rating. This equipment is new and working fine. The Sam Dewatering Screw takes grit that is removed from the wastewater stream, washes same, and discharges into plastic garbage container. The container is picked up by front loader and carried to drying pad where it is spread and dried.

4. Primary Clarifiers

There are three (3) primary clarifiers, all three difference sizes. The wastewater flow from the grit removal system enters a splitter box which divides the flow matching the size of each clarifier. The sludge from each clarifier is pumped to the east digester. The supernatant then flows by gravity to the trickling filters.

In Building E which pumps sludge from the smallest clarifier, the sewer plant personnel installed a new Marlow Wastecore Pump in 2015.

In Building D that pumps sludge from the largest west clarifier has a Penn Valley Pump that was installed in 1998 that is in good repair and is operating satisfactorily.

Building F also has a Penn Valley Pump that was installed in 2001 and is operating satisfactorily.

The D3 intermediate size clarifier needs New Box Valve (underground) and a new tank valve. The valves were plug valves and will probably be replaced with 6" gate valves.

The largest clarifier D1 is out of service currently because the gear drive is being repaired by Layne-Christensen. The gear drive has been on order since January 2016 and should arrive soon and will allow this clarifier to be placed back in service.

5. Trickling Filters (2 Same Size)

Both trickling filters are operating satisfactorily

The trickling filter recirculation pumping station has four T6 Gorman-Rupp Pumps. All four (4) pumps are operating satisfactorily

6. Intermediate Clarifiers

The wastewater from trickling filters flows to the intermediate clarifiers. The supernatant is pumped to bio filters and the sludge is pumped to the West Digester.

The west intermediate clarifier has been repaired but is still out of service due to sludge line stop up. The stop up is due to be cleaned out and the clarifier returned to service.

The east intermediate clarifier needs cleaning out and has a gear drive problem.

7. Bio Towers

The Bio Towers have had field repairs to structure. They are now performing satisfactorily.

8. Solids Contact and Aeration Basin

The wastewater from the Bio Towers flows into the solids contact and aeration basin. Both air compressors are in good working order.

After the solids contact and aeration basin, the wastewater is pumped to final clarifier.

9. Final Clarifiers

The sludge from final clarifiers is pumped to the Primary Pump Station at head of plant.

The north clarifier is down for gear drive repair. The operator must obtain parts, repair gear drive and put back in service.

The north clarifier sludge pump station is out of service awaiting repair or replacement. The south clarifier sludge pump is also in need of repair.

10. Tertiary Pump Station

The Tertiary Pump Station is out of service because all three of the inclined screw pumps are in need of repair.

Plans and specs have been prepared for three (3) new single stage turbine solids handling pumps; but when bids were taken, the cost exceeded available budget. The Department is now seeking alternative pumps for lower prices within budget so a contract can be executed and proceed with replacing the tertiary pumps.

Because the Tertiary Pumping Station is out of service, the wastewater is going from the final clarifier to disinfection and discharge.

11. Tertiary Filters

Tertiary filters are out of service because Tertiary Pumping Station is not functional.

However, the tertiary filters had media removed and new media installed in late September 2015. So the filters are ready for service as soon as the tertiary pumps can be replaced and put back in service.

12. Chlorination Disinfection and Dechlorination

The chlorinator and sulfur dioxide feeders are both being operated manually. The control converter is inoperative and needs to be replaced to control feed rates and meet non-detect level chlorine in effluent discharge.

The effluent flow measurement equipment is performing good at this point.

13. Post Aeration

The post aeration system was installed in 2009 with one air compressor. It is advisable to purchase another duplicate air compressor for standby or installed as an alternate compressor because the existing compressor is running 24/7.

14. Flow Regulation Pond

The north surface aerator is now back in service. The three intermediate aerators in the pond are operating normally. The plant superintendent plans to remove the south aerator for repair and place back in service. In the pump back pump station on north side of flow regulation pond, the northerly pump is not operating. The 2nd pump is operating satisfactorily.

Also, I'm told that during construction, there was no valve installed in line between pond and pump back station. Now operator has no way of lowering water level in pump back station to service the dual pumps.

15. Aerobic Digesters

Both aerobic digesters received new aerators and gear drives in 2015. The East Digester also had a new bridge installed, with aerator and gear drive. Now both digesters are performing satisfactorily. However, the west decant clarifier's gear drive and scraper drive have now been repaired and placed back in service.

16. Filter Press

The filter press is working satisfactorily.

17. Sludge Dehydration Unit

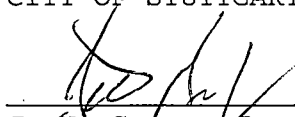
The Sludge Dehydration Unit was replaced with a new one in early 2015. The new unit is working satisfactorily.

**ESTIMATING COST FOR REPAIRS AND/OR REPLACEMENT
FROM SEWER PLANT EVALUATION
STUTTGART MUNICIPAL WATER WORKS
JUNE 1, 2016**

2. a.	The A2 Pump Impeller and Bottom Elbow Replacement	Estimated Cost	\$ 3,360.00
b.	Primary Influent Meter - New Flanged 18" Mag Meter Replacement	Estimated Cost	24,450.00
4. a.	At Intermediate Size Clarifier Replacing Existing Box Valve and Tank Valve with 6" Gate Valves	Estimated Cost	4,500.00
b.	Repairing and Reinstalling Gear Drive on Largest Primary Clarifier D1	Estimated Cost	12,050.00
6. a.	West Intermediate Clarifier - Cleaning Out Stopped Up Sludge Line	Estimated Cost	10,500.00
b.	East Intermediate Clarifier - Cleaning Out and Repairing Gear Drive - Parts on Hand	Estimated Cost	6,500.00
9. a.	Must Obtain Parts for Gear Drive, Repair and Put Back in Service. This is an 80' diameter clarifier.	Estimated Cost	100,000.00
b.	The Gorman-Rupp T-3 Sludge Pump is out of service on North Clarifier.	Estimated Cost	7,500.00
c.	The Gorman-Rupp T-3 Sludge Pump is needing repair or replacement on the South Clarifier.	Estimated Cost	7,500.00
12. a.	Replacing the Effluent Meter Control Converter to automatically pace the Chlorine Feeder, and Sulphur Dioxide Dechlorination Feeder will aid the operator to stay in compliance with the current Non-Detect Effluent Limit	Estimated Cost	6,500.00

13. a.	Standby Compressor for Post Aeration System	Estimated Cost	8,500.00
14. a.	South Aerator to be taken out of service for repairs.	Estimated Cost	9,000.00
b.	Line between flow regulating pond and pump back pumping station is 24-inch ductile iron and is about 27-foot deep, a 24-inch gate valve needs to be installed in line.	Estimated Cost	74,500.00
c.	Once the valve is in place, the pump back station can be dewatered so personnel can get into Wet Well and examine the loose rail and the 20 Hp Fairbanks Submersible Pump for possible repair and put back in service.	Estimated Cost	<u>2,900.00</u>
	Subtotal		\$ 277,760.00
	Contingency		<u>28,000.00</u>
	Suggested Budget		\$ 305,760.00
	Tertiary Pumping Equipment Budget		263,200.00
	New SCADA Control System and Monitoring for Sewer System		<u>700,000.00</u>
	Total Estimated Cost		\$1,268,960.00
	Less Tertiary Pumping Equipment Budget, which is on hand		<u>-263,200.00</u>
	New Funding Needed		\$1,005,760.00

CITY OF STUTTGART



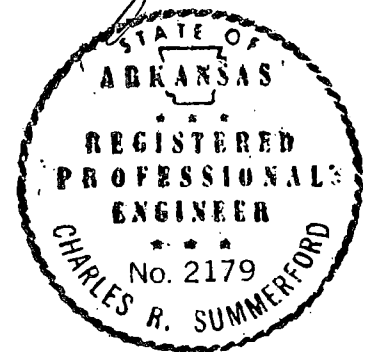
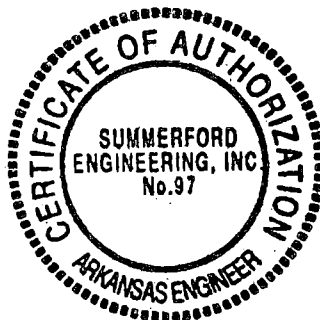
 J. W. Green, Jr., Mayor



 Tommy Lawson, Water Works Manager



 Charles R. Summerford, P.E.



OFFICE OF:
 SUMMERFORD ENGINEERING, INC.
 CONSULTING ENGINEERS
 ARKADELPHIA, ARKANSAS



1. BAR SCREEN AND ROTA PAC - NEW 2015



2. PRIMARY PUMPING STATION - A PUMPS TO TREATMENT



2. PRIMARY PUMPING STATION- 8 PUMPS TO FLOW REGULATION POND



2. PRIMARY PUMPING STATION- FLOW RECORDER



2. PRIMARY PUMPING STATION - FLOW RECORDER



3. METCAN GRIT REMOVAL AND SAND Dewatering SCREW



4. LARGER PRIMARY CLARIFIER - GEAR DRIVE OUT FOR REPAIRS



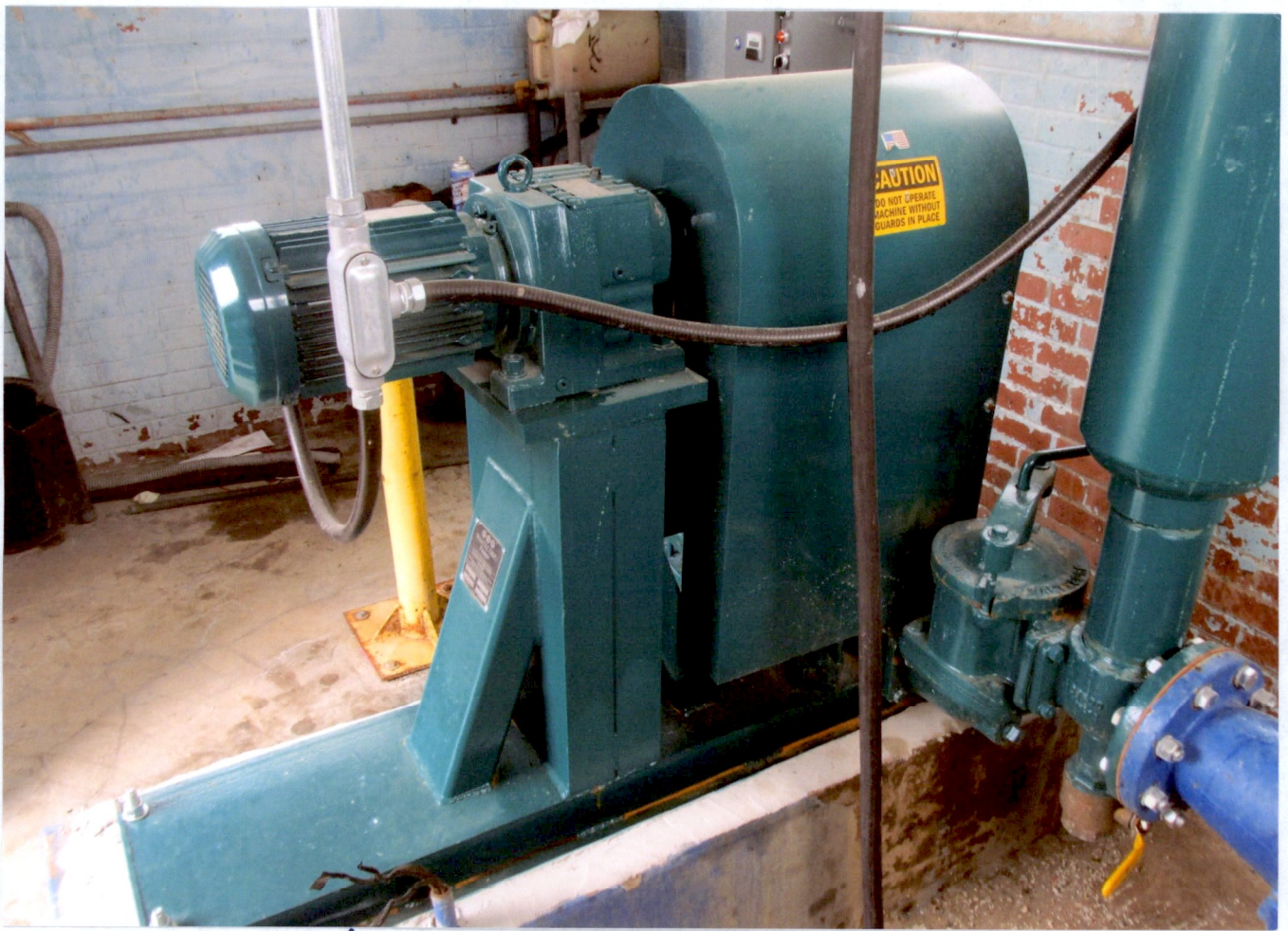
4. MID SIZE PRIMARY CLARIFIER



4. MID SIZE PRIMARY CLARIFIER



4. PENN VALLEY PRIMARY SLUDGE PUMP



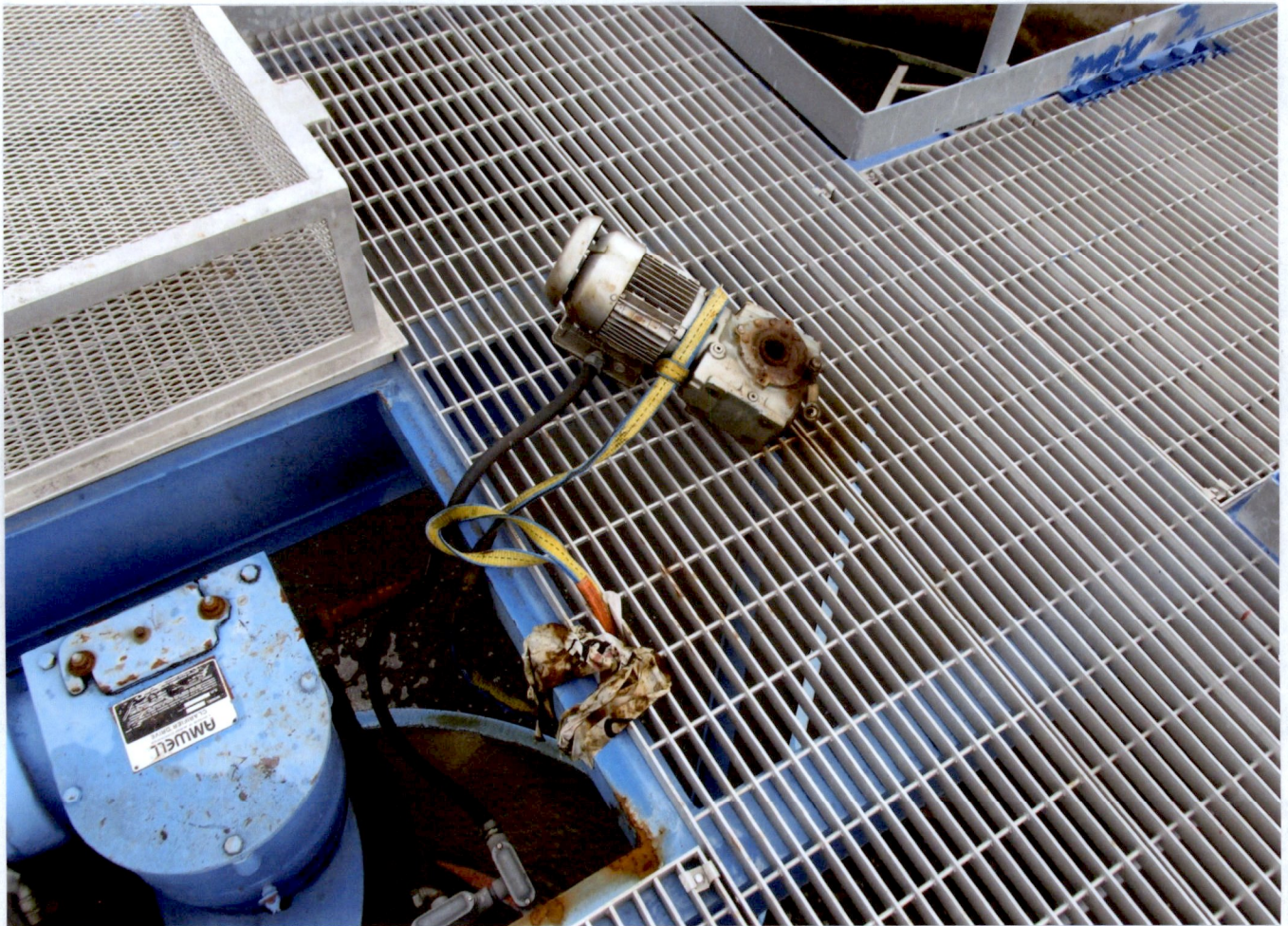
4. MARLOW WASTECORE PUMP - NEW 2015



5. OPERATING TRICKLING FILTER



5. TRICKLING FILTERS RECIRCULATION PUMP STATION
4TH PUMP REPAIRED AND BACK IN SERVICE



6. INTERMEDIATE EAST CLARIFIER - GEAR DRIVE OUT



7. BIO TOWER FIELD REPAIRS TO STRUCTURE



8. BIO TOWERS RECIRCULATION PUMP STATION - REPAIRS MADE BACK IN SERVICE



9. NORTH CLARIFIER PUMP STATION- DOWN FOR REPAIR



9, NORTH CLARIFIER- DOWN FOR GEAR DRIVE REPAIR



14. SOUTH AERATOR IN FLOW REGULATION POND TO BE REPAIRED



14. PUMP BACK PUMP STATION-LOOKING DOWN THRU MANWAY



15. WEST SIDE DECANT- DOWN FOR REPAIRS- REPAIRS
MADE- BACK IN SERVICE

**MAP(S)/PLAN(S) SCANNED IN
SEPARATE FILE**



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Stuttgart Municipal Water Works
P.O. Box 130
Stuttgart, AR 72160

Arkansas Dept. of Environme
5301 Northshore Drive
North Little Rock, AR 72118-

ATTN: Alan Anderson
Water Division, Enforcement

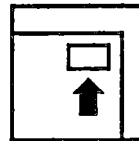
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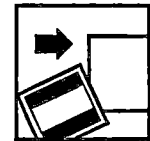
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